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The Impact of IFRS Adoption on Earnings Management-Results from Canada

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Abstract

The purpose of this paper is to find out the impact of the adoption of IFRS on the practice of earnings management. It provides empirical results using panel data from 2000 to 2018 of the 19,869 firm-year observations of available data from 791 Canadian firms based on the Modified Jones model. The result of our study supports that there is the existence of earnings management practice. The overall result was negative but not significant suggesting adopting IFRS has no direct influence on earnings management used among publicly listed firms. In addition, this paper examined the influence of firm factors (independent variables) of leverage, return on assets, and earnings growth, the interaction variables of IFRS adoption on earnings management. Obtained results in this paper indicate the interaction variable of IFRS adoption is positively related with earnings management, but not significant, suggesting that adopting IFRS has no direct influence on earnings management used among publicly listed firms.

Keywords: Discretionary accruals (DACC), Earnings management (AM), Return on assets (ROA), Leverage (LEV), Delta earnings before interest, and taxes (Δ EBIT).

INTRODUCTION

Financial reporting in Canada has been undergoing a remarkable change since International Financial Reporting Standards (IFRS) have been adopted as Canadian Generally Accepted Accounting Principles (GAAP) for publicly accountable enterprises and government business entities. In the past, Canadian standards for financial accounting and reporting by public companies were developed by the Accounting Standards Board (AcSB).¹ Since the adoption of IFRS, the AcSB has been active in monitoring the technical content and timing of standards implementation to Canadian public companies which are required to report under IFRS no later than 2011. The International Accounting Standards Board (IASB) is responsible for developing and publishing IFRSs which have been increasingly adopted globally, with or without adaptation. Earnings is a measure that provides an indication of the inherent value transformation of a company, in essence, how well a company transform their assets, knowledge, experience, and expertise into monetary values. It is an estimate that grants owners and stakeholders an indication of the company's ability to generate value for the shareholders, which means that it is a principal point in determining share price (Cotter, 2009). Hence, an adjustment of earnings could change the view of a company and how it performs. Therefore, not surprisingly, Burgstahler and Dichev (1997) argue that earnings is the single most important measure for managers and therefore represents a focal point. Burgstahler and Dichev

(1997) continue by stating that consistent earnings with a slight upward trend is a desirable pattern for managers, in other words, surprises are not suitable. DeAngelo, DeAngelo, and Skinner (1996) argue that, on average, a company interrupting their upward trend could expect a 14% negative return the same year as the interruption. One could, therefore, suggest that there are a lot of incentive to keep earnings positive since a negative message to the market could have sincere ramifications on the company's performance in the stock market. Hence, earnings is an essential part of financial reporting, and it is a measure that communicates to owners, stakeholders and the market how well the company is managed and performs, which in turn has a profound impact on the company's share price which provides incentives to 'manage earnings.'

Callao and Jarne (2010) define earnings management as "the use of accounting practices within limits available within a comprehensive basis of accounting by management in order to achieve a desired result" (p. 160). Earnings management often occurs when managers use judgment in financial reporting and when they structure transactions (Healy and Wahlen, 1999).

Prior accounting research has examined whether IFRS adoption reduces the management of accrual-based earnings and the use of discretionary accruals. Discretionary accruals are those components of reported income that are discretionary or abnormal and are due to management choices they often used as a proxy for discussing and measuring accrual-based earnings management. Cai et al. (2014) discuss accounting studies that examine whether IFRS influences earnings management provide inconclusive results since a couple of studies have provided evidence of IFRS adoption having a positive influence on earnings management among European Union (EU) member states (Chen et al., 2010; Zeghal et al., 2011; Zeghal et al., 2012) whereas on the contrary a couple of studies have provided evidence of IFRS adoption having a negative influence on earnings management among EU member states (Ahmed et al., 2013; Callao and Jarne 2010). A positive influence depicts that IFRS adoption reduces earnings management, whereas a negative influence depicts that IFRS adoption stimulates earnings management. This inconclusive evidence shows that the influence of mandatory IFRS adoption on earnings management remains an open empirical issue that warrants further investigation.

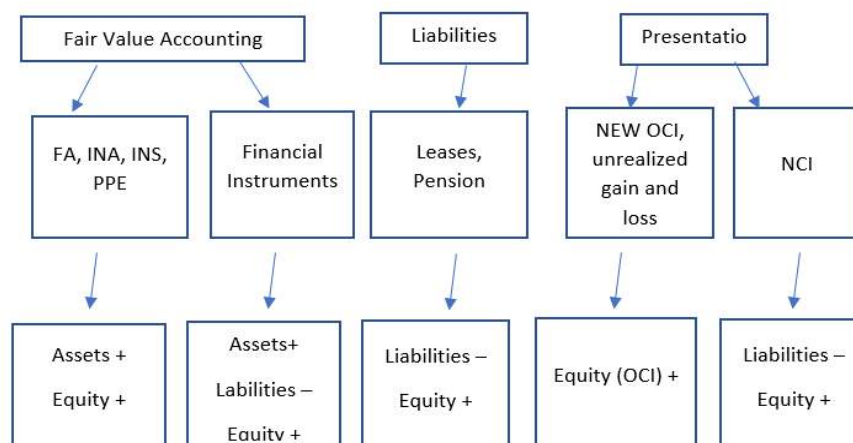
LITERATURE REVIEW HYPOTHESIS DEVELOPMENT

Incremental Effects on Financial Statements of the Adoption of IFRS in Canada

The conceptual framework of IFRS is like the one of Canadian GAAP. Both are principle-based and require professional judgment in application. While the main areas of fundamental difference can be attributable to fair value accounting and consolidation, there are several other areas of potentially significant differences in the detailed application (Blanchette, 2007).⁹ In the area of long-lived assets, IFRS, like Canadian GAAP, requires impairment tests. Although the conceptual justification for impairment – conservatism – is the same under the two regimes, the result can differ significantly.

On the liability side, several IFRS differ from the corresponding standards under Canadian GAAP. The standards on leases, pensions, and contingencies may require different levels of liabilities under IFRS. Also, the standard on share-based payments may change expenses and equity. Leverage and profitability ratios are particularly sensitive to these standards.

Figure 1 highlights the potential incremental effects on financial statements and of the IFRS adoption in Canada.

Figure 1. The Effects on Financial Statements of the Adoption of IFRS in Canada

The fair value concept adopted by Canadian companies caused by a migration to IFRS represents a departure from the traditional historical cost principle rendered under earlier Canadian GAPP. Specifically, in the investment property standard which set in IAS16 that became an effective force on January 1, 2011. Because of the revaluation of assets, the value of these assets can go up or fall. Differences arising from the revaluation of assets that encounter a hike are recognized as revaluation surplus which is a benefit/profit for the company, the benefits recognized are reported in the income statement, thus increase profit for the company. When the difference is a decrease in the asset revaluation, it means losses for the company and the same for the Impairment in asset value. These changes will greatly affect the financial statements of a company when at the end of the road, will have impacts on the assessment of the company's profitability ratio consist of profit margin ratio (profit margin on sales), return on assets (ROA), and return on equity (ROE).

Lantto and Sahlström (2009) investigated the impact of IFRS on financial ratios in Finland, by comparing ratios calculated under IFRS and Finnish GAAP for the same time period – the year 2004. The authors found leverage and profitability ratios increase under IFRS. Leverage ratios increase as more liabilities are recognized under IFRS; these liabilities result from lease accounting (IAS 17), employee benefit obligations (IAS 19), and financial instruments (IAS 32 and 39). Profitability ratios increase because profit is higher under IFRS due primarily to business combinations (IFRS 3) and the combined effects of several other standards.

Accordingly, I leverage and corporate performance by including some control variables. These control variables are Leverage (LEV), Return on Assets (ROA), and Earnings before Interest and Tax (EBIT).

Effect of IFRS Standard Adoption on Earnings Management

It is possible to conjecture that, in general, both investors and the market respond positively to the movement towards the adoption of IFRS, since these international standards are expected to result in better financial reporting quality, and therefore have the potential to reduce information asymmetry between the company and its stakeholders, reducing the risk of information and, consequently, the cost of capital. In the process of adoption and financial reporting according to the financial accounting standard, management interest often dominates the principal interest. The agency theory exemplifies that conflict of interest always occurs between the principal and the agent. Therefore, there must be a mechanism and tools that can suppress the conflict of interest. The management has the opportunity to use any gap of the judgment in applying the financial reporting standard so that its earnings are obtained by exploiting policies in the financial reporting. Scott (1997) writes, from the financial reporting perspective, the concept of manage of earning allows the manager to possess more detailed information about the financial statement to fulfill their needs by using policies in the adoption of the accounting standard to perform earnings management. The IFRS focuses on the use of management judgment and transparent process provided that the management is more capable of disclosing the organization's policy to improve the

positive value from the externalities. A few articles that cover earnings management focusing on accounting change and/or on the difference between standards are presented in Table 1.

Table 1: Literature Review - Findings of prior research surveys on IFRS adoption and Earnings management

References	Country	Topic	Results
Callao and Jarne (2010)	European Union	The change of earnings management (AM) after adopting IFRS	Earnings management (AM) increased after the adoption of IFRS
Denis (2016)	Canada 2016	The Advent of IFRS in Canada: Incidence on Value Relevance	Less earnings management accompanies IFRS adoption.
Jermakowic (2017)	Canada 2011-2017	Financial statement effects of adopting IFRS: the Canadian experience	IFRS in Canada created more relevant financial reporting for the book value of equity and net income.
Doukakis (2014)	European Union 2000-2010	The effect of mandatory IFRS adoption on real and accrual-based earnings management activities	No significant impact of IFRS on earnings management through AM
Frentinou and Anagnostopoulou (2016)	Greece 2001-2008	Accrual-based and real earnings management before and after IFRS adoption: The case of Greece	Significant move to from AM
Hilliard (2013)	Canada 2009-2013	The effects of adopting IFRS: the Canadian experience	The result from the tests of value relevance were not statistically significant.
Hellman (2011)	Sweden 20014-2005	The impact of IFRS on financial statements	The findings indicate that firms gained discretion which was used for earnings management
Rathke, Santana, and Lourenco (2016)	Latin America 2010-2012	Amount of earnings management (AM) after the adoption of IFRS of US cross-listed firms	Cross-listed Latin American firms show a high level of earnings management (AM).
VanTendelo and Vanstraelen (2005)	Germany 1999-2001	Does voluntary adoption of IFRS reduce earnings management (AM)	Earnings management (AM) under IFRS was not different from earnings management under local German GAAP
JeJeanjean and Stolowy (2008)	Australia, France& UK 2002 -2006	Earnings management before and after IFRS	Earnings management increased post-IFRS
Kao (2014)	China 2002-2009	Relationship between IFRS, earnings management and earnings losses thresholds	Earnings management did not increase after the adoption of IFRS
Lyu, Yuen, Zhang, and Zhang	China 2011	Impact of IFRS adoption on earnings management	Adopting IFRS reduced earnings management, and the quality of earnings increased.

NavarroGarc'ia and Madrid- Guijarro (2014)	Germany 1998-2006	The impact of IFRS on earnings management	Earnings management reduced after the adoption of IFRS
Paglietti (2009)	Italy 2002-2007	The impact of IFRS on earnings management, timely loss recognition, and value relevance	Earnings management increased, and timeliness decreased, while value relevance increase
Pelucio-Grecco, Geron, Grecco, and Lima (2014)	Brazil 2005-2012	Impact of IFRS on earnings management	Earnings management reduced with the full implementation of IFRS
Rathke et al. (2016)	Latin American 2010-2012	Amount of earnings management after the adoption of IFRS of US cross-listed firms	Cross-listed Latin American firms show a high level of earnings management compared to continental Europe and Anglo-Saxon firms
Van Tendeloo and Vanstraelen (2005)	Germany 1999-2001	Does voluntary adoption of IFRS reduce earnings management	Earnings management under IFRS was not different from earnings management under local German GAAP
Wang and Campbell (2012)	China 1998 - 2009	Earnings management before and after IFRS	IFRS did not change the level of earnings management
Zéghal, Chtourou, and Sellami (2011)	France 2003-2006	The impact of IFRS on earnings management	Earnings management reduced after the implementation of IFRS
Hai Q. Ta (2014)	Canada 2011-2014	Effects of IFRS adoption on earnings quality: Evidence from Canada	Earnings quality improves following the adoption of IFRS

HYPOTHESES DEVELOPMENT

Despite the contrary empirical evidence, considering that IFRS are intended to be a single set of high-quality accounting standards to promote transparent and comparable information to inform economic decisions (Chen et al. 2010); considering the intense discussions by regulators about the potential for improving the quality of information through IFRS, the adoption may positively affect earnings management because its principle-based standards offer more rooms for managers to use their professional judgments in financial reporting instances. To test the research four questions, I hypothesize the following:

H1: In Canadian listed companies, the level of earnings management has a positive effect because of the mandatory introduction IFRS instead of Canadian GAAP.

The dependent variable for the testing of hypothesis 1 is the discretionary accruals and is based on the estimation of the Modified Jones Model regression model.

$$DACC_{i,t} = \beta_0 + \beta_1 IFRS_t + \varepsilon_{i,t} \dots \dots \dots \text{model 1}$$

Hypothesis 1 is tested again with the additional control variables based on the discretionary accruals concerning the Modified Jones model, the next cross-sectional regression, including the control variables, is performed:

$$DACC_{i,t} = \beta_0 + \beta_1 IFRS_t + \beta_2 LEV_{i,t} + \beta_3 ROA_{i,t} + \beta_4 \Delta EBIT_{i,t} + \varepsilon_{i,t} \dots \dots \dots \text{model 2}$$

Leverage, ROA, Δ EBIT, IFRS adoption and earnings management

To expand understanding of the relationships among the variables in the model and allows more hypotheses to be tested, I study the interaction between independent control variables and IFRS towards the effect on the earnings management using the following hypothesis:

H2: Compared to pre-IFRS period, after the introduction of IFRS, a higher leverage increases earnings management.

This hypothesis is tested by the model:

$$DACC_{i,t} = \beta_0 + \beta_1 IFRS_t + \beta_2 LEV_{i,t} + \beta_3 (LEV \times IFRS)_{i,t} + \beta_4 ROA_{i,t} + \beta_5 \Delta EBIT_{i,t} + \varepsilon_{i,t} \dots \dots \text{model 3}$$

H3: Compared to pre-IFRS period, after the introduction of IFRS, a higher ROA increases earnings management.

This hypothesis is tested by the model:

$$DACC_{i,t} = \beta_0 + \beta_1 IFRS_t + \beta_2 ROA_{i,t} + \beta_3 (ROA \times IFRS)_{i,t} + \beta_4 LEV_{i,t} + \beta_5 \Delta EBIT_{i,t} + \varepsilon_{i,t} \dots \dots \text{model:4}$$

H4: Compared to pre-IFRS period, after the introduction of IFRS, a higher EBIT growth increases earnings management.

This hypothesis is tested by the model:

$$DACC_{i,t} = \beta_0 + \beta_1 IFRS_t + \beta_2 \Delta EBIT_{i,t} + \beta_3 (\Delta EBIT \times IFRS)_{i,t} + \beta_4 ROA_{i,t} + \beta_5 LEV_{i,t} + \varepsilon_{i,t} \dots \dots \text{model: 5}$$

RESEARCH METHODOLOGY AND DATA

Population, Sample and Data Collection Method

After the data has been corrected for outliers, the sample comprises using panel data from the year 2005 to 2018 of 20,704 firm-year observations of an available data from 791 Canadian firms based on the Modified Jones model. The Model use three independent variables to calculate the discretionary accruals. Some observations were deleted because these three terms were having less observation common. Table 2 shows the partitions of the observations per Industry. The data sources used in this study was secondary data, in the form of annual financial reports consists of all companies had filed financial statements under both Canadian GAAP prior to 2011 and IFRS beginning on or after January 1, 2011, sourced from the Toronto Stock Exchange (TSX) and SEDAR.

Table 2: Partitions of the observations per Industry.

Industry group	Freq.	Percent	Cum.
Agriculture	36	0.18	0.17
Construction	69	0.33	0.51
Finance	6,216	30.02	30.53
Manufacturing	2,733	13.20	43.73
Mining	8,552	41.16	84.89
Public	227	1.10	85.99
Retail	438	2.12	88.10
Services	1,286	6.21	94.32
Transportation	932	4.50	98.82
Wholesale	245	1.18	100.00

Total 20,704 100
Measurement of Variables

In this research, accrual earnings management is calculated using Modified Jones Models developed by Dechow et al. (1995). as follows:

$$a. TACC_t = \Delta CA_t - \Delta Cash - \Delta CL_t + \Delta DCL_t - DEP_t$$

where $TACC_t$ =total accruals, which is calculated as firm net income minus cash flows from operations; ΔCA_t = Change in current assets in year t ; $\Delta Cash_t$, ΔCL_t = Change in current liabilities in year t ; ΔDCL_t = Change in short term debt included in current liabilities in year t ; DEP_t = Depreciation and amortization expense in year t .

$$b. \frac{TACC_t}{A_{t-1}} = \alpha_1 \frac{1}{A_{t-1}} + \alpha_2 \frac{(\Delta REV_t - \Delta REC_t)}{A_{t-1}} + \alpha_3 \frac{PPE_t}{A_{t-1}} + \varepsilon_t$$

Where $TACC_t$ = Total accruals in year t divided by total assets in year $t-1$; ΔREV_t =Delta revenue in year t ; ΔREC = Delta receivable in year t ; PPE_t = Gross property plant and equipment in year t ; A_{t-1} = Total assets in year $t-1$; α_1 , α_2 , and α_3 = Parameters; ε_t Residual in year t . Discretionary accruals can be calculated with the next formula:

$$c. DACC_t = TACC_t - NDACC_t$$

Where $NDACC_t$ = Non-discretionary accruals divided by total assets in yer $t-1$;
 Where $DACC_t$ = Discretionary accruals for the firm in year t .

The other research variables are:

d. Return on assets (ROA) is an indicator of how profitable a company is relative to its total assets. ROA was chosen because of its ability to measure the return of a company without it being misrepresented by debt. The Formula that often used to calculate the Return on Assets = EBIT/ Lag total assets (EBIT/ A_{t-1})

e. Leverage (LEV) Total-debt-to-total-assets is a leverage ratio that defines the total amount of debt relative to assets. The Formula that often used to calculate the LEV is $Leverage = TL / TA$

f. $\Delta EBIT$ refers to the change in income before deduction of interest expense and income taxes between year t and year $t-1$, as indicators of income smoothing practices the growth rate of earnings before interest and taxes equation is: $\Delta EBIT = (EBIT - EBIT-1)$

h. Earning Smoothing's (ES) I estimate income smoothing as the negative correlation between the change in a firm's discretionary-accruals proxy ($\Delta DACC$) and the change in its pre-discretionary income as a ($\Delta EBIT$). proxy for earnings management
 $ES = Corr (\Delta DACC, \Delta EBIT)$

RESEARCH RESULTS AND DISCUSSION

Descriptive Statistics and Correlation Matrices

Descriptive statistics are presented in Tables 3 and 4, and the correlation results are presented in Table5. According to the results in table 3, the average total accruals are decreasing quite significant in the period after IFRS. Though, this finding is based on the total accruals and does not necessarily prove the same for the discretionary accruals. The summary statistics for the mean value of the non-discretionary accruals been decreased from 0.097 before IFRS and to (-0.105) after adopting IFRS. The mean value of the discretionary accruals before IFRS is 0.158 and

it is 2.91 while IFRS. This indicates that the discretionary accruals increased significantly after IFRS implementation. We can see the standard deviation for TACC and DACC before and after adoption IFRS are larger than the mean and unusually high. This indicates that each activity manipulation points are spread out across a large range of values. The may be the reason behind such large standard deviations is that in each year, the use of operational transactions to manipulate earnings would be significantly different among the companies. Some firms may manipulate earnings slightly while others may smooth earnings depending on operational transactions. Under this assumption, the standard deviation in each year would be very large and lead to the standard deviation of the total sample becoming unusually high too.

Table 3: Summary statistics for the proxies of earnings management. *TACC* = Total Accruals; *NDACC* = Non-Discretionary Accruals; *DACC* = Discretionary Accruals.

Variable		Obs	Mean	Std.Dev.
TACC	Pre-IFRS	1314	-63.232	258.543
	Post-IFRS	1679	-132.798	540.577
DACC	Pre-IFRS	1176	0.158	242.902
	Post-IFRS	1499	2.908	354.042
NDACC	Pre-IFRS	1176	0.097	5.809
	Post-IFRS	1499	-0.105	1.644

Table 4: Descriptive Statistics *other variables*. *LEV* = leverage; *ROA* = return on assets; $\Delta EBIT$ = difference of the earnings before interest rates and taxes; $\Delta TA = \Delta$ Assets; $\Delta TL = \Delta$ Liabilities

	Variables	Obs	Mean	St.Dev
LEV	Pre-IFRS	2605	0.914	16.258
	Post-IFRS	2917	4.566	106.906
ROA	Pre-IFRS	2483	-0.137	4.098
	Post-IFRS	2792	2.797	7.461
$\Delta EBIT$	Pre-IFRS	1474	15.832	354.016
	Post-IFRS	1792	26.798	350.789
ΔTA	Pre-IFRS	1880	681.357	6522.152
	Post-IFRS	1546	595.937	6854.347
ΔTL	Pre-IFRS	1948	488.396	5364.808
	Post-IFRS	1834	682.780	5597.418

As seen in Table4, for the period after the IFRS, the average value of LEV (4.566) is higher than before the IFRS (0.914) with standard deviation much higher than the mean (106.906). It can be concluded that has more variability in its mean. Increase in the average of LEV in the period after IFRS is happening due to the decrease in the average value of total assets and an increase in the value of total liabilities. The mean value for ROA after the IFRS (2.797)

and standard deviation (7.461) are significant bigger than before the adoption of IFRS (mean = -0.137, standard deviation = 4.098) indicating that increase in total assets and earnings before interest and tax quit big if compared with before the implementation of IFRS. The same happens with the average value of the $\Delta EBIT$ with standard deviation much higher than the mean in the period before and after the adoption of IFRS concluded that has more variability in its mean.

Table 5 reports the Pearson correlations among these variables. The table shows that IFRS adoption has a negative correlation with the DACC activities' manipulation proxies and all the control variables, except for ROA. The DACC activities manipulation proxies are also negatively correlated with the control variables except for ROA. Also, we can see a negative correlation between $\Delta EBIT$ and $\Delta DACC$ (-0.055) this indicate that there is an innate, un-managed income series and that management uses discretionary accruals to smooth earnings. Earning smoothing as another proxy for earnings management.

Table 5: Correlations. TACC = Total Accruals; NDACC = Non-Discretionary Accruals; DACC = Discretionary Accruals; LEV = leverage; ROA = return on assets; $\Delta EBIT$ = 1st difference of the earnings before interest rates and taxes.

Variables	TACC	NDACC	DACC	IFRS	LEV	ROA	$\Delta EBIT$	$\Delta DACC$
TACC	1.000							
NDACC	-0.003	1.000						
DACC	-0.001	0.068	1.000					
IFRS	-0.053	0.016	-0.038	1.000				
LEV	0.012	0.002	-0.037	0.034	1.000			
ROA	-0.027	-0.004	0.014	-0.018	-0.528	1.000		
$\Delta EBIT$	-0.089	0.004	-0.002	0.001	-0.009	0.026	1.000	
$\Delta DACC$	0.005	0.098	0.740	-0.008	-0.021	0.009	-0.055	1.000

Estimations of the Modified Jones model

In Table 6, the estimation results of the Modified Jones Model. Dependent variable is total accruals, which is defined as $\frac{TACC_t}{TA_{t-1}}$. The independent variables are: α_1 (TA_{t-1} = 1-year lag of total assets); α_2 (ΔREV = 1st difference of revenues or sales; ΔREC = 1st difference of receivables); α_3 PPE = property, plant, and equipment. Standard errors in parentheses.

Table 6: The estimation results of the Modified Jones Model

TACC_ta	Coef.	St.Err.	t-value	p-value	[95% Conf	Interval]	Sig
α_1	0.014	0.016	0.84	0.005	-0.018	0.046	***
α_2	0.980	0.020	48.81	0.000	0.941	1.019	***
α_3	-0.285	0.008	-36.01	0.001	-0.301	-0.270	***
Constant	0.199	0.123	1.61	0.107	-0.043	0.441	
Mean dependent var		-0.024	SD dependent var			9.820	
R-squared		0.582	Number of obs			2675	
F-test		1241.195	Prob > F			0.000	

*** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$

The Coef in the table 6 is the regression coefficient for all three variables, so this is the part that the dependent variable changes because of a change in the independent variable. In short, this table shows that β_1 is 0.014, β_2 is

0.980, and β_3 is -0.285. For example, this means that when the variable $[\Delta REV(i,t) - \Delta REC(i,t)] / A(i,t-1)$ increases with 1, the dependent variable $TA(i,t) / A(i,t-1)$ increases with 0.285. Both the total assets and the revenue minus the receivables have a positive influence on the total accruals, while the gross property, plant, and equipment has a negative influence on the level of the total accruals. The overall model was said to be significant, and all individual variables are. As is shown in table three, the variable $1/A(i,t-1)$ is significant since the value of 0.005 is smaller than 0.05. The other two independent variables are significant since 0.000 and 0.001 are both smaller than 0.05. and finally, the R^2 is high (58.2%), and this statistic defines the explanatory power of the model variables, i.e., they explain for 58.2% the variation in the total accruals. Obviously, this model is sufficient to estimate the discretionary.

Empirical Results

In this study, the analysis of H1 was performed by using Model 1 and 2. while the analysis of H2.H3 and H4 was performed by using the results of regression Model 3,4, and 5, respectively.

Table 7 and 8 Explanation of the discretionary accruals and of the abnormal discretionary expenses with (out) control variables. Dependent variable is discretionary accruals that is estimated by means of the Modified Jones model, which is defined as $DACC_t / TA_{t-1}$. The independent variables are IFRS = dummy variables with 0 the period before the introduction of International Financial Reporting Standards and 1 after the introduction. LEV = leverage; ROA = return on assets; $\Delta EBIT$ = 1st difference of the earnings before interest rates and taxes.

Table 7: Regression analysis for Model 1

DACC	Coef.	St.Err.	t-value	p-value	[95% Conf Interval]	Sig
IFRS	-0.376	0.247	-1.52	0.129	-0.860	0.109
Constant	0.211	0.185	1.14	0.255	-0.152	0.573
Mean dependent var		0.000	SD dependent var			6.347
R-squared		0.001	Number of obs			2675
F-test		2.312	Prob > F			0.129

*** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$

Table 8: Regression for Model 2

DACC	Coef.	St.Err.	t-value	p-value	[95% Conf Interval]	Sig
IFRS	-0.424	0.246	-1.72	0.185	-0.907	0.059
LEV	0.060	0.010	5.77	0.000	0.040	0.081 ***
ROA	0.032	0.020	1.64	0.102	-0.006	0.070
$\Delta EBIT$	0.000	0.000	-0.12	0.908	-0.001	0.001
Constant	0.182	0.184	0.98	0.325	-0.180	0.543
Mean dependent var		-0.002	SD dependent var			6.351
R-squared		0.314	Number of obs			2671
F-test		9.600	Prob > F			0.000

*** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$

It is observed from table 7, that the significance of the model is 0.000, which means that the model is significant and have an explaining power since 0.00 is less than 0.05. This is an important thing to keep in mind when the results are discussed.

The regression coefficient for IFRS, when the dependent variable is Discretionary Accruals, is -0.424. It is a negative coefficient, meaning the level of discretionary accruals expected to increase by 0.424 when the dummy variable IFRS increases by 1. But, besides this coefficient being negative, it is not significant since the corresponding P-value is 0.185, which is large than 0.05. The hypothesis 1 asserts that a positive association implies that after the adoption of IFRS, the use of earnings management has increased. However, the findings show, that insufficient evidence exists to suggest that a positive association exists between the use of earnings management and the introduction of IFRS from 2011 on, for the stock listed companies in Canada. Hypothesis 1 is rejected. Also, we can see that only 0.1 % of DACC can be predicted from the IFRS independent variables.

However, in table 8, based on the explanation of the discretionary accruals, proxies by discretionary accruals, by IFRS and the control variables, it is evident that the adoption of IFRS has not a differential effect it on the discretionary accruals, it is observed that that dummy variable IFRS after introducing the control variable, is still negative and have no significant effect on DACC. We can see also that 31.5 % of DACC now can be predicted from the IFRS control variables after the control variables leverage, ROA, and Δ EBIT been added to the regression. Also, In the output of table 8 we can see the only the control variable Leverage is significant on the dependent variable and the P-Value for the other control variables (ROA, Δ EBIT) are positive and greater than common alpha level of 5% which indicates that it is not statistically significant on the abnormal discretionary expenses. In other words, during the sample period 2005-2018, even though control variables leverage, ROA, and Δ EBIT are added to the regression, no differential effect of the introduction of IFRS on respectively the discretionary accruals is found. Consequently, no evidence is found to suggest that an association exists with the use of earnings management and the mandatory adoption of IFRS concerning stock-listed companies in Canada.

Table 9 illustrates the relationship between leverage, IFRS, and DACC, and the results indicate that and IFRS has a significant negative effect on DACC. The analysis of the results revealed that the Model 3 overall is highly significant. The regression coefficient for IFRS, when the dependent variable is Discretionary Accruals, is -0.487. It is a negative coefficient but not significant since the corresponding P-value is 0.054 larger than 5% level of significance. The regression coefficient for leverage variable is 0.050, which is positive and has a significant effect on DACC before the adoption of IFRS. After adoption the IFRS It is observed that the regression coefficient for the interaction variable (IFRS*LEV) is positive and has a significant effect since the corresponding P-value is 0.009, which is lower than 0.05. In other words, a higher Leverage causes an increase of the use of earnings management after the introduction of IFRS and vice versa. H2 is accepted.

Table 9: Regression for Model 3

DACC	Coef.	St.Err.	t-value	p-value	[95% Conf	Interval]	Sig
IFRS	-0.487	0.252	-1.93	0.054	-0.982	0.008	*
LEV	0.050	0.097	-0.52	0.004	-0.240	0.139	**
IFRS*LEV	0.111	0.096	1.15	0.009	-0.078	0.300	**
ROA	0.030	0.020	1.53	0.126	-0.008	0.069	
Δ EBIT	0.000	0.000	-0.12	0.908	-0.001	0.001	
Constant	0.242	0.192	1.26	0.206	-0.134	0.618	
Mean dependent var		-0.002	SD dependent var			6.351	
R-squared		0.015	Number of obs			2671	
F-test		7.946	Prob > F			0.000	

*** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$

Table 10 shows that this model has a significant explaining power since the significance is 0.00. However, *while the overall model was said to be significant, not all individual variables are. As is shown in table 10, the variables (ROA, Δ EBIT beside IFRS) are not significant.* The R² for this model is only 0.114, which means that approximately 11.4% of the discretionary accruals is explained by the model independent variables under which the financial report is made. This means that the explaining power of this model is low. There were no significant outliers in the data that could bring the noise to the results, so that is not the reason that the models' R² is so low.

The analysis of the results revealed that the regression coefficient for moderation effect of the IFRS on the relationship of ROA and earnings management (DACC) is 0.024 positive *this means that when the variable (IFRS*ROA) increases with 1, the dependent variable DACC increases with 0.042.* However, the interaction variable is not significant since the corresponding P-value is 0.599, which is bigger than the 5% level. It is observed that there is no significant effect of the interaction of ROA with the dummy variable IFRS. In other words, a higher ROA has no significant effect on earnings management before and after the introduction of IFRS. H3 is rejected.

Table 10: Regression for Model 4

DACC	Coef.	St.Err.	t-value	p-value	[95% Conf Interval]	Sig
IFRS	-0.417	0.247	-1.69	0.091	-0.901 0.067	*
LEV	0.062	0.011	5.72	0.000	0.041 0.083	***
IFRS*ROA	0.024	0.046	0.53	0.599	-0.066 0.114	
ROA	0.013	0.040	0.33	0.739	-0.066 0.093	
Δ EBIT	0.000	0.000	-0.12	0.909	-0.001 0.001	
Constant	0.177	0.185	0.96	0.339	-0.185 0.539	
Mean dependent var		-0.002	SD dependent var		6.351	
R-squared		0.114	Number of obs		2671	
F-test		7.733	Prob > F		0.000	

*** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$

Again, table 11 shows that this model has a significant explaining power since the significance is 0.00. However, *while the overall model was said to be significant, not all individual variables are. In the table, the regression coefficient for all three variables [(IFRS* Δ EBIT), ROA, Δ EBIT] is positive, and this means the part that the dependent variable changes because of a change in the independent variable. Only the accounting principles IFRS has a negative coefficient, so when IFRS increases by 1, the dependent variable DACC decrease by 0.427.* The interaction variable between the IFRS and the delta EBIT should have a positive *regression coefficient* and has no significant effect on the DACC. In other words, a higher Δ EBIT has not caused an increase in the use of earnings management after the introduction of IFRS. H4 is rejected.

Table 11: Regression for Model 5

DACC	Coef.	St.Err.	t-value	p-value	[95% Conf Interval]	Sig
IFRS	-0.427	0.247	-1.73	0.084	-0.911 0.057	*
LEV	0.060	0.010	5.77	0.000	0.040 0.081	***
ROA	0.032	0.020	1.64	0.102	-0.006 0.070	
IFRS* Δ EBIT	0.000	0.001	0.22	0.829	-0.002 0.002	
Δ EBIT	0.000	0.001	-0.25	0.806	-0.002 0.001	
Constant	0.184	0.185	1.00	0.320	-0.178 0.546	
Mean dependent var		-0.002	SD dependent var		6.351	
R-squared		0.014	Number of obs		2671	

F-test	7.687	Prob > F	0.000
Akaike crit. (AIC)	17428.176	Bayesian crit. (BIC)	17463.517

*** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$

SUMMARY AND CONCLUSION

This study investigates the impact of IFRS on earnings management post- IFRS adoption and in relation to other variables of 791 Canadian publicly listed firms. The study employed the Modified Jones model as the basis of statistical analysis. It became clear that the mandatory adoption of IFRS by Canadian companies has no significant influence on earnings management and has not produced any meaningful impact on the independent control variables at 5% level of significance except for the variable Leverage, there was a significant influence namely, the higher the Leverage, the higher the level of earnings management. In addition, to expand understanding of the relationships among the variables in the model and allows more hypotheses to be tested, I study the interaction between independent control variables and IFRS to examine the effects on earnings management post- IFRS adoption. The study reveals that, the Modified Jones model is sufficient to estimate the discretionary accruals, and that all hypotheses have been rejected, except for H2 based. A higher LEV causes an increase in the use of earnings management after the introduction of IFRS and vice versa.

Limitations of the study

As with every research, a couple of limitations arise at this point. These will be discussed below. The first limitation is recognized by Lippens (2010). The focus of this research is only on accruals-based earnings management. However, this is not the only way of managing earnings. Real earnings management is another opportunity, but this is hardly measurable. Still, it could be possible that the conclusion about no change in the level of earnings management is no longer valid when real earnings management has been considered. The second limitation is with respect to the Modified Jones model. In the regression formula for estimating the nondiscretionary accruals, all variables of the year (t) are scaled by the total assets of year ($t-1$). This gives a problem for the year 2011, since the main variables such as revenue and property, plant and equipment are valued under IFRS methods, while the assets with which the variables are scaled are valued under Canadian GAAP method. A consequence is that this variable might be less valid when the numerator and the denominator of one number are calculated under different rules, especially when the value differs a lot under both standards.

References

- Blanchette, M., 2007. IFRS in Canada: evolution or revolution? CMA Management: May Canadian Institute of Chartered Accountants (CICA). 2009. The CICA's Guide to IFRS in Canada.
- Beattie, V., Edwards, K., & Goodacre A. (2003). "The impact of constructive operating lease capitalization on key accounting ratios". *Accounting and Business Research*, 28(4): 233-254.
- Burgstahler, D., & Dichev, I. M. 1997. Earnings management to avoid earnings decreases and losses". *Journal of Accounting and Economics*, 24(99): 99-125.
- Callao, S., & Jarne, J. I. (2010). Have IFRS affected earnings management in the European Union? *Accounting in Europe*, 7(2): 159-189.
- Capkun, V., Collins, D., & Jeanjean, T. (2016). The effect of IAS/IFRS adoption on earnings management (smoothing): A closer look at competing explanations. *Journal of Accounting and Public Policy*, 35(4): 352-394, doi: 10.1016/j.jaccpubpol.2016.04.002.
- Chen, H., Chen, Z.J., Lobo, G.J., & Wang, Y. (2010). Effects of audit quality on earnings management and cost of equity capital: Evidence from China. *Contemporary Accounting Research*, 28(3): 892-925.
- Chen, H., Tang, Q., Jiang, Y., Lin, Z. (2010). The role of international financial reporting standards in accounting quality: evidence from the European Union. *Journal of International Financial Management Accounting*, 21(3): 220-278.

- Cotter, D. (2009). "Advanced financial reporting: a complete guide to IFRS". New York: Financial Times/Prentice Hall.
- Denis Cormier and Michel L. Magnan (2016) The Advent of IFRS in Canada: Incidence on Value Relevance. *Journal of International Accounting Research*: Fall, Vol. 15, No. 3, pp. 113-130.
- DeAngelo, H., DeAngelo, L., & Skinner, D. (1996). Reversal of fortune: Dividend signaling and the disappearance of sustained earnings growth. *Journal of Financial Economics*, 40(3): 341-371.
- Dechow, P., S.P. Kothari, and R. Watts. 1998. The relation between earnings and cash flows. *Journal of Accounting and Economics* 25: 133-168.
- Dechow, P., Sloan, R. and Sweeney, A. (1995). Detecting earnings management. *The Accounting Review*, 70: 193-225.
- Debnath, P. (2017). Assaying the Impact of Firm's Growth and Performance on Earnings Management: An Empirical Observation of Indian Economy. *International Journal*, 30:221-124.
- Doukakis, L.C. (2014). "The effect of mandatory IFRS adoption on real and accrual-based earnings management activities". *Journal of Accounting and Public Policy*, Elsevier, Vol. 33, p. 551-572.
- Guoping Liu, Jerry Sun (2015). "Did the Mandatory Adoption of IFRS Affect the Earnings Quality of Canadian Firms?". *International Journal of Accounting & Information Management*, 10.1108/IJAIM-08-2017-0096, 26, 4, (466-491).
- Hai Q. Ta. (2014). "Effects of IFRS adoption on earnings quality: Evidence from Canada". A Thesis Submitted to the Faculty of Drexel University
- Healy, P.M. and Wahlen, J.M. (1999). A review of the earnings management literature and its implications for standard setting. *American Accounting Association, Accounting Horizons*, Vol. 13(4): 366-383.
- Hellman, N. (2011). Soft adoption and reporting incentives: A study of the impact of IFRS on financial statements in Sweden. *Journal of International Accounting Research*, 10(1): 61-83.
- Houge, M.N., van Zijl, T., Dunstan, K. and Karim, A.K.M.W. (2012). "The effect of IFRS adoption and investor protection on earnings quality around the world". *The International Journal of Accounting*, Elsevier, Vol. 47, p. 333-355.
- Holthausen, R. W. (2009). "Accounting standards, financial reporting outcomes, and enforcement". *Journal of Accounting Research*, Chicago Booth, Vol. 47(2), p. 447-458.
- Jermakowicz, Eva K and Chen, Chun-Da and Donker, Han. (2017). "Financial Statement Effects of Adopting IFRS: The Canadian Experience". Forthcoming in *International Journal of Accounting and Information Management*, 26(4). Available at SSRN: <https://ssrn.com/abstract=3089834>
- Jeanjean, T., & Stolowy, H. (2008). Do accounting standards matter? an exploratory analysis of earnings management before and after IFRS adoption. *Journal of Accounting and Public Policy*, 27(6): 480-494.
- Kao, H. (2014). The relationships between IFRS, earnings losses threshold and earnings management. *Journal of Chinese Economic and Business Studies*, 12(1): 81-98.
- Lantto, A. M. and P. Sahlström P. 2009. Impact of International Financial Reporting Standard Adoption on Key Financial Ratios. *Accounting and Finance* 49: 341-361.
- Lyu, C., Yuen, D. C. Y., Zhang, X., & Zhang, N. (2014). The impact of IFRS adoption on real activities manipulation: Evidence from China. *Journal of Applied Management Accounting Research*, 12(2): 17-39.
- Li, Nivine Richie. (2016). "Income smoothing and the cost of debt". *International Journal of Academic Research in Accounting, Finance, and Management Sciences*, Vol. 3, No.3, pp. 234-241.
- Lippens, M. (2010). "The mandatory introduction of IFRS as a single accounting standard in the European Union and the effect on earnings management", *InBook*, 81-103.
- Liu and Sun (2015). "suggest that there has been no significant change in earnings quality for public Canadian firms after the adoption of IFRS". *Accounting Perspectives*, 16, 3, (139-168), (2017).
- Maulia Dewi Anggraeni; Ratna Wardhani (2017). The effect of leverage and IFRS convergence on earnings management through real activities manipulation in Asia. 49: 341-361.
- McNichols, M. (2000). "Research design issues in earnings management studies". *Journal of Accounting and Public Policy* 19: 313-345.
- Navarro-García, J. C., & Madrid-Guijarro, A. (2014). The influence of improvements in accounting standards on earnings management: The case of IFRS. *Australian Accounting Review*, 24(2): 170.
- Nenzih. (2015) "The Adoption of IFRS – Impact on Profitability Rate and Tax Income: Evidence from Companies Indonesia Listed in Indonesian Stock Exchange". *Research Journal of Finance and Accounting*. Vol.6. No.11. ISSN 2222-2847.
- Paglietti, P. (2009). Earnings management, timely loss recognition and value relevance in Europe following the IFRS mandatory adoption: evidence from Italian listed companies. *Economia Aziendale Online* 2000 Web, 1(4): 97-117.
- Pelucio-Grecco, M. C., Geron, C. M. S., Grecco, G. B., & Lima, J. P. C. (2014). The effect of IFRS on earnings management in Brazilian non-financial public companies. *Emerging Markets Review*, 21: 42-66.

- Rathke, A. A. T., Santana, V. F., Lourenco, I. M. E. C., & Dalmacio, F. Z. (2016). International financial reporting standards and earnings management in latin america. *RAC - Revista de Administrac,ao Contempor ~ anea ^*, 20(3), 368-388.
- Rhee, C. S., Yoo, Y. K., & Cha, S. M. (2016). "The Effect Of IFRS Adoption On Likelihood Of Management Earnings Forecasts: Evidence In Korea". *Journal of Applied Business Research (JABR)*, 32(6), 1697-1706. <https://doi.org/10.19030/jabr.v32i6.9817>.
- Roberto Carlos: LLse Maria. (2018). "Earnings management IFRS adoption in Brazilian and British companies". *International Journal of Disclosure and Governance*, Volume 15, Issue 1, pp 13–28.
- Sadeghi, & Zareie. (2015). "Relationship between earnings management and financial ratios at the family firms listed in the Tehran stock exchange". *Indian Journal of Fundamental and Applied Life Sciences*, 30: 221-124.
- Sellami, M., & Fakhfakh, H. (2013). "Effect of the mandatory adoption of IFRS on real and accruals-based earnings management: Empirical evidence from France". *International Journal of Accounting and Economics Studies*, 2(1): 22-33, doi: 10.14419/ijaes.v2i1.1485.
- Scott, W.R. (2015), *Financial Accounting Theory*. 7th ed. Scarborough: Prentice Hall.
- Singgih Wijayana & Sidney J. Gray. (2018)." Institutional factors and earnings management in the Asia-pacific: is IFRS adoption making a difference? *Management International Review*, Volume 59, Issue 2, pp 307–334
- Sloan, R., 1996. "Do stock prices fully reflect information in accruals and cash flows about future earnings," *The Accounting Review*, 71(3), pp. 289-315.
- Theresa Hilliard. (2013). "The Effects of Adopting IFRS: The Canadian Experience". Georgia State University ScholarWorks @ Georgia State University.
- Van Tendeloo, B., & Vanstraelen, A. (2005). Earnings management under German GAAP versus IFRS. *European Accounting Review*, 14(1): 155-180.
- Wang Y., & Campbell M. (2012). Corporate governance, earnings management, and IFRS: Empirical evidence from Chinese domestically listed firms. *Advances in Accounting, incorporating Advances in International Accounting*, 28(1): 189-192, doi: 10.1016/j.adiac.2012.03.007.
- Wang, Y., & Campbell, M. (2012). Earnings management comparison: IFRS vs. china GAAP. *International Management Review*, 8(1): 5-11.
- Widyastuti, T. (2009). "Pengaruh struktur kepemilikan dan kinerja keuangan terhadap Manajemen laba: Studi pada perusahaan manufaktur di BEJ. MAKSI, 9. ISSN 1412-6680.
- Zeghal, D., Chtourou, S., & Sellami, Y. M. (2011). An analysis of the effect of mandatory adoption of IAS/IFRS on earnings management. *Journal of International Accounting, Auditing, and Taxation*, 20(2): 61-72.
- Zeghal, D., Chtourou, S.M. and Fourati, Y.M. (2012). "The effect of mandatory adoption of IFRS on earnings quality: Evidence from the European Union". *Journal of International Accounting Research*, American Accounting Association, Vol. 11(2), p. 1-25

E-Tourism Adoption of the Travel Agencies in Cebu City, Philippines

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Abstract

Information Communication Technology (ICT) plays an active role in the tourism industry. The application and integration of ICT are essential for the success of a tourism enterprise. ICT assists the individual in an enterprise to access information on the World Wide Web in a single click which changes the traditional brick and mortar travel agency operations. Even with the emergence of Technology 50 years ago, Small Medium Enterprises are reluctant to operate and adopt Technology Applications for Technological and Non-Technological Reasons. The study used an adapted research instrument from Davis (1989) and Turban et al. (2008). Principal respondents are the accredited travel agencies in Cebu City as of 2017. Using Technology Acceptance Model (TAM) of Davis (1989), respondents perceived that ICT is useful regarding accomplishing the task quickly, increase productivity and effectiveness and it is easy to use regarding operating and interacting ICT. Respondents would probably use the technology in the workplace for sales and marketing and to recommend the technology to others for Business Operations. However, there is no significant relationship on the ease of use (PEOU) and usefulness to the in the Intention to use. This means that the respondents may or may not adopt ICT because of Non Technological and Technological Reasons.

Keywords: eTourism, Technology Acceptance Model, Information Communication Technology

1. Introduction

1.1 Rationale of the Study

The Internet is the most significant innovation since the progress of the printing press. Currently, millions of people globally rely on the internet for working, learning, socializing, entertainment, leisure, and shopping (Buhalis, 2011). There had been a new e-commerce sector the so-called E-Tourism, eTourism is a way of transacting sales using the internet in selling tourism-related services such as Flight & Hotel Bookings, Car Rentals and even purchasing Tour Packages (Raez, 2011).

The evolution of the Internet and Information Communication Technologies (ICTs) has been transforming the implications for the Tourism Industry (Bethapudi, 2013). Today, many travel-services websites are using the Internet to access a variety of travel-related services to plan for trips, distributing information to the traveling public to book for flights and hotels. The current activity of Tour Operators would mean that these online travel suppliers could easily access to the traveling public which is also an indication that there is a stiff competition of the traditional travel agencies and virtual/online travel agencies (Namin et al., 2013).

Today, Tour and Travel Suppliers are reaching millions of travelers using the internet and new online distribution channels (Zare, 2013). Distribution of Internet users globally was presented by percentage, Asia that has 49 percent, Europe 17 percent, Latin America 10.5 percent, Africa 10.2 percent, North America 8.5 percent, and the Middle East 3.6 percent, Lastly the Oceania & Australia 0.7 percent (Internet World Statistics, 2018). It is also interesting to indicate that in 2010, the total number of internet users were more than one billion and forty-six million. Besides, these numbers highlight the rapid shift on electronic users in general and particularly in related travel services; therefore, there should be an adoption of the technology among traditional travel agencies (Namin, 2013).

The use of technologies in operations would make tourism offer more attractive, efficient, inclusive, and economically, socially, and also environmentally sustainable than its predecessor (UNWTO, 2018). It has also facilitated improvement and rethinking of processes, intending to tackling challenges such as seasonality and overcrowding, and evolving smarter destinations.

Digitalization has a positive ecological impression and can yet have a greater one, with innovations in manufacturing, smart assets, and competent use of resources contributing to a more maintainable industry footprint. Some significant impacts on the sector as a whole are the development of smart travel assistance, smart destinations, and a new wave of career profiles.

During the adaptation of ICT, especially in e-tourism, Tourism distribution structure has been changed, the adoption of new information technologies provides SME (Small & Medium Enterprise) travel agents with opportunities for reintermediation and the retail. Also, there have been studies showing the benefits of technology in improving cash flow, increase productivity, and promote greater competitiveness through reaching new customers not just walk-ins but expanding business globally (Abou-Shouk et al., 2012).

Previous research indicates that the diffusion of e-commerce would significantly enhance the survival of SME and that the extent and nature of its adoption are uneven across organizations depending on many factors. However, despite the mentioned benefits of e-tourism in the operation of the Travel Agencies, some SMEs are characterized by their reluctance to take risks and are cost conscious due to their limited access to capital resources (Abou-Shouk & Eraqui, 2015). Traditionally, travel agencies have always been intermediaries between consumers and suppliers (Claravall, 2014). With the rapid rise of the internet, this changed the complex distribution and communication channels, once the domain of the travel agent, became disentangled (Zare, 2013).

In Asia Pacific (APAC), travelers are using social media platforms to inform leisure travel decisions. Also, previous studies have shown that the social media websites such as Tripadvisor & Virtual Tourist are ranked second and third after travel intermediary websites in the case of online hotel information search among Hong Kong younger travelers (Sun et al., 2016).

In the Philippines, 87 percent of tourism establishments use Facebook as a channel to promote their business, followed by youtube, Instagram, and blogs at 28.6 percent, 19.5 percent and 9.1percent (Buted et al., 2014). Currently, 63 percent of the Philippines total populations are active in Internet and social media, 62 percent are mobile social users (Sunstar, 2018). Revenue in the Philippine eTravel market amounts to US\$2,170m in 2018, and this revenue is expected to show an annual growth rate o (CAGR 2018-2022) of 15.0 percent resulting in a market volume of US\$3,794m in 2022, and the market's largest segment is the Segment "Mobility Services" with a market volume of US\$1,358m in 2018 (www.statista.com, 2018). Furthermore, revenue in the Online

Travel Booking segment amounts to US\$812m in 2018 and revenue is expected to show an annual growth rate (CAGR 2018-2022) of 17.1 percent resulting in a market volume of US\$1,526m in 2022. The market's largest segment is the segment "Package Holiday" with a market volume of US\$376m in 2018.

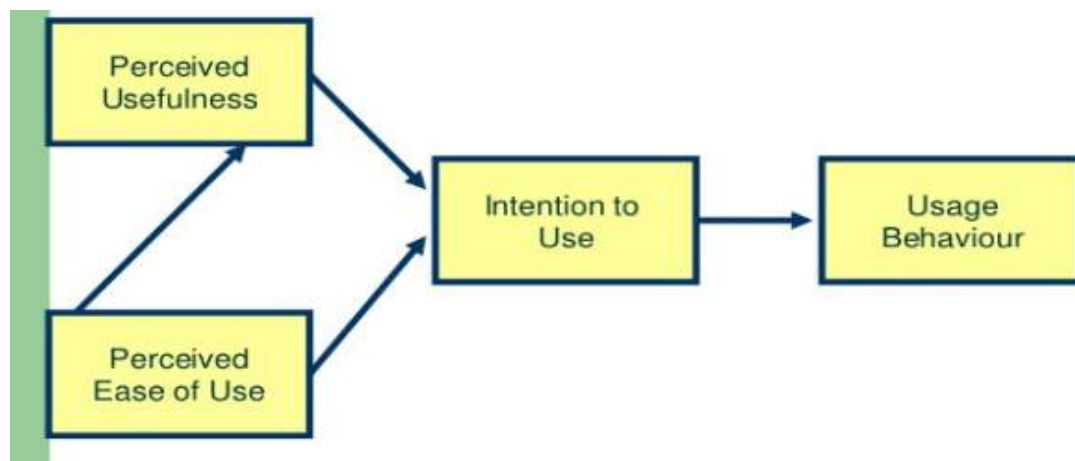
It is evident that E-Tourism plays a significant role in purchasing travel needs, especially in Mobility Services and Package Holiday. Traveling Public in the Philippines preferred to book their travel needs online with comfort in their own home using their computer and smartphones. However, the traditional travel agencies in the Philippines do not offer online transactions, but only showing their services through the website and social media. Online Transactions versus traditional brick and mortar agencies in the Philippines are still arising, not unless if the Travel Agencies would use the technology in their company.

Technology plays a vital role and will give benefits to SMEs. The researcher determined the Acceptance of Technology among Travel Agencies in Cebu City, Philippines, mainly the Accredited Travel Agencies. In determining the level of acceptance, the researcher Anchored the work of Davis et al., (1989) Technology Acceptance Model. This model is widely used in the determining adoption of Information Communication Technologies. Through determining the level of the Perceived Ease of Use (PEOU) and the Perceived Usefulness of technology (PU) and determined their relationship to the Intention to Use and adopt the technology. Despite the availability of the Internet, there are Travel Agencies who are not open in creating their own Social Media Platforms. The Reasons for Non-adoption is also presented and ranked accordingly.

1.2 Theoretical Framework

The purpose of this study is to determine the level of Perceived Usefulness (PU) and Perceived Ease of Use (PEU). Also, to identify if there is a significant relationship to the respondents Intention to Use (IU) or adopt the Technology, the selected model is Davis (1989) Technology Acceptance Model (TAM) to which the researcher believed that this would best answer the research objectives/sub-problems.

The following figure presents the framework of Davis (1989) as Technology Acceptance Model which is used in this study.



Technology Acceptance Model adopted from Davis, F. (1989). Perceived Usefulness, Perceived Ease of Use, and User Acceptance of Information Technology. Management Information Systems Research Center, University of Minnesota. September 1989 accessed on August 12, 2017.

TAM is a commonly referenced theoretical model for predicting the intention to use and acceptance of the information system by individuals. It proposes that perceived ease of use (PEOU) and perceived usefulness (PU) determine the attitude toward adoption of ICT. According to Lucas et al., (1999), Venkatesh et al., (2000), & Moon, (2000) this attitude, in turn, leads to an intention to use ICT and the eventual acceptance of the information

technology. According to Davis (1989), PU defines as the “degree to which a person believes that using a certain system would enhance his/her job performance,” and PEOU as the “degree to which a person believes that using a certain system would be free of effort.” Numerous scholarly articles show that PEOU and PU are potential motivators for users to accept, adapt, and use web service (Lucas et al., 1999; Venkatesh et al., 2000; Devaraj et al., 2002).

This model is the most influential theoretical approach in the study determinants related to the use of information technology, due to its robustness, flexibility and explanatory strength (Li & Bai, 2011). The TAM provides a link between the acceptance of the technology and user behavior. According to this model, the use of a technological product depends on the intention to use (IU), which depends in turn on the attitude towards it. This attitude is forming an assessment of the perceived ease of use (PEOU) and the perceived usefulness (PU) of a technology.

1.3 Objectives of the Study

The purpose of the study determines the relationship between perceived usefulness and ease of use among DOT accredited travel agencies in Cebu City in their intention to adopt the Information Communication Technology (ICT) in predicting the user behavior. Specifically, the study has the following research objectives: 1. Profile of the travel agencies in terms of 1.1 Type of Business Ownership; 1.2 Size of the Business; 1.3 Years of Operation; 1.4 Services Offered; 1.5 Online Presence, 2 The level of perceived usefulness, ease of use, and intention to adopt ICT, 3 Relationship among perceived usefulness, ease of use and intention to adopt ICT, 4 reasons for non-adoption of ICT and 5 propose strategies to encourage adoption of ICT by travel agencies.

2. Materials and Methods

2.1 Research Design

The study aimed to “Determine the Significant Relationships of Perceived Ease of Use (PEOU) & Perceived Usefulness (PU) in the Intention to use the Information Communication Technology among Department of Tourism Accredited Travel Agencies in Cebu City. The study used purposive sampling and research questionnaire.

The Research questionnaire has been categorized into three (3). First Part is the Business Profile. The Second Part is the Technology Acceptance adopted from Davis, (1989) as quoted by Dalbough, (2013). The Third part is the reasons for Non-ICT Adoption as adopted by Turban et al., (2008) as quoted by Buhalis, (2011).

2.2 Research Site

For the purpose of anonymity, the research environment shall be named Cebu City. There are 53 Department of Tourism (DOT) Accredited Travel & Tour Agencies and Operators.

2.3 Participants

The participants of the study are the Travel Agency Front Liners (Travel Agents) since they are in the position of maneuvering operations, particularly in communicating the tourists/clients. The researcher aimed to acquire the whole population. 100% of participants to be surveyed and interviewed. Thus, there were only 43 travel agencies that responded.

2.4 Instruments

The research Instrument was categorized into three (3) parts; the first part is the Business Profile containing the Type of Ownership, Business Size, Years of Operation, Services Offered, and Online Presence.

In this study, “NO RESPONSE” means none involvement, usage, application to the items in the questionnaire. The second part is a collaborative research questionnaire, the questions on the Technology Acceptance

particularly in the area of Perceived Ease of Use, Perceived Usefulness and Intention to Use are adopted from Davis, (1989), and on the other hand, the scaling was adapted from Dalbough, (2013). In Dalbough's research entitled "A Questionnaire Approach Based on the Technology Acceptance Model for Mobile Tracking on Patient Progress Applications. In the methodology and the materials, a Likert Scale was applied for each set of questionnaires. The Likert scale was designed to scrutinize how strongly subjects agree or disagree with statements on a five-point scale with the following anchors: (1) Strongly disagree, (2) Disagree, (3) Neutral, (4) Agree, (5) Strongly agree (Chomeya, 2010).

The Likert part of the instrument was pretested with 10 respondents prior to the conduct of the study, and reliability results gave a Cronbach Alpha value 0.95, which is interpreted as an instrument with very high reliability. Refer to the reliability testing results below.

Table 1: Reliability Statistics

Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
0.95	0.93	14.00

Source: Reliability Statistics

The third part of the instrument are the reasons for Non-Adoption of ICT, adopted from Turban et al., (2008) quoted by Buhalis, (2011) in the study entitled E-Tourism.

2.5 Data Collection and Analysis

In gathering the data, the researcher initially requested permission from the managers/owners of the accredited travel agencies in Cebu City. The survey questionnaires were administered personally after the agreed schedule/appointment. Then it was forwarded with a cover letter describing the study and indicating confidentiality of the information that may be given out to the participants. The researcher used statements that could easily be understood. An explicit instruction before answering the questionnaire was delivered and relayed to the participants for factual information. Percentage Distribution, Mean, Pearson Correlation was used to analyze the questionnaire administered to the participants.

3. Results and Discussions

3.1 Business Profile of the Travel Agencies in Cebu City

Table 2. Business Profile of the Travel Agencies in Cebu City

Business Profile		Frequency	Percent
Type of Ownership			
Corporation		32	78
Sole Proprietorship		8	19.5
Partnership		1	2.4
Business Size			
Small		23	56.1
Medium		18	43.9
Years of Operation			
Above 20 Years		14	34.1
1-5 Yrs.		12	29.3
11-15 Yrs.		8	19.5
16-20 Yrs.		6	14.6
6-10		1	2.4
Online Presence			
<i>Online Transactions</i>			
No Response		21	51.2
Travel Online		4	9.8
Booking.Com		3	7.3
BedsOnline		3	3.7
Tripadvisor		2	4.9
Agoda		2	4.9
Rezlive		2	4.9
Traveloka		1	2.4
iLink.ph		1	2.4
Asia Travel		1	2.4
Via.com		1	2.4
Travel Agency Mobile App			
No Response			
Mobile App in Android		26	63.4
Mobile App in IOS		12	29.3
		3	7.3
Online Advertisement			
Facebook		30	1.0
Instagram		7	2.0
Youtube		3	3.5
Own Website		3	3.5
		Frequency	Ranking
Products and Services			
Accommodation Reservation/Booking		39	1
Tour Package		38	2
Transportation Reservation/Booking		37	3
Attraction/Event Ticketing		35	4
Visa Assistance		32	5
Passport Assistance		30	6
Car Rentals		23	7
NSO Assistance		14	8
Shipment Parcel Delivery		5	9
Others (Immigration Services)		3	10

N= 41

Source: Survey Data

3.1.1 On the Type of Business Ownership

There are thirty-two (32) respondents under a corporation with 78% of the total population. It is followed by Sole Proprietorship with eight (8) respondents, which is equivalent to 19.5%. There is only One (1) respondent on Partnership with 2.4% in the total respondents of the study. In general, Accredited Travel Agencies mostly are Corporations.

3.1.2 On the Size of the Business

There are Twenty-Three (23) of the respondents are Small Enterprises (1-9 employees) which is 56.1% of the total respondents. It is followed by Medium-Sized Enterprise (10-49 Employees) that has Eighteen (18) respondents equivalent to 43.9%. In general, Small Enterprises is the most common business size of Travel Agencies in Cebu City.

3.1.3 On the Years of Operation

There are Fourteen (14) respondents that existed 20 years ago equivalent to 34.1%; then respondents existed 1-5 years with Twelve (12) respondents equivalent to 29.3%. 11-15 years in the Business with Eight (8) respondents equivalent to 19.5%. Right after, business operations from 16-20 years with Six (6) respondents equivalent to 14.6%. There is only One (1) respondent in the 6-19 years of operation equivalent to 2.4% in the population. In general, the Department of Tourism (DOT) accredited travel agencies in Cebu City are mostly long-standing of over 20 years and the new travel agency which has been in the business for the last 5 years.

3.1.4 On the Products & Services Offered

Accommodation and Reservation Booking has the highest Services Offered with Thirty-Nine (39) frequency and ranked as the 1st service offered among Travel Agencies in Cebu City. Based on the interview, clients will book their hotels, resorts, and pension houses through the help of the Travel Agency. Most of these clients are “outbound tourists” or Filipino residents traveling outside the country. One of the reasons that the respondent stated was “Traveling Outside the Country needs an “accommodation voucher” as one of the requirements for Bureau of Immigration. The respondent added that the clients believed that it is the Travel Agency who could look for the best deal for affordability and quality of the accommodation.

Tour Package service with Thirty-Eight (38) frequency equivalent to the 2nd rank; The tour package is composed of different travel components such as Transportation, Accommodation and Sight-seeing activities assembled into one. Based on the Interview, respondent stated that Tour Package(s) is a good source of revenue. As mentioned Tour package is composed of different travel components, each component has a specific cost. The Travel Agency would have a 15% standard mark up for the total cost of the package. The very reason why Travel agencies find Tour Package as one of the essential services in the business.

Transportation Reservation/Booking comes the 3rd rank with thirty-seven (37) frequency. Based on the Interview, traveling public would still book their transportation needs such as “Airline Tickets, Ship & Fast-Boat Tickets, respondent added that clients do not have credit cards to pay Airline Tickets and clients find the Sea Transportation Ticketing Office (Sea Port Office) far.

Attraction/Event Ticketing Services is 4th in the rank with thirty-five (35) frequency. Ticketing refers to the Admission Tickets on Concerts, Theme Parks and other Tourist Attractions. Based on the interview client would still buy a “Ticket alone” with no additional travel components. Especially when the clients booked their Transportation Tickets already either online or from another travel agency.

Visa Assistance services are on the 5th ranked with Thirty-Two (32) frequency. Based on the Interview, there are Online Platforms for Visa Applications such as “Taiwan Visa” and South Korea. However, Travel Agencies are a partner with Embassy; this means that the Approval is much probable. Meaning, clients still opt to use the service of a Travel Agency than doing it on their own.

Passport Assistance is ranked 6th with Thirty (30) frequency, based on the interview with the respondents, passport assistance is not useful in the business operation because of its Online Schedule System run by the Department of Foreign Affairs (DFA). In the second subsection, it is the “Small-Sized Enterprises who dominates the number of population. Based on the interview Passport Online System is one of the reasons that a TMC do not need an additional employee. In the advent of DFA Online System, TMC has a staff who facilitates the transaction of the clients who availed the passport assistance service. Today, a passport staff or a courier is no longer present in TMC organizations.

Car Rentals is on the 7th rank with Twenty-Three (23) frequency, based on the interview Car Rental is no longer a potential service in the business as there are (Grab Cars) and (Uber) a type of Car Rental Application using the Mobile Telephony, that’s the reason for a low frequency.

National Statistics Office (NSO) Authentic Birth Certificate process ranked 8th with Fourteen (14) common answer from the respondents. NSO has also its own Online Presence wherein a client will fill the details in the Social Media Platform this is easier and convenient to the customers than going to a Travel Agency and the NSO Office, one of the reasons to why it has a low frequency.

Shipment/Parcel Delivery Assistance is on the 9th ranked, with only Five (5) respondents, this kind of service is tapping with Logistics Companies such as LBC, JRS, FEDEX and 2GO which is not a practiced by some travel agencies.

The last rank, which is the 10th rank is "Others" composed of Immigration Assistance and Cruise, with only three (3) responses. Immigration assistance means that travel agencies will cater the "full immigration requirements" of a client such as VISA, Transportation & Accommodation Voucher, Itinerary, and even Travel Orders for "Educational Tours." Based on the Interview, the respondent stated that this service is stressful, and travel agents are not prepared for it. Most notably for filing documents for Commission on Higher Education (CHED) Memorandum of Agreement 26 Series of 2015 for the "Policies, Guidelines and Procedures of International Educational Trips (IET) for Undergrad and Graduate students Cruise is also an expensive service because of the client needs International requirements based on the policies of the visited territories or destinations. Based on the Interview, with the respondent offering Cruise Services. Despite the hustle, there is still a considerable profit, which makes them continue offering the service.

3.1.5 Online Presence

3.1.5.1 Online Transactions

Online transactions are also referred to Virtual Organizations as internet-based travel agencies who provide information and booking services to travelers (Kayani et al., 2015). No Response has the highest frequency with Twenty-One (21) responds equivalent to 51.2%. This means that over half of the respondent's population does not engaged in Online Transactions. Using a third party such as Booking.com, and the like. First is TravelOnline.com with Four (4) responses, equivalent to 9.8%. Booking.com got Three (3) frequency as well as BedsOnline with percentage equivalent to 7.5% each. Tripadvisor, Agoda, and Rezlive have Two (2) frequency which is equivalent to 4.9%. Lastly Traveloka, iLink.Ph, AsiaTravel & Via.com has only One (1) frequency equivalent to 2.4% each.

In general, Majority of the Respondents does not practice or apply online transactions. However, 48.8 % of the total population is already using these social media platforms in their Business Operations.

3.1.5.2 On the Travel Agency's Mobile Application

In data presented, there is No response of mobile applications has the highest frequency of Twenty-Six (26) equivalent to 63.4%. Surprisingly, for Android Mobile applications, Twelve (12) common response equivalent to 29.3%. Based on the interview, the respondent stated that majority of the Filipinos are using Android Smartphones, the researcher validated it through Stat Counter Global Stats, (2018) stating that in the Philippines there is 82.78% of Android users and 16.16% for IOS the reason why there is only three (3) common response for Apple Operating System (IOS Smartphones) which is 7.3% of the total population.

In general, 63.4% of the respondents are not yet able to adopt mobile applications. *(Please check Table 14 for the Reasons of NonAdoption)*. However, there is a 36.6% of the respondents who are already present online.

3.1.5.3 On the Travel Agency Online Advertisement

Online advertisement of the respondents enables them to promote their business most specifically the products and services available for the traveling public. Data showed above, Facebook got the highest frequency of Thirty (30) and got the 1st ranked of the social network platforms. Followed by Instagram with Seven (7) common

response placed on the 2nd rank. Youtube and Own Website with Three (3) the same frequency response placed on the same rank 3.5.

In general, Facebook is widely used as a tool for online advertisement. According to Cox (2017), Facebook has Two (2) Billion users monthly, it is evident that travel agencies use Social Networks in expanding their product offerings.

3.2 On the Level of Perceived Usefulness, Ease of Use, and Intention to Use ICT of Travel Agencies

The table below presents the results in determining the level of Perceived Usefulness (PU), Perceived Ease of Use (PEOU) and the Intention to Use (IU) of Information Communication Technology on the Accredited Travel Agencies in Cebu City.

Table 3: Travel Agent's Perceived Usefulness of Technology (PU)

Perceived Usefulness of Technology	Mean	Std. Deviation	Interpretation
Enable me to accomplish the task more quickly	4.20	0.75	Very Useful
Increase my productivity	4.22	0.79	Very Useful
Enhance my effectiveness on the Job	4.32	0.76	Very Useful
Make it easier to do my job	4.24	0.73	Very Useful
I would find useful in my Job	4.27	0.78	Very Useful
Perceived Usefulness	4.25	0.69	Very Useful

Source: Survey Data

Table 3 showed the means and standard deviations of the perceptions of the respondents regarding the use of technology in their business. As reflected from the table, values of the means ranged between 4.20 and 4.32, which are all interpreted that the Technology is "Very Useful" These implied that DOT accredited travel agencies agreed that by the use of technology they can do or accomplish their task quickly, it increases their productivity, it enhances their effectiveness, and it makes their job easier. In general, the travel agencies perceived usefulness of technology averaged 4.25 with a standard deviation of 0.69. As a result of this, it is also generally interpreted as the agreement of these agencies on the implementation of technology in their work.

Table 4: Perceived Ease on the Use of Technology

	Mean	Std. Deviation	Interpretation
Learning to Operate ICT would easy for me	4.12	0.87	Somewhat Easy
I would find it easy to get ICT to do what I want to do	4.10	0.77	Somewhat Easy
My Interaction with ICT would be clearer and understandable	4.12	0.81	Somewhat Easy
I would find ICT to be flexible to interact with	4.17	0.83	Somewhat Easy
It would be easy for me to become skillful at using ICT	4.17	0.89	Somewhat Easy
I would find ICT easy to use	4.15	0.91	Somewhat Easy
Perceived Ease of Use	4.14	0.79	Somewhat Easy

Source: Survey Data

Table 4 showed the means and standard deviations of the perceptions of the respondents regarding the usefulness of ease of use in their business. As reflected from the table, values of the means ranged between 4.10 and 4.17, which are all interpreted the use of ICT is “Somewhat Easy.” These implied that DOT accredited travel agencies agreed that by the Ease of use in Technology. It is easy on learning ICT, find it easy to get ICT to do what they want to do. The interaction with ICT would be more transparent and understandable. They would find ICT to be flexible to interact. It would be easy for them to become skillful using ICT, and lastly, would find ICT easy to use.

In general, the travel agencies perceived ease of use of technology averaged 4.14 with a standard deviation of 0.79. As a result of this, it is also generally interpreted as the agreement of these agencies on the implementation of technology in their work.

Table 5: Intention to Use ICT

	Mean	Std. Deviation	Interpretation
I will probably use or continue using the technology In the business operations	3.95	0.77	Probably would use ICT
I intend to begin or continue using Technology in the workplace	4.78	0.47	Definitely would use ICT
I will frequently use technology in the future for sales and marketing	4.54	0.78	Definitely would use ICT
I will recommend others to use Technology in Business Operations	3.78	1.13	Probably would use ICT
Intention to Use	4.26	0.37	Probably would use ICT

Source: Survey Data

Table 5 presented the descriptive statistics for the intention to use of ICT by the respondents. Based on the figures shown above, the weighted average intention to use is 4.26 with a standard deviation of 0.37 which means that the respondents “Would probably use ICT” in the business. According to Berger et al (2006) that appealing presentations of business products and travel destinations, sophisticated visualization of tourism products, the consulting role of travel agents, the social interaction and information exchange between travelers, as well as the information richness of the Internet are key features for successful tourism e – business . It is the advantage of enterprises that can employ tourism managers who embrace new information technology and actively participate in the technology planning process to identify new users and manage their development.

B. On the Interrelationships Among Perceived Usefulness, Ease of Use, and Intention to Use ICT

The table below presents the Significant relationship of Perceived Ease of Use and Perceived Usefulness to the Intention to Use of Information Communication Technology.

Table 6: Relationship of Perceived Usefulness, Ease of Use and Intention to Use.

		Perceived Usefulness	Perceived Ease of Use	Intention to Use
Perceived Usefulness	Pearson Correlation	1	.747**	.003
	Sig. (2-tailed)		.000	.987
Perceived Ease of Use	Pearson Correlation	.747**	1	-.063
	Sig. (2-tailed)	.000		.694
Intention to Use	Pearson Correlation	.003	-.063	1
	Sig. (2-tailed)	.987	.694	

Source: Survey Data

Table 6 showed the interrelationships among perceived usefulness, perceived ease of use, and intention to use ICT among travel agencies who participated in this study. Note that there is no significant relationship between perceived usefulness and intention to use ICT ($r = 0.003$, $p > 0.05$) among travel agencies in Cebu City. In addition, there is also no significant relationship between perceived ease of use and intention to use ICT among the respondents. These results indicated that travel agencies had acknowledged the usefulness and ease of use of ICT in their operations. However, the employees may not be adept in the use of ICT such as the Internet and the like.

On the other hand, there is a high to a very high significant relationship between perceived usefulness and perceived ease of use of ICT among travel companies in Cebu ($r = 0.747$, $p < 0.000$). This means that travel agencies found it useful to employ ICT in their work because, for them, it makes their work easier.

C. On the Non-Adoption of ICT Among Travel Agencies in Cebu City

Table 7: Presents the Technological and Non-Technological Reasons for Non-Adoption of Information Communication Technology.

Non Technological Reasons for Non-Adoption	Frequency	Ranking
Online Fraud is Increasing	26	1
Security & Privacy Concerns deter customers from buying	22	2
People do not yet sufficient trust paperless, faceless transactions	20	3
Some customers like to feel and touch products. Also, customers are Resistant to the change from at a brick and mortar store than the virtual store	20	3
Lack of Trust in E-commerce and unknown sellers hinders buying	11	4
In many cases, the number of sellers and buyers that are needed for Profitable e-commerce operations are insufficient	8	5
Many legal and public policy issues, including taxation, have not yet been Resolved and or not clear.	6	6
National and International government regulations sometimes get in the way	4	7
It is difficult to measure some of the benefits of e-commerce, such as Online advertising.	4	7

Technological Reasons for Non-Adoption

Software development tools are still evolving	13	1
Internet Access is still expensive and inconvenient	10	2
The Telecommunications bandwidth is insufficient, especially For m-commerce	9	3
It is difficult to integrate the Internet and e-commerce with some Existing applications and databases.	9	3
Lack of Universal standards for quality, security and reliability	8	4
Special web servers are needed in addition to the networks servers, Which add to the cost of e-commerce	8	4
Order fulfillment of large-scale business to consumer (B2C)		
Requires special automated warehouses	6	5

Source: Survey Data

Table 7 presents the reasons for Non-adoption categorizes into Non Technological and Technological reasons. For Non-Technological Reasons, 1st on the rank is Online Fraud, which has Twenty-Six (26) multiple responses. 2nd is Security and privacy concerns deters costumers from buying with Twenty-Two (22) responses. 3rd rank as follows “People do not yet sufficient trust paperless, transactions, faceless transactions and “Resistant to the change from shopping at a brick and mortar store than the virtual store” has Twenty (20) responses respectively. On the 4th rank is “Lack of Trust in E-commerce and unknown sellers hinders buying” with Eleven (11) responses. The 5th rank is “In many cases, the number of sellers and buyers that are needed for profitable e-commerce operation is insufficient” with Eight (8) responses. On the 6th rank is “Many legal and public policy issues, including taxation, have not yet been resolved and or not clear” with Six (6) responses. The 7th rank as follows “National and International Government regulations sometimes get in the way” and It is difficult to measure some of the benefits of e-commerce, such as online advertising” that has Four (4) responses respectively.

On the other hand, Technological Reasons were ranked accordingly. 1st rank is “Software development tools are still evolving” with Thirteen (13) responses. 2nd rank is “Internet Accessibility is still expensive and inconvenient.” Ten (10) responses. 3rd rank as follows “Telecommunications bandwidth is insufficient, especially for M-Commerce” and “It is difficult to integrate Internet and e-commerce software with some existing applications and databases” both with Nine (9) responses. The 4th rank is as follows “ Lack of Universal standards for Quality, Security, & Reliability” and “Special Web Servers are needed in addition to the network's servers, which add to the cost of e-commerce” with Eight (8) responses respectively. The 5th rank is “Order Fulfillment or large-scale business to consumer (B2C) requires special automated warehouses” with Six (6) responses.

4. Conclusions

Information Communication Technology is indeed an essential platform for Small & Medium Tourism Enterprises. It enables SMTEs to promote business products and services using the Online Travel Agencies, Mobile App, and the use of Social Media such as Facebook, Instagram, and Youtube. The study concluded that travel agencies in Cebu City find the technology Ease to Use and useful in business operations. However, they may not use the technology because of non-technological reasons such as Online Fraud, Security and Privacy Concerns, People do not trust faceless transactions, and the customers are already used to the traditional way of transacting tourism products.

The study also concludes that the Online Travel Agencies, which is believed to be the threat of Traditional Travel Agencies, are actually Online Platforms that could sell the products assembled by the Traditional Travel Agencies. However, because of the contract agreement, and the complexity of the business operation, Travel Agency does not have time to transact with Online Travel Agencies.

5. Recommendations

From the findings and conclusion of the study, the following recommendations are offered for consideration:

The Small & Medium Tourism Enterprises (SMTEs) regardless of what type of business ownership should adopt Information Communication technology to benefit the business operation such as efficiently selling and advertising the products and services through Online Platforms via involvement and or partnering with Online Travel Agencies, and using of social networks such as Facebook, Instagram, and Twitter and also to create own website to be facilitated by the Travel Agents. The assigned travel agent should attend a training or workshop in Information Communication Technology.

Travel Agencies should partner with reputable Online Travel Agencies to widen the market and able to increase sales. As if the case that the business could not attend to the needs of Online Travel Agencies especially inquiries from the clients, the Travel Agency should employ a travel agent only focuses on the Online Transactions and updating social media platforms.

Travel Agencies should at least eliminate reluctance on the adoption of Information Communication Technology by considering the proposed strategies.

References

- Abou-Shouk, M. & Eraqi, M. (2015). Perceived barriers to e-commerce adoption in SMEs in developing countries: The case of Travel Agents in Egypt, *International Journal Services and Operations Management*, Vol. 21, No., 3. DOI: 10.1504/IJSOM.2015.069652
- Abou-Shouk, M., Lim, WM. & Megicks, P. (2013), Perceived Benefits and ECommerce Adoption by SME Travel Agents in Developing Countries, *Journal of Hospitality & Tourism Research*. DOI:10.1177/1096348012442544,
- Agrebi, S. & Jallais, J. (2015), Explain the Intention to us Smartphone for Mobile Shopping, Elsevier 2014. Retrieved From <https://ideas.repec.org/a/eee/joreco/v22y2015icp16-23.html>
- Almunawar, M.N. & Anshari, M. (2014), Applying Transaction cost economy to construct a strategy for Travel Agents in Facing Disintermediation threats. *Journal of Internet Commerce*. 13 (3-4), 211-232. Retrieved From <https://www.tandfonline.com/doi/abs/10.1080/15332861.2014.961331?journalCode=wico20>
- Anand, S., Gupta, S., Fatnani, S., V. and Jain, D. (2010), 'Semantic cloud for mobile technology,' *International Journal of Computer Applications*, Vol. 8, No. 12, pp.1-4. Retrieved from <http://citeseerx.ist.psu.edu/viewdoc/download?doi=10.1.1.206.3641&rep=rep1&type=pdf>
- Bandara, RI. & Silva, D.A.C. (2016), E-Tourism & Roles of Travel Agencies: A Case Study of Promoting Japanese Inbound Tourism In Sri Lanka, *SEUSL Journal of Marketing*, Volume 1, No, 1 ISSN 2513-3071. Retrieved from [http://www.seu.ac.lk/seusljp/publication/volume1/no1/Ehttp://www.seu.ac.lk/seusljp/publication/volume1/no1/E-tourism of travel agencies.pdf](http://www.seu.ac.lk/seusljp/publication/volume1/no1/Ehttp://www.seu.ac.lk/seusljp/publication/volume1/no1/E-tourism%20of%20travel%20agencies.pdf)
- Bethapudi, A. (2013), 'The Role of ICT in Tourism Industry,' *Journal of Applied Economics and Business*, vol. 1, no. 4, pp. 67-79. Retrieved From <http://www.aebjournal.org/articles/0104/010406.pdf>
- Buted, D., Gillespie, N., Conti, J., et al., (2014), Effects of Social Media in the Tourism Industry of Batangas Province. *Asia Pacific Journal of Multidisciplinary Research*, Vol. No. 3 Retrieved From <https://ejournals.ph/article.php?id=5787>
- Carr, C.T. & Hayes, R.A (2015), Social Media: Defining, Developing and Divining. *Atlantic Journal of Communication*, 23(1). Doi: 10.1080/15456870.2015.972282
- Condratov, I. (2013), E-Tourism: Concept and Evolution, *EcoForum Volume 2, Issue 1(2)*. Retrieved from <http://ecoforumjournal.ro/index.php/eco/article/download/25/20>.
- Dalbouh, H. (2013), A questionnaire based on the technology acceptance model for mobile tracking on patient progress applications. *Journal of computer science*, Volume 9, issue 6, pp 763-770. Retrieved From https://www.researchgate.net/publication/289327505_A_questionnaire_approach_based_on_the_technology_acceptance_model_for_mobile_tracking_on_patient_progress_applications
- Kassim, E.S., et. al., (2012), Information System Acceptance and User Satisfaction: The Mediating Role of Trust. *Procedia-Social and Behavioral Sciences*, Volume 57, 9 October 2012, pp 412-418 Retrieved from <https://www.sciencedirect.com/science/article/pii/S1877042812046678>

- Kayani, K., Mcgrath, M. & Larsen, P. (2015), Strategies Employed by Australian Bricks & Mortar Travel Agents to Compete with Virtual Travel Agents, *International Journal of Recent Technology & Engineering*. ISSN:2277-3878, Volume-3 Issue-6. Retrieved from [https://www.researchgate.net/profile/Dr_K_Kayani/publication/271706180_Strategies_Employed_by_Australian_Bricks_Mortar_Travel_Agents_to_Compete_with_Virtual_Travel_Agents/links/54d01d4a0cf29ca81100e0a9/Strategies-Employed-by-Australian-Bricks-Mortar-Travel-Agents-to-Compete-with-Virtual-Travel-Agents.pdf](https://www.researchgate.net/profile/Dr_K_Kayani/publication/271706180_Strategies_Employed_by_Australian_Bricks_Mortar_Travel_Agents_to_Compete_with_Virtual_Travel_Agents/links/54d01d4a0cf29ca81100e0a9/Strategies-Employed-by-Australian-Bricks-Mortar-Travel-Agents)to-Compete-with-Virtual-Travel-Agents.pdf
- Lange-Faria, W. & Elliot, S. (2015), Understanding the Role of Social Media in Destination Marketing, *Tourismos: An International Multidisciplinary Journal of Tourism*, Volume 7, Number 1, Spring-Summer 2012, pp. 193-211 UDC:338.48+640(050). Retrieved from http://www.chios.aegean.gr/tourism/VOLUME_7_No1_art10.pdf
- MacGregor, R. & Kartiwi, M. (2010), 'Perception of barriers to e-commerce adoption in SMEs in a developed and developing country: a comparison between Australia and Indonesia, *Journal of Electronic Commerce in Organizations*, Vol. 8, No. 1, pp.61-82. Retrieved From <https://pdfs.semanticscholar.org/ae45/e6d5cea1ad42961ae786b5b06984a4f0e3f6.pdf>
- Renny, & Guritno, S., Siringoringo, H. (2013), Perceived Usefulness, Ease of Use, and Attitude towards Online Shopping Usefulness Towards Online Airlines Ticket Purchase. *Procedia-Social and Behavioral Sciences*. Volume 81, 28 June 2013, Pp. 212-216. Retrieved from <https://www.sciencedirect.com/science/article/pii/S1877042813014821>
- Spasic, V., Njeus, A. & Pavlovic, D. (2014), Modern information technologies application in destination management companies, SINTEZA 2014; Impact of the Internet on Business activities in Serbia and Worldwide; *EBusiness in Tourism and Hospitality industry*, (pp.772-776). DOI:10.15308/SInteZa-2014-772-776
- Tajzadeh-Namin, A.(Aiden), (2013), Factors Affecting Domestic Internet User's E-Loyalty to Travel Agencies Websites, *Journal for Tourism and Hospitality*, Volume 2, Issue 3. Retrieved from <https://www.omicsonline.org/open-access/factors-affecting-domestic-internet-users-e-loyalty-to-travel-agencies-web-sites-2167-0269.1000116.pdf>internet-users-e-loyalty-to-travel-agencies-web-sites-2167-0269.1000116.pdf
- Toung Tran, VT., Nhu Phan, NV., Nguyen, TN., & Do, HH (2017), An Impact of Social Media and Online Travel Information Search in Vietnam, *Global Review of Research in Tourism, Hospitality & Leisure Management. An Online International Research Journal*, DOI:10.4172/2324.1000153.

How to Predict Financial Distress in the Wholesale Sector: Lesson from Indonesian Stock Exchange

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Abstract

Financial distress is a stage of decline in financial conditions experienced by a company before going bankrupt. This phenomenon in Indonesia in recent years since 2016 shows more and more companies are experiencing bankruptcy. The purpose of this study is to know what are the factors causing it using discriminant analysis. The population of this study is issuers in sub-sector wholesale listed on the Indonesia Stock Exchange 2010-2015 period. Results showed that all four variables those are leverage, activity, liquidity, and profitability have significance values and able to explain 72.42% of the variation distress and non-distress. The accuracy of the model is 96.8% on distinguishing companies that experience financial-distress with non-distress. Overall this research model is reliable and valid to be used for forecasting companies that will experience bankruptcy.

Keywords: Financial Distress, Discriminant Analysis

I. INTRODUCTION

I.1. Introduction and research rationale

Every company is established with a set of goals to be achieved. In general, companies have a goal to earn profits, increase sales, maximize share value, and improve shareholder welfare. A company is also expected to continue to grow and survive in the long term. So that it can provide sustainable economic value to its owners.

The ability of a company to be able to continue to compete is largely determined by the performance of the company itself. In general, the performance of a company is shown in the published financial statements. Companies that are unable to maintain their financial performance will slowly be evicted from their industries and potentially experience bankruptcy. So the company must continue to work to improve its financial performance to maintain its survival.

Bankruptcy is a problem that is often faced by a company. Bankruptcy experienced by companies harms not only internal parties but also external parties. According to Andriana & Rusli (2012) as for the parties who were harmed due to the bankruptcy of a company that is the parties that have an interest in the company such as investors, creditors, the government as the party who receives taxes and reduces unemployment. This makes bankruptcy

analysis important for all stakeholders and potential investors before deciding to invest in order to avoid losses. Therefore, the symptoms of a company's bankruptcy must be detected as early as possible, especially by management before it becomes late and difficult to control.

Financial distress is a condition where a company faces financial difficulties. Bankruptcy (*financial distress*) is an accumulation of mismanagement of the company to run its business operations in the long term in order to achieve its economic goals. In other words, bankruptcy does not occur suddenly. Rather, it begins with *financial distress warning* where companies experience financial difficulties in generating profits or earnings income, which continues to decline from year to year.

Harahap (2009) states that there are several signs that indicate a company that is experiencing *financial distress*, namely: a decrease in the number of dividends distributed, a decrease in profits continuously, closed/sold one or more subsidiaries, termination of employment on a large scale and prices in the market are constantly declining.

Whiteker (2000) further explains that there are several indications that a company that experiences *financial distress* is the termination of labor or loss of dividend payments and smaller cash flows than long-term debt or if for 2 years it experiences negative net operating profit and for more than 1 year does not pay dividends. Whereas Wahyujati (2000) in Nisita (2012) argues that a new company is said to experience *financial distress* when the company experiences *net income* negative for 3 years.

In general, *financial distress* can be caused by internal or external factors. Internal factors that can cause bankruptcy to include lack of knowledge and experience from management in managing *assets* and *liabilities* effectively. While external factors that can trigger bankruptcy include inflation, tax systems, law, and depression in foreign currencies.

According to Wruck (1990), *financial distress* is a situation in which operating cash flows are not sufficient to meet its current obligations, such as trade payables or interest costs. Furthermore, Platt and Platt (2002) add that *financial distress* is a step in decreasing financial conditions that occur before bankruptcy (liquidation). Whereas Brigham and Daves (2003) state that financial difficulties (*financial distress*) are caused by a series of improper decision-making errors and interconnected weaknesses that can contribute directly or indirectly to management and lack efforts to monitor the company's financial condition so that its useless in accordance with what is needed.

A total of 30 7-Eleven outlets were also closed at the beginning of 2017. The number of outlets closed increased from the previous year, which was around 20 outlets in 2016. Peak In June 2017, PT. Modern International Tbk (MDRN) as the holding company of 7-Eleven announced to close 7-Eleven outlets in Indonesia. This is because of its business entity, PT. Modern Sevel Indonesia (MSI) is unable to cover operating costs in Indonesia (www.detik.com).

The following is the profit and loss of data of PT. Modern International Tbk in 2010-2015.

Table 1: Profit - Loss of PT. Modern Internasional Tbk The year 2010 - 2015

Year	Profit / Loss
2010	Rp 41.976.947.256
2011	Rp56.715.758.740
2012	Rp.55.725.908.480
2013	Rp 50.145.687.551
2014	Rp 39.621.247.528
2015	- Rp 63.027.760.375

Source:idx.co.id

Based on table 1 above shows that PT. Modern International experienced a very significant decline in profits during the period of 2011-2015. Even in 2015 PT. Modern International suffered losses reaching Rp. 63.027.760.375.

PT. Modern International is one of 34 companies engaged in the sub-sector wholesale (durable and non-durable goods). During the period of 2010 - 2015, there were at least 6 companies (17.6%) in the sub-sectors wholesale (durable and non-durable goods) experiencing financial distress.

Previously, since 2010 there were at least 2 (two) companies delisting from the Indonesia Stock Exchange, namely PT. Dayaindo Resources Internasional (2013) and PT. Asia Natural Resources (2014). Most of the cases delisting occur indicated because the company in question experienced bankruptcy (financial distress) and only a few did mergers. The condition of financial distress repetitive attracts researchers to conduct research related to the phenomenon of financial distress in the sub-sector wholesale occurs on the Indonesia Stock Exchange.

Financial statements are tools that can be used by a prospective investor to get information about the financial position and results of operations that have been achieved by a company. Analysis of financial statements can provide an initial picture of the bankruptcy of a company. Financial statement analysis can be a very useful tool for management to evaluate business performance. Financial statement analysis can also be used by a prospective investor as a consideration in making investment decisions.

In the research that has been done before in the manufacturing industry, by Syaefudin (2016) it was noted that DER, CR, TATO, and ROA simultaneously had a significant effect in distinguishing the condition of financial distress of a company. Whereas Pahlefi (2017) who conducted research in the textile and garment sector stated that only variables Quick ratio had a significant effect in distinguishing company categories distress and non-distress. While DAR, TATO, and ROE have no significant effect on distinguishing company categories distress and non-distress.

Furthermore, Liani (2017), through her research in the mining sector, concluded that variables that have a significant effect in the discriminant function are CR, DAR, ROA, GPM, and PER. Whereas Ruslinawati (2017) who conducts research in the manufacturing sector states that only the variable partially Current ratio affects the financial distress. Whereas DER, Cash ratio, and Sales growth have no significant effect on financial distress.

The population of this study is the sub-sector wholesale (durable and non-durable goods) or also known as the big trade sector (manufactured & consumer goods) listed on the Indonesia Stock Exchange for the period 2010-2015. Unlike previous research. Previous research is more on the manufacturing, textile, and mining sectors. In research in these sectors, the causes of corporate bankruptcy are generally debt conditions. Are the main causes the same if in the sub-sector wholesale (durable and non-durable goods) as the sample chosen in this study.

This study chose the industry above because it wanted to reaffirm the notion that in the wholesale trade sector the most important thing that caused many companies to easily bankrupt was the mistake of managing liquidity that was over-liquid. What is such a guess is in accordance with the fact that this study was conducted? This industry was chosen because of its increasingly important position in the context of growth in consumption, investment, and the economy and employment in Indonesia. Moreover, it is linked to the government's desire to increase the number of small and medium enterprises (MSMEs), which are more in retail trade as well as the entrepreneurial spirit of entrepreneurs. Ignoring the problem of bankruptcy in the trade sector will have a negative impact on the economy and employment. This research is even more important because of its relation to the problems above.

This research is expected to contribute conceptually, especially regarding financial distress. Then provide input for companies, especially the sub-sectors wholesale (durable and non-durable goods) in making decisions to maintain the continuity of their business, which is related to preventive measures to avoid financial distress. And can be used as consideration in making decisions for investors before making an investment. While regulators and financial institutions provide information about any issues that need to support entrepreneurs in this sector and other related sectors.

Based on the description above, because there is a research gap between one study with another research, also want to confirm again and want to know how the application of this discriminant analysis in other sectors namely the trade sector, the authors are interested in conducting research with the title **"HOW TO PREDICT**

FINANCIAL DISTRESS IN THE WHOLESALE SECTOR: LESSON FROM INDONESIAN STOCK EXCHANGE”

I.2.Problem Formulation

Based on the background described earlier, the formulation of the problem for this study are:

- 1) How is the influence and ability of DER, TATO, CASH RATIO and ROA in distinguishing the condition of companies experiencing financial distress and non-distress in the wholesale sub-sector (durable and non-durable goods) on the Indonesia Stock Exchange in 2010-2015 ?.
- 2) How the ability of the discriminant function formed based on selected ratios (DER, TATO, CASH RATIO, and ROA) gives significant results in predicting companies that experience financial distress or non-distress in the wholesale sub-sector (durable and non-durable goods) on the Stock Exchange Indonesia in 2010-2015?

I.3.Research Objectives

Based on the problem of the increasing number of companies in the Wholesale sub-sector experiencing bankruptcy, this study wants to overcome this problem by finding the cause through a prediction model using discriminant analysis. Specifically, the purpose of this study is:

- 1) Want to test how the influence and ability of DER, TATO, CASH RATIO and ROA in distinguishing the condition of companies experiencing financial distress and non-distress in the wholesale sub-sector on the Indonesia Stock Exchange in 2010 - 2015.
- 2) Want to test the ability of the discriminant function formed based on selected ratios able to provide significant results in predicting companies experiencing financial distress or non-distress in the wholesale sub-sector (durable and non-durable goods) on the Indonesia Stock Exchange in 2010 - 2015.

II. LITERATURE REVIEW AND DEVELOPMENT OF HYPOTHESIS

II.1. The relationship between financial ratios and financial distress

Leverage ratio with financial distress.

The leverage ratio is a ratio that measures how far the company is financed by debt. This ratio is used to measure the company's ability to pay all its obligations, both long-term and short-term if the company is liquidated. The use of these funds will result in the company's obligation to repay the loan principal and interest.

The size of the company's debt must be balanced with a good level of revenue. If not, then this can potentially lead to financial distress. This has been proven in the research of Almilia and Kristijadi (2003), where leverage ratios are positively related to the condition of companies experiencing financial distress.

Activity ratio to financial distress.

Activity ratio is a ratio used to assess a company's ability to carry out daily activities or the company's ability to sell, collect receivables and utilize assets owned (Munawir, 2010).

The higher the asset turnover value of the company signifies the effectiveness of asset management in generating income. Conversely, the lower the company's asset turnover is an indication of the inefficient management of company assets. The low asset turnover illustrated through the activity ratio is also a negative signal for potential investors. Where this can be an indication of the company's poor performance.

This is evident from the results of a study by Simanjuntak et al. (2017) which states that the ratio of activity to indicator variables total assets turnover has a negative effect on the possibility of financial distress companies.

Liquidity ratio with financial distress.

According to Subramanyam (2010) and Kasmir (2010) liquidity is the company's ability to generate cash in the short term in order to fulfill its obligations, and that ability depends on cash flows, components of assets and current liabilities.

The research of Almilia and Kristijadi (2003) in the manufacturing industry with logistic regression notes that liquidity (with the indicator current ratio) has a positive influence on the conditions financial distress company's. Where the greater the ratio, the less likely the company experiences financial distress. But does this affect the trade sector ?. This research will confirm this.

Profitability ratio with financial distress.

According to Munawir (2010) and Kasmir (2010), profitability is a variable that shows the company's ability to generate profits in a certain period of time. Based on these definitions, it can be concluded that the higher the profit generated shows, the more efficient management of the company's assets. So that the possibility of companies experiencing financial distress will be smaller.

This is evidenced by research conducted by Liani (2017) and Syaefudin (2016), who note that the variable Return on assets has a significant effect in distinguishing companies that experience financial distress and non-distress.

II.2. Financial Distress

Financial distress is a situation where operating cash flow is not enough to fulfill its smooth obligations such as trade debt or interest costs (Wruck, 1990)

Platt and Platt (2002; 2006) define financial distress as a stage of decreasing financial conditions that occur before occurrence bankruptcy or liquidation. The condition of financial distress experienced by companies is illustrated by the inability of companies or unavailability of funds to pay their obligations that have matured.

Whitaker (1999) states that a company can be said to be in a state of financial distress or financial difficulties if the company has a net profit negative for several years.

Whereas Elloumi and Gueyie (2001) categorize a company experiencing financial distress if the company for two consecutive years has a negative net profit. In line with the opinion of Elloumi and Gueyie (2001), Almilia and Kristijadi (2003) state that companies that experience financial distress are companies that for several years experience net income operations negative and for more than one year did not pay dividends.

Brahmana (2007) states that financial distress can start from the difficulty of liquidation (short-term), which is financial distress the lightest to the statement of bankruptcy, which is financial distress the most severe.

Brigham and Daves (2003) explain that financial difficulties occur in a series of errors, inadequate decision making and interconnected weaknesses that can contribute directly or indirectly to management and lack of efforts to monitor the company's financial condition so that its use is not in accordance with what is needed.

Brahmana (2007) further adds that financial distress occurs because companies are unable to manage and maintain the stability of their company's financial performance which stems from the failure to promote their products which results in lower sales. So that with a decrease in income from at least sales, it allows the company to experience operating losses and net losses for the current year.

Furthermore, the ongoing losses will result in capital deficiencies due to a decrease in the value of the retained earnings used to make dividend payments to shareholders. So that the total equity as a whole will experience a deficiency.

If this continues to occur continuously, it does not rule out the possibility that someday the total liabilities of the company will exceed the total assets owned by the company. The conditions mentioned above associate a company experiencing financial difficulties (financial distress) which in the end if the company is not able to get out of the conditions described above, then the company will experience bankruptcy or bankruptcy. (Brahmana: 2007).

Fachrudin (2008) states that there are several definitions of financial difficulties according to the type, including the following:

a. Economic Failure

Economic failure is a condition where the company's income is not enough to cover the total cost, including the cost of capital. This business can continue its operations as long as the creditor is willing to accept a rate of return that is below the market.

b. Business Failure

Business failure is defined as a business that stops operations by reason of a loss.

c. Technical Insolvency

The company can be said to be in a technical insolvency condition if a company cannot fulfill its current liability when it is due. The inability to pay debts technically shows that the company is experiencing a temporary shortage of liquidity, where if given some time, it is likely that the company can pay the debt and interest. On the other hand, if technical insolvency is an early symptom of economic failure, this might be a sign of the first step towards bankruptcy.

d. Insolvency in Bankruptcy

Insolvency in bankruptcy can occur in a company if the book value of the company's debt exceeds the current asset market value. This condition can be considered more serious when compared to technical insolvency, because in general, this is a sign of economic failure, even leading to business liquidation. Companies that are experiencing a situation like this do not need to be involved in the demands of legal bankruptcy.

e. Bankruptcy Legal

Companies can be said to experience legal bankruptcy if the company officially submits a claim in accordance with applicable laws (Brigham and Gapenski: 1998).

Factors Causing Financial Distress

According to Damodaran (2002), the causes of financial distress from within the company are more due to micro factors. The factors from within the company are as follows:

a. Difficulties in cash flows

Occur when the receipt of company income from the results of operating activities is not enough to cover business expenses arising from the company's operating activities. In addition, cash flow difficulties can also be caused by management errors when managing the company's cash flow in paying company activities, which can worsen the company's financial condition.

b. The amount of debt

The policy of taking a company's debt to cover costs incurred as a result of the company's operations will create an obligation for the company to repay the debt in the future. When the bill is due, while the company does not have enough funds to pay off the bills, the likelihood that the creditor is doing is confiscating the company's assets to cover the lack of payment of the bill.

c. Losses in the company's operational activities for several years.

In this case, it is the operational loss of the company, which can cause negative cash flow in the company. This can occur because the operating burden is greater than the income received by the company.

However, even though a company can overcome the three problems mentioned above, the company may not necessarily be able to avoid financial distress. This is because there are still external factors which can cause financial distress.

According to Damodaran (2002), the external factors of the company are more macro, where the scope is broader. External factors can be in the form of government policies that can add to the business burden borne by the company, for example, increased tax rates can add to the burden of the company. In addition, there is still an increasing interest rate policy, which can cause an increase in interest expense borne by the company.

II.3. Discriminant Analysis

Discriminant analysis is a statistical analysis technique for classifying objects into a particular group based on their independent variables (Dillon and Goldstein: 1984). So discriminant analysis is a technique of analyzing data, where the dependent variable is categorical or qualitative data (ordinal or ratio), while the independent variable is quantitative data (interval or ratio).

A similar opinion is conveyed by Johnson and Wichern (1992) which states that discriminant analysis is a statistical technique used to classify an individual or observation into a class or group based on a set of variables.

Johnson and Wichern (1992) state that the purpose of the discriminant analysis is to describe the characteristics of observation of various populations that are known, both graphically and algebraically by forming a discriminant function. In other words, discriminant analysis is used to classify individuals into one of two or more groups.

Altman Z-Score

The study of predictions of financial distress using Multiple discriminant analysis was first pioneered by Altman (1968). The research was conducted with a sample of 66 companies, consisting of 33 bankrupt companies and 33 companies that did not go bankrupt in the manufacturing industry. Altman uses 22 financial ratios (liquidity, profitability, leverage, solvency, and performance) that are most likely to distinguish between companies that are bankrupt and not bankrupt.

Altman's research produced the first bankruptcy model using an index a score intended to predict a public company in the manufacturing sector. The equation of the Altman model is:

$$Z = 1.2X_1 + 1.4X_2 + 3.3X_3 + 0.6X_4 + 0.999X_5$$

Where:

Z = bankruptcy index

X1 = working capital / total assets

X2 = retained earnings / total assets

X3 = earnings before interest and taxes / total assets

X4 = market value of equity / book value of total debt

X5 = sales / total assets

The z value is the overall index of functions multiple discriminant analysis generated from the formed equation model. Altman explained that there are cut-off values for the value of Z, which can explain whether the company will experience bankruptcy or not in the future with the following conditions:

- If the value of $Z < 1.8$ then includes companies that are bankrupt.
- If the value is $1.8 < Z < 2.99$, then it includes the gray area (it cannot be determined whether the company is healthy or has a bankruptcy).
- If the value of $Z > 2.99$, this includes companies that are not bankrupt.

II.4. The Research Hypothesis

H1: DER, TATO, CASH RATIO, and ROA were able to distinguish the condition of companies experiencing financial distress and non-distress in the wholesale sub-sector (durable and non-durable goods).

H2: The discriminant function formed based on selected ratios (DER, TATO, CASH RATIO, and ROA) is able to provide significant results in predicting companies experiencing financial distress or non-distress in the wholesale sub-sector (durable and non-durable goods).

III. RESEARCH METHODS

III.1. Population and Sample

The population of this study is sub-sectors wholesale (durable and non-durable goods) listed on the Indonesia Stock Exchange for the period 2010-2015. The technique of selecting samples of this study using a non-probability sampling technique with the purposive sampling method. Purposive sampling is a technique of determining samples with certain considerations (Sugiyono: 2011).

The sampling criteria for this study are as follows:

1. Sub-sectors wholesale (durable and non-durable goods) listed on the Indonesia Stock Exchange in 2010-2015.
2. Have a complete financial report that has been audited and published.
3. Samples with distress company categories are companies that have net income negative for at least two consecutive years.
4. While the sample category of non-distress companies is a company that has a net income positive.

This study uses secondary data. Secondary data is data that has been processed by the relevant institution which is sourced from the financial statements of the related company that has been audited and published to the general public. The financial report data is obtained from the website of the Indonesia Stock Exchange through www.idx.co.id.

III.2. Definition of Operational Variables

The definition of operational variables is very important in research. This is intended to avoid misunderstandings or differences in perceptions regarding the data to be collected.

Dependent Variables

The dependent variable in this study is the financial condition of the sub-sectors wholesale listed on the Indonesia Stock Exchange for the period 2010-2015, the companies are grouped into two parts, namely:

- a. Categories Distress are companies that have a net income negative of at least two years in a row.
- b. The category non-distress is a company that has a positive net income.

Independent Variables

Leverage Ratio

The leverage ratio is a financial ratio that describes the amount of debt used by the company to fund its business operations compared to its own capital. In this study, researchers used the Debt to equity ratio (DER) as an indicator of the leverage ratio.

Activity Ratio

The activity ratio is a ratio that reflects the efficiency of the company in using assets. It has to run its operations. In this study, using the ratio of Total Assets Turnover (TATO) as an indicator of activity ratios.

Liquidity Ratio

An activity ratio is a ratio that describes a company's ability to pay its short-term obligations. In this study, using the Cash ratio as an indicator of liquidity ratios.

Profitability Ratio

Profitability ratios are ratios that describe a company's ability to generate profits. In this study, using return on assets as an indicator of profitability ratios.

III.3. Data Analysis

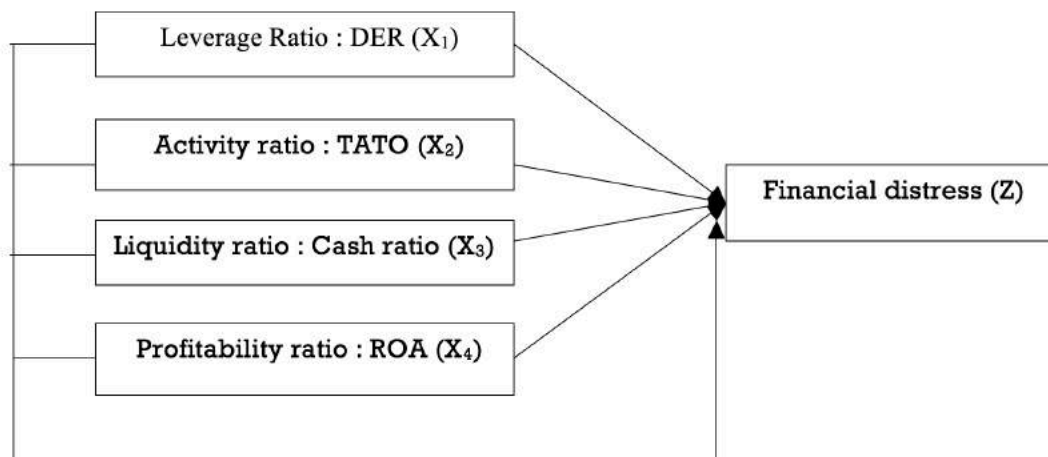
The analysis technique used in this study is discriminant analysis. Before the discriminant analysis is carried out, the assumption of discriminant analysis must first be carried out. The assumption of discriminant analysis consists of tests of normality, multicollinearity, and homogeneity. This analysis technique is used to determine the ability of DER (X_1), TATO (X_2), Cash ratio (X_3), ROA (X_4) in distinguishing companies that experience financial distress and non-distress (Y). The discriminant analysis model is as follows:

$$Z = a + W_1 X_1 + W_2 X_2 + W_3 X_3 + W_4 X_4$$

Where:

Z	= Discriminant value of the company
a	= intercept
W_1	= DER coefficient / weight
X_1	= DER
W_2	= TATO coefficient / weight
X_2	= TATO
W_3	= Cash ratio coefficient / weight
X_3	= Cash ratio
W_4	= ROA coefficient / weight
X_4	= ROA

Figure 1: Framework for Research Models



Source: Previous research

IV. RESULTS AND DISCUSSION

A TEST OF BASIC ASSUMPTIONS OF DISCRIMINANT ANALYSIS

Before conducting statistical analysis, the data to be processed first must meet the discriminant assumptions. According to Ghozali (2013), the assumptions that must be fulfilled in the discriminant analysis include:

1. **Normality Test:** this research data is distributed normally because of the Kolmogorov Smirnov value $0.200 > \alpha = 0.05$.
2. **Multicollinearity test:** there is no multicollinearity between independent variables because based on the table, coefficient multicollinearity test the value standard error of the independent variable is less than one, the value coefficient beta is also less than one. Next is the value Tolerance fourth of the independent variable, all > 0.01 . Likewise with the VIF value < 10 .

3. **Test Homogeneity:** based on the Box's M test results show the value of F is 5.840 with a significance of $0.000 < 0.05$ so that H_0 is rejected or the covariances of the two groups are different. This violates the assumption of discriminant analysis. However, the discriminant analysis remains robust and can be continued even though the homogeneity of variances requirements are not fulfilled provided that there is no outlier data. (Ghozali: 2013)

TESTING OF RESEARCH HYPOTHESIS

Table 2: Tests of Equality of Group Means

	Wilks' Lambda	F	df1	df2	Sig.
DER	.870	4.339	1	29	.046
TATO	.829	5.990	1	29	.021
CASH RATIO	.817	6.486	1	29	.016
ROA	.339	56.665	1	29	.000

Source: www.idx.co.id; data processed.

The test results of the test of equality of group mean in Table 2 above shows that the four variables have a significant value of < 0.05 . So that it can be concluded that the four variables, namely DER, TATO, CASH RATIO, and ROA each have a significant effect in differentiating or classifying the conditions of companies that experience financial distress and non-distress. This test is to test hypothesis 1 (one) in this study. The results of this test are consistent with the hypotheses. So that this financial ratio can be used as a discriminator variable in the discriminant function, which will be proposed as a prediction model.

Table 3: Eigenvalues

Function	Eigenvalue%	of Variance	Cumulative%	Canonical Correlation
1	2,636 ^a	100.0	100.0	.851

a. First canon discriminatory functions were used in the analysis.

Source: www.idx.co.id; data processed .

Table 3 shows the value of the canonical correlation in table Eigenvalues is 0.851. These results indicate a fairly high closeness between discriminant scores with the group (financial distress and non-distress). If the value is squared then square canonical correlation $(0.851^2) = 0.7242$. This means that this study produces a discriminant model where 72.4% of the variation between groups of companies that experience financial distress and non-distress can be explained by the variable discriminant ratio DER, TATO, CASH RATIO, and ROA. It can also be explained that the independent variable is able to explain variations of the dependent variable (distress and non-distress) of 72.4%.

Table 4: Wilks 'Lambda

Test of Function (s)	Wilks' Lambda	Chi square	df	Sig.
1	.275	34.854	4	.000

Source: www.idx.co.id; data processed.

The test results in table 4, Wilks' lambda show a value of 0.275 with a significance of 0,000. So it can be concluded that there are significant differences in the discriminant score average value between the two groups due to the influence of the four independent variables. In other words, the variable DER, TATO, CASH RATIO, and ROA simultaneously influence the discriminant function that is formed. This shows that **the discriminant function** formed from the four discriminator variables above is statistically significant. This test is to test hypothesis 2 (two) in this study. The results of this test are consistent with the hypotheses.

Table 5: Standardized Canonical Discriminant Function Coefficients

	Function 1
DER	.447
TATO	-.135
CASH RATIO	.552
ROA-	-.808

Source: www.idx.co.id; data processed .

Based on Table 5 the Standardized Canonical Discriminant Function Coefficients above, it can be seen that the independent variable (discriminator) has the largest contribution as discriminating power between groups of companies that experience financial distress and non-distress. Relatively, the discriminator who has the biggest "standardized coefficient" is the most decisive variable and influences the grouping (financial distress or non-distress). In the most influential research is CASH RATIO, DER, TATO, then ROA.

Table 6: Canonical Discriminant Function Coefficients

	Function 1
DER	.240
TATO	-.145
CASH RATIO	.225
ROA	-.267
(Constant)	-.042

Unstandardized coefficients

Source: www.idx.co.id; data processed .

Based on Table 6 above, the method simultaneous estimation produces the discriminant function as follows:

$$Z = -0.042 + 0.240 \text{ DER} - 0.145 \text{ TATO} + 0.225 \text{ Cash ratio} - 0.267 \text{ ROA}$$

The Cutt off value is 2.436, which is obtained from the Centroid Function at group value obtained through SPSS. This score can be used as a cut off to predict in the future whether certain respondents will enter a group of Financial distress or non-distress based on scores obtained through the discriminant function. If the value of Z Score is ≥ 2.436 , then the company is included in the category of company distress while < 2.436 , the company is included in the category of companies non-distress.

Table 7: Classification Results for

		FINANCIAL CONDITIONS	Predicted Group Membership		
			DISTRESS	NON DISTRESS	Total
Original	Count	DISTRESS	5	1	6
		NON DISTRESS	0	25	25
	%	DISTRESS	83.3	16.7	100.0
		NON DISTRESS	.0	100.0	100.0
Cross- validated	Count	DISTRESS	5	1	6
		NON DISTRESS	0	25	25
	%	DISTRESS	83.3	16.7	100.0
		NON DISTRESS	.0	100.0	100.0

- 96.8% of original correctly classified grouped cases.
- Cross-validation is only done for those cases in the analysis. In cross-validation, each case functions are from all cases other than those cases.
- 96.8% of cross-validated correctly classified grouped cases.

Source: www.idx.co.id; data processed

Based on the value cut-off calculated, Table 7 shows the accuracy of the classification of the determinant function formed is 96.8%. Where there is one company that experiences a classification error. The company was originally categorized as company distress, but in the validation test it turned out to be in the category non-distress. Because the accuracy rate is high above 50%, the discriminant model above can be used to predict in the future, whether a particular company will experience financial distress or non-distress.

The accuracy of Statistics:

To test whether statistically, the classification using the discriminant function above is accurate or not, then Press'Q Statistic is used as follows:

$$\text{Press's } Q = [N - (nK)]^2 / N (K-1)$$

Where N = size total sample = 31

n = number of cases diklassifikasikan precisely = 30,

K = number of groups = 2

Therefore this research has a discriminant function value Press's Q = $[31 - (30 \times 2)]^2 / 31 (2-1) = 27.12$. At $\alpha = 0.05$ and dof = 1, the value of tables = 3.84. This result shows that the discriminant function obtained in this study is statistically accurate. These results support the level of classification above, which states a high level of accuracy of 96.8%.

Evaluation of the Research Discriminant Function Model.

This study produces the discriminant function as follows:

$$Z = - 0.042 + 0.240 \text{ DER} - 0.145 \text{ TATO} + 0.225 \text{ Cash ratio} - 0.267 \text{ ROA}$$

So before it is used as a model to predict financial distress problems in the future, the above model needs to be evaluated from several aspects shows the model above is good or not.

- The test results in table 2 Tests of Equality of Group Means, the four variables DER, TATO, Cash ratio, and ROA proved to have an effect on the Z-score. Hypothesis 1 is acceptable and proven.
- The test results in table 4, Wilks' lambda show a value of 0.275 with a significance of 0,000. So that it can be concluded that the variables hypothesis DER, TATO, Cash ratio, and ROA simultaneously influence the discriminant function formed. The second hypothesis has proven. The discriminant function of this study is significant.

- 3) Table 3 shows that the value of the Canonical correlation in the tables Eigenvalues is 0.851. Then the Canonical Correlation Square (0.851^2) = 0.7242. This means that the independent variables in this study, namely DER, TATO, Cash ratio, and ROA are able to explain the variation of the dependent variable (distress and non-distress) which is quite large, namely 72.4%.
- 4) Table 6 shows that the discriminant function formed has a high level of accuracy of 96.8%. Statistically using Press's Q statistics, the function proved to be accurate.

The conclusion of the evaluation of the discriminant function model formed in this study is that the model is quite good, satisfying, and has accurate predictive abilities. Therefore the model can be used to predict and explain the events or phenomena of this research and their discussion.

DISCUSSION

Leverage Ratio

In hypothesis 1 (one) this study states that the variable Debt to Equity (DER) thought to be able to distinguish or group the conditions of companies experiencing financial distress and non-distress in the sub-sector wholesale (durable and non-durable goods) listed in Indonesia Stock Exchange 2010-2015.

Based on the results of the test of equality of group means it turns out that the variable Debt to equity has a significance value of 0.046 or < 0.05 . The results of the study are in line with the research hypothesis and in line with the research conducted by Syaefudin (2016).

The DER ratio measures the extent to which a company is financed by debt. The higher the DER, the greater the composition of total debt (short term and long term) compared to total equity. So that the impact of the greater burden of the company on external parties (creditors). This is because the greater the interest expense that must be paid by the company. Increasing the burden on creditors can reduce the number of profits received by the company.

The greater the DER ratio of the company will make the Z-Score obtained through the equation formed to be greater than 2.436 (cut-off). So that most likely, the company will experience financial distress. The relationship between DER and Z-score (distress) is expected to be positive.

The results of this study are not only in accordance with the research hypothesis and the expected relationship above but also theoretically and logically (Damodaran, 2002; Altman, 1968)). So in the sub-sector industry wholesale (durable and non-durable goods), also known as the large trade sector (manufactured goods & consumer goods), debt is the reason why companies experience bankruptcy.

Activity Ratios

Hypothesis 1 (one) besides DER, also states that the variable Total Assets Turnover (TATO) is able to distinguish the condition of companies that will experience financial distress and non-distress in the sub-sector wholesale (durable and non-durable goods) on the Indonesia Stock Exchange.

Based on the results of the Test of equality of group means, the variable total assets turnover has a significance value of 0.021 or < 0.05 . This shows that the TATO variable has a significant effect, and the coefficient has a negative sign in distinguishing companies that experience financial distress and non-distress.

The results of this study are not in accordance with the research conducted by Pahlefi (2017) and Syaefudin (2016) which states that the variable total turnover effect does not have a significant effect in distinguishing companies that experience financial distress and non-distress. The differences in results occur because the trade companies (wholesale) that are the object of this research have different characteristics from the manufacturing companies that are the object of their research. Where the large trading company (wholesale) only sell goods from suppliers to the buyer (retailer). Because the coefficient is negative, the greater the TATO (sales), the higher the profit and the Z-score of the equation is getting smaller. It means that the less likely the company experiences financial distress, or the company is getting healthier (non-distress) While manufacturing companies focus more on the

activity of processing raw materials into finished products, not on sales. As a result, if TATO is chosen as a discriminator variable, then the effect on Z- the score is influential, but statistically, the effect is not significant. This study proves that different industries that are the object of research also differ in variables and indicators that influence research problems (Kisman, 2017).

But the results of this study are in accordance with existing theories (Damodaran, 2002; Altman, 1968), the research hypothesis and in line with the research of Simanjuntak et al. (2017) in the transportation sector which states that the variable total assets turnover affects companies experiencing financial distress.

Liquidity Ratio

Hypothesis 1 (one) also states that the variable cash ratio is able to distinguish the condition of companies that will experience financial distress and non-distress in the sub-sectors wholesale (durable and non-durable goods) on the Indonesia Stock Exchange.

Based on the results of the test of equality of group means, the variable cash ratio has a significance value of 0.016 or < 0.05 . This shows that the variable cash ratio has a significant effect in distinguishing companies that experience financial distress and non-distress.

The results of this study are in line with the research hypothesis and theory (Damodaran, 2002; Altman, 1968) but are not in line with the research conducted by Ruslinawati (2017) in the manufacturing sector which states that the variable Cash ratio does not significantly influence financial distress a company's.

Cash ratio is the most stringent and conservative liquidity ratio to the company's ability to repay short-term debt and liabilities when compared to other liquidity ratios. This is because the cash ratio only calculates the most short-term assets and current assets liquid and the easiest and fastest way to use it to pay off its short-term debts.

Cash ratio that is too high (over liquid) can indicate the use of assets that are not optimal or unproductive because the company holds too much cash in its balance sheet. As a result, it will reduce the company's ability to generate profits. Even it will cause large losses and bankruptcy if this condition lasts two consecutive years or more. The results of this study are not only positive coefficients, but when tested also significant. In accordance with the hypothesis. Where the larger the cash ratio company's, will make the Z-Score obtained through the equation formed becomes greater than 2.436. So that the company will be included in the category of distress. So this study provides evidence that over liquid conditions are the cause of companies in the research sector to become bankrupt.

Profitability Ratio

In this study, hypothesis 1 (one) also states that the variable Return on Asset (ROA) can distinguish the condition of companies financial distress and non-distress in the sub-sectors wholesale (durable and non-durable goods) on the Indonesia Stock Exchange.

Based on the results of the test of equality of group means, the variable Return on Asset has a significance value of 0.000 or < 0.05 . These results indicate the ROA variable has a significant effect in distinguishing companies that experience financial distress and non-distress.

The results of this study are in accordance with the theory (Damodaran, 2002; Altman, 1968), the research hypothesis (hypothesis 1) and in line with research conducted by Liani (2017) and Syaefudin (2016) which states that the variable Return on assets has a significant effect in distinguishing or grouping companies that experience financial distress and non-distress.

High return on assets shows companies are able to use assets owned to generate profits. So that the higher the value of ROA shows the more effective management of company assets. Conversely, the lower the value of ROA indicates inefficient management of company assets. Where the lower the ROA indicates that, the greater the possibility of companies experiencing financial difficulties (financial distress).

This study notes that ROA has a significant and negative effect in distinguishing companies that experience financial distress and non-distress as expected. In this study, the greater the ROA ratio of the company, the healthier. Because the ROA coefficient in the discriminant function is negative, it will make the Z-Score obtained through the equation formed to be smaller than 2.436. So that the company will be included in the category non-distress. So this study reinforces the number of companies that are bankrupt in this sector, one of the causes is the ability of profit (ROA) that is negative (loss). Profitability decreases due to low TATO, high DER, and over liquid (high cash ratio). Which variable or discriminator has the most influence on the company's bankruptcy will be discussed in the following section below.

Most Influential Discriminator.

Based on table 5 of the Standardized Canonical Discriminant Function Coefficients, during this research period 2010-2015, the variables that most influence the possibility of companies will experience financial distress or non-distress in the sub-sector wholesale (durable and non-durable goods) also known as large trade sector (production & consumer goods) namely liquidity (Cash ratio), Leverage (DER), Activity (TATO) then profitability (ROA). Cash ratio has the most important influence because the object of this research is the large trade sector (wholesale). If the cash ratio is too high, it means that the company's TATO (sales turnover) is low and profitability (ROA) decreases. As a result, the company will lose. Losses will be greater if the company's debt is high.

V. MANAGERIAL IMPLICATIONS FROM RESEARCH RESULTS

The following section will briefly discuss the future implications of the results of this study on stakeholders:

- 1) To obtain a discriminant function that has a good Goodness of Fit, it is recommended that in the selection of discriminator variables pay attention to previous research and the industry. Each industry has a unique variable as a cause. This effort was made in order to obtain a significant and logical cause of bankruptcy variables.
- 2) Every company that will bankrupt does not occur suddenly but is marked by signs of bankruptcy. In the sub-sector wholesale (durable and non-durable goods), also known as the large trade sector (manufactured goods & consumer goods), it can be seen from the Cash ratio indicator which is greater than the normal demand. TATO is getting down, and this can be seen in the sales trend, which is continuously decreasing. Debts are increasing for purposes that are not clear (reasonable).
- 3) For investors, if you invest in stocks or bonds, pay attention to the signs described above (no. 2).
- 4) For practitioners, not always use the Altman model. Because in fact, this research has explained that the Altman model is only suitable for manufacturing industries in America. While in Indonesia or other developing countries, a discriminant function can be obtained by forming or arranging according to the sample at the place where the research was conducted. So that the function formed has high accuracy and is significant statistically.
- 5) For regulators, reform in this large trade sector is by making regulations and legal certainty. So that SMEs do not need to hold cash in excessive amounts beyond necessity. Give a climate that is conducive to increasing sales and does not need to be in debt beyond ability.

VI. CONCLUSION

Based on the results of statistical tests obtained after data collection, data processing, hypothesis testing, and analysis and discussion related to the research hypothesis, the researcher draws the conclusions as follows:

1. The variable DER, TATO, Cash ratio, and ROA can distinguish the condition of companies experiencing financial distress and non-distress in the sub-sectors wholesale (durable and non-durable goods) on the Indonesia Stock Exchange in 2010 - 2015. Hypothesis 1 is proven
Based on the table Canonical discriminant function coefficient shows that the discriminant function equation is formed, namely: $Z = -0.042 + 0.240DER - 0.145TATO + 0.225Cash\ ratio - 0.267ROA$.
2. Discriminant functions formed based on selected ratios (DER, TATO, CASH RATIO, and ROA) are able to provide significant results in predicting companies that experience financial distress or non-distress on the sub- wholesale sector (durable and non-durable goods). Hypothesis 2 is proven.

References

- Almilia, L.S. dan Kristijadi.2003. *Analisis Rasio keuangan untuk Memprediksi Kondisi Financial Distres Perusahaan Manufaktur yang Tedaftar di Bursa Efek Indonesia*. Journal of Intermediate Accounting and Adinistration, Vol.7,No.2.
- Altman, E 1968. *Financial Ratios Discriminant Analysis and the Prediction of Corporate Bankruptcy*. The Journals of Finance, Vol.XXIII, September, 589-609.
- Brahmana. 2007. *Identifying Financial Distress Condition in Indonesia Manufacture Industry*. Birmingham Business School, University of Birmingham United Kingdom:
- Brigham, Eugene F., and Daves, Philip R., 2004. *Intermediate Financial Management, 8 the Edition*. Thomson, South-Western.
- Brigham, E. F., and Gapenski, L. C. (1998). *Financial Management Theory and Practice*. New Delhi. Atlantic Publishers and Distributors.
- Damodaran, Aswath, 2002. *Investment Valuation, second edition*. University Edition, John Wiley & Sons, Inc., New York, USA.
- Dillon, W. R., and M. Goldstein .1984. *Multivariate Analysis–Methods and Applications*. Wiley, New York.
- Elloumi, F., Gueyie, J. P. (2001). *Financial Distress and Corporate Governance: An Empirical Analysis*. The International Journal of Business in Society, Vol 1: 15- 23.
- Fachrudin, Khaira Amalia. 2008. *Kesulitan Keuangan Perusahaan dan Personal*. Medan: USU Press
- Ghozali, Imam. 2013. "Analisis Multivariate dengan SPSS. Edisi ketujuh. Semarang : Badan Penerbit Universitas Diponegoro.
- Hanafi, M. dan Halim, A. (2009), *Analisis Laporan Keuangan*. Yogyakarta : UPP AMP YKPN
- Harahap, Sofyan Syafri. 2009. "Analisis Kritis Atas Laporan Keuangan". Jakarta: Raja Grafindo Persada
- Ikatan Akuntan Indonesia. 2014.PSAK 1: Penyajian Laporan Keuangan
- Johnson, R. A., and Wichern, D. W. 1992, *Applied Multivariate Analysis*, Third Edition, Prentice Hall Inc, New Jersey
- Kasmir.2010. *Analisis Laporan keuangan*. PT. Rajawali : Jakarta.
- Kieso, D. E., Weygandt, J. J., & Warfield, T. D (2011). *Intermediate Accounting Volume 1 IFRS Edition*. United States of America: Wiley.
- Kisman, Z. *Model For Overcoming Decline in Credit Growth (Case Study of Indonesia with Time Series Data 2012M1-2016M12)*. Journal of Internet Banking and Commerce.Vol.22, No. 3,2017.
- Liani, Novita.2017. *Analisis Rasio Keuangan untuk Memprediksi Kondisi Financial Distress Dengan Metode Diskriminan Pada Perusahaan Pertambangan Yang Terdaftar Di Bursa Efek Indonesia Tahun 2012-2015*. Fakultas Ekonomi, Jurusan Akuntansi, Universitas Trilogi .
- Munawir. 2010. *Analisa Laporan Keuangan, Edisi Keempat*. Cetakan Ketigabelas, Yogyakarta: Liberty.
- Nisita, Dwi Rahma.2012.*Pengaruh Penggunaan Utang Terhadap Agency Cost Pada Perusahaan Manufaktur Yang Mengalami Finacial Distress Dan Tidak Mengalmi Financial Distress*. Fakultas Ekonomi, Jurusan Akuntansi, Universitas Indonesia.
- Pahlefi, Reza.2017. *Analisis Diskriminan Terhadap Rasio Keuangan Dalam Memprediksi Financial Distress (Studi Empiris : Perusahaan Go Public Sub Sektor Textile Dan Garment Yang isting Di Bursa Efek Indonesia Periode 2011-2015*. Fakultas Ekonomi, Jurusan Akuntansi, Universitas Trilogi.
- Platt H.D. dan Platt M.B.2002.*Predicting Corporate Financial Distress: Reflections on Choice-Based Sample Bias*. Journal of Economics and Finance, Vol.26 N.2, Hal 184-199.
- Platt, H. D., Platt, M. B. (2006). *Understanding Differences Between Financial Distress and Bankruptcy*. Review of Applied Economics, Vol 2 No 2: 141-157.
- Platt, H. D., Platt, M. B. (2008). *Financial Distress Comparison Across Three Global Regions*. Journal of Risk and Financial Management, 1 (1): 129-162.
- Richard B. Whitaker.1999. "The Early Sage of Financial Distress." Journal of Economic and Finance. Vol. 23, No 2. p 122-133
- Riyanto, Bambang. 2008. *Dasar-Dasar Pembelanjaan Perusahaan*. Yogyakarta: Penerbit BPF.
- Ruslinawati, Hilda Ayu Devi (2017) *Pengaruh rasio keuangan terhadap financial distress pada perusahaan manufaktur yang listing di BEI 2011-2015*. Undergraduate thesis, Universitas Islam Negeri Maulana Malik Ibrahim.
- Sigit, R. (2008). *Pengaruh Rasio Likuiditas, Financial Leverage dan Arus Kas untuk Memprediksi Financial Distress pada Perusahaan Real Estate dan Property yang Terdaftar Di BEJ tahun 2004-2005*. UNS.
- Sugiyono. 2011. *Metode Penelitian Kuantitatif, Kualitatif dan R&D*. Bandung: Afabeta.
- Syaefudin, M.I.R.2016. *Analisis Rasio Keuangan untuk Memprediksi Kondisi Financial Distress Perusahaan Manufaktur yang Terdatar di Bursa Efek Indonesia*. Fakultas Ekonomi, Jurusan Manajemen, Universitas Trilogi .

- Simamora, Henry, 2002, *Akuntansi Manajemen*, Edisi Kedua, Cetakan Pertama, Salemba Empat, Jakarta.
- Simanjuntak, Christon dkk .2017. *Pengaruh Rasio Keuangan Terhadap Financial Distress (Studi Pada Perusahaan Transportasi Yang Terdaftar Di Bursa Efek Indonesia Periode 2011- 2015)*. Journal e-Proceeding of Management : Vol.4, No.2 Agustus 2017. Page 1580
- Subramanyam, KR dan John, J. Wild, 2010. *Analisis Laporan Keuangan, Buku Satu. Edisi Sepuluh*. Salemba Empat, Jakarta.
- Supardi dan Sri Mastuti. 2003. *Validitas Penggunaan Z-Score Altman Untuk Menilai Kebangkrutan Pada Perusahaan Perbankan Go Publik di Bursa Efek Jakarta*. Dalam Kompak No. 7. Januari-April, hal 10.
- Widarjo, Wahyu dan Setiawan, Doddy, (2009). *Pengaruh Rasio Keuangan terhadap Kondisi Financial Distress Perusahaan Otomotif. Jurnal Bisnis dan Akuntansi*, Vol.XI No.2, Agustus 2009, Hal 107-119
- Whitaker, R. B. (1999). *The Early Stages of Financial Distress*. Journal of Economics and Finance, 23: 123-133.
- Wruck, K. H. (1990). *Financial Distress, Reorganization, and Organizational Efficiency*. Journal of Financial Economics, 27, 419-444.

Roles in Public Space of Wives Who Left Behind International Migrant Husbands*

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Abstract

This article explores the roles, in the public space, of women who are left behind by international migration. The qualitative research was employed. Data collection process conducted in Sakon Nakhon Province with the 26 wives whose husbands migrated at least a year to work in other countries. The results showed that wives who left behind by international migration played major roles in village development activities and community merit making, after receiving their overseas remittance. These activities led them to become loan lenders and labour brokers. Their new positions provided more opportunities to be a politician at the local level.

Keywords: Wives' Role, Public space, Left behind

INTRODUCTION

International migration by Thai workers has been an ongoing phenomenon in Thai society, especially in the Northeast region. Despite the increase in the economic growth rate of industry and the service sector in Thailand, with the associated increased demands upon the domestic labor force, many people still expect to work abroad due to the higher income they can earn than from domestic works. International migration has become a favored way among workers, who are mostly married, male workers. According to a report from the National Statistics Office (2014), the percentage of married labourers was 60 percent of all Thai international workers. This percentage illustrates the issue of the wives of international migrants being left behind too.

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International migration by male workers, the husbands of the wives left behind, is a major condition that pushes the wives to take the major roles in household activities both domestic works, such as take care all members of the family and non-domestic works, such as participating in village meetings. When husbands migrate to work abroad, many household tasks are shifted to the wife's responsibility. Wives have to undertake household and community tasks in the absence of their husbands to maintain their household social status within the community while the community still has patriarchy system. Sometimes they have to contact agencies related to the husband's international migration in order to seek for information that their husbands need.

Therefore, it is interesting to understand how the international migrant's wives, as household representatives, undertake their roles in the public space. This paper argues the concept of gender role, particularly the division of household tasks by gender, and attempts to debate patriarchy in Thai value, that male more significance person and roles than women in public life. This paper tries to focus on the representation of wives' roles in public life after their husbands have migrated to work abroad. The implication of the research will be useful in an approach to policies for improving the potential of the wives who have been left behind.

RESEARCH OBJECTIVE

To investigate the roles in the public space of rural Thai women, whose husbands are working abroad.

LITERATURE REVIEW

This paper implements the concept of gender roles, and international migration in a theoretical framework. The details of each of the concepts implemented are as follows.

Gender roles: Gender role is a concept developed by theorists in the 20th Century. The concept focuses on the roles of male and female within the family. The approach of this analysis has been based on the Structural-Functionalism theory. (Nelson, 2006) Suggested that family members are able to live together because each person is assigned to undertake different family activities. When the family has children, the primary care of the children (through pregnancy and childbirth) and housekeeping tasks are undertaken by women (wife and mother). While the men, father or husband, are responsible for providing the safety of the family members and act as the breadwinner of the family. This is a nature-based division of labor within the family (Samutchak et al., 2017). The division of gender role is defined by sex, which represents male and female based on their bio-characteristics. Individuals, either male or female, have a designated reproductive function, and they have different personalities. However, the definition of sex from the socio-cultural view does not only look at sex by biological appearance but also it is socially constructed by the socio-cultural conditions which determine the appropriate behaviors of the male and female. In conclusion, it is evident that gender roles are designated to male and female based on their biological appearance and socio-cultural contexts in order to present their roles in line with the expectations of society.

Gender role is also explained by feminism theorists. The explanation has been delivered under the emergence of the patriarchal society. Gender roles are represented in social areas and are divided into 2 parts; 1) private area; which is generally within the household boundary. Most private areas are maintained by women who are responsible for household activities such as cooking, housekeeping, and also include biological reproductive activity and cultural reproductive activity such as parenting of children. The parenting process is an activity that occurs within the household or private area. Then there is 2) social area, or the public area, which represents socio-economic activity and political activity. These are activities where the male person plays a major role, for instance, working for income, and membership of organizations, participating in community activities or political activity from which women are excluded. These activities are tied to the biological appearance of the male, so it is noticed that the social area is the men's area, presenting their dominant power over women (Cooke & Gash, 2010).

Therefore, gender roles are determined by society. In each society, people are different, and gender roles can change depending on the socio-cultural contexts and the appropriation of the role taken. Moreover, gender roles

also relate to the opportunities that individual stake in order to access, use, and control resources, since they have rights, power, responsibility, and expectation, from society, in different objectives. Therefore, gender roles by social determination have a great impact on the status of male and female in such societies (Limanon, 1999; Alesina, Giuliano, and Nunn, 2013).

Considering public space in accordance with the gender role concept, public space means the community area that allows community members to participate in community activities, individually, or as a family representative. Moreover, women are able to play an equal role in political activities, as the men. There is an argument Thai society relies on masculinity. However, the current social context has been changed. The gender role is constructed by socio-cultural processes, and an individual's behaviors and actions are socialized by social institutions such as families, schools, media, etc. (Archawanichkul and Thongsima, 2005). In this study, the concept of gender role is applied to consider the gender role of women, whose husbands are working abroad, through the community activities and political activities that they participate in.

International migration: The Population Reference Bureau of Washington (2014) defines migration as the moving of population across a nation's boundary with an aim to find a new abode. Some scholars explain that migration means the moving of a great number of population from their original abodes to another place in order to perform an activity that yields remuneration, which is the main reason for such migration. International migration is one type of migration. It is the labor movement from one country to another country in order to conduct economic activity. Normally, the international principle determines that living in other places for one year is considered a migration. (Chantavanich et al., 1998). The neo-classic economists explained that individuals make a decision on migration for economic purposes. The crucial pull factors that attract migrants include higher wages and better job opportunities (Lee, 1996). Migration is the process that arises because of the need to upgrade economic status, and hence, it is principally from an under-developed area to a better-developed area. For most of the cases, migration is performed through a process of independent decision towards a better life of the migrant or the family (IOM, 2004).

In the sociological view, international migration has been linked to factors regarding social, culture, legal, and international politics. In addition, migrants generally travel to work in the destination country by way of social networks, or other channels that facilitate international migration.

International migration has socio-economic impacts upon the migrants themselves, to their households at the places of origin, and also upon the people left behind (Champaklay, 2013). Households that the migrant members frequently send remittances to would gain more acceptance from their neighbors and communities (Ayuwat, et al., 2018). In some cases, migrants are respected with gratitude, being good people that are responsible for taking care of the other household members in the origin area (Boonkwang, 2016). Moreover, households that receive remittances frequently and migrant who go to work legally would be happier than households without remittances (Chamrathirong, 2007; Ayuwat, et al., 2018). International work migration also impacts on changes in the women's role. Datta and Mishra (2011) suggested that when their husbands are working abroad, women have to shoulder the workload of household activity. They play more roles in agricultural tasks while taking care of their children at the same time. They spend more time working because they are responsible for multiple tasks. Some women have to work outside their community, for instance, working in a factory (Karymshakov and Sulaimanova, 2017). Therefore, they have to perform the roles of motherhood and fatherhood, at the same time (Perraudin, 2016).

It can be seen that international work migration, by their husbands, has caused the wives who are left behind to adopt roles in the public space in order to maintain their household's status in the community, and for their own livelihoods. This research views public space through the activities that the women participated in, being, local politics, community, and religious activities.

RESEARCH METHODOLOGY

This paper investigated the roles in the public space, of the wives whose husbands work abroad. A qualitative methodology was applied to the research design. There are 2 groups of key informants that include 1) the community leaders; who were the community headmen, members of The Sub-district Administrative Organization, a total of 10 persons. This informant group provided information regarding the recent situation of male worker's international migration and the general context of the households of wives whose husbands work abroad. Another group of key informants was 15 wives whose husbands had been working abroad for at least one year. Key informants were wives who lived in, either the nuclear household, or the extended household. In-depth interview was used with this group in order to explore the roles of the wives. The research area was Kho Tai Sub-district, Sawang Daendin District, in Sakon Nakhon Province, which is not the main province of the region. In-depth interview guideline and non-participatory observation were utilized to collect data, and triangulation was applied to crosscheck the data by multiple data sources (Photisita, 2009). Data analysis applied the content analysis method to analyze the roles in the public space of the wives whose husbands were working abroad.

RESEARCH RESULTS

The results consisted of 2 parts including 1) the background of the wives whose husbands were working abroad, and 2) the roles in the public space, of wives whose husbands were working abroad. The results are presented as follows.

1. Background of the wives whose husbands work abroad

The wives in this research were aged between 25-50 years old. Most of them finished elementary school while some of them got Bachelor degree level, so they presented different skills and knowledge on working, use of technology, and leadership. Their husbands had mostly worked abroad for between 1-10 years, in Asian destinations such as South Korea, Taiwan, Japan, Singapore, and Israel. The husbands worked in various type of jobs such as construction, agriculture, or industrial work, so they received different rates of income, and they sent remittances back to their households frequently but different patterns. The variance in amounts remitted was due to the various jobs they worked in. Women whose husbands were working abroad lived in both nuclear and extended households. The different types of household they lived in demonstrated different responsibilities in housing activity. In cases where the wives lived in extended households, they often had to look after their parents or their husband's parents. The wives had an average number of children around 1-2 children, and they also took care of the children and other household members at the same time. In addition, the wives conducted a variety of occupations that included, government jobs, business, employees at farms or factories, and as farmers. The differences in their occupations caused the women to have different potential for management and decision making.

2. Roles in the public space of wives whose husbands work abroad

According to the various backgrounds of the wives whose husbands were working abroad, they had a chance to participate in various activities in the public space. The activities they participated in consisted of political activity, community meeting activity, and merit-making activity. Details of each activity are as follows.

2.1. Politician at local level - The roles of wives in politics referred to those who got involved in political activity and were elected as representatives of the community. The results showed that some women were able to be elected as members of the Sub-district Administration Organization, a political organization at the local level, with most positions held by male members. The steps towards the wives participating in political activity started with them joining in community events or being members of local groups. Although it was another way to develop the community, participation in these activities allowed the women to play a role in the policy issuing and budget management of the organizations. The wives had the chance to be a member of local organizations, and they were proud to develop their own communities. Another reason for them to be elected was that they were locals who had lived in the community since childhood. This was the reason that the wives were confident of being chosen, by the other community members, to be their representatives (Mammen and Paxson, 2000). Moreover, having their husbands working abroad allowed the women to have full rights and freedom to make decisions in any activities

outside the household boundary. The women had more opportunities to play roles in the public space, and they were able to get more acceptances, from their parents and husbands, of a women's ability to participate in the public space. It was noted that women, firstly, had to create trust among their supporters, i.e., household members, relatives, or neighbors, before joining in political activity, in order to get acceptance from the community.

A secured economic status was another condition that encouraged the wives into the political space. When their neighbors in the community were in financial trouble, the women helped them by lending money. When the neighbors were happy with this, they would support the women to gain political roles. The income source that provided the women with the stability of their financial status was the remittance from their husbands. The wives managed the remittance for use on household expenditure. Some of the remittances were allocated for many purposes, such as savings, buying jewelry, tools for household activities, or buying land for agricultural activity. Once they were able to manage their income and had financial stability for their own households, they then helped their neighbors and participated in a community activity. This would give confidence to the wives in performing roles in the political space. These findings supported Ullah's study (2017) that suggested that women, whose husbands work abroad, have become powerful political activists because they had a chance to prove their ability in politics, within the public space.

It can be seen that the wives' s decision to participate in political activities relates to many conditions, both individual and external. The wives were confident to be representatives of the community due to the education they had received or the activities they participated in. They were free to make decisions and choose their own future.

2.2. Meetings with community: A space for representing social status- When husbands went to work abroad, the roles of their women in the community changed. Community activities such as meetings of the village committee and of the village fund once belonged to men because there was a traditional value that men could make important decisions better than women. Men have easier chances to get information and have access to resources, so men should be a better choice than women in attending the community meetings. When the men went to work abroad, the role of household representative shifted to the women or wives in attending the meetings and in decision making.

At the village meetings, women whose husbands were working abroad attended the meetings as the representatives of their households. They attended the meetings to find ways to develop the village and shared their opinions with other members. Women who had a good education normally gained acceptance from other members, since these women would apply information and technology to their ideas and present them to the meeting, clearly. These findings supported Datta and Mishra (2011), who found that when husbands migrated to work abroad, some women had found roles in the village committees. Some, who were confident and had leadership skills, became the president of the committee and participated in decision making in the community. Women in the village committee applied modern technology and communication tools to find ways to develop the community. Many women knew how to use modern communication tools since it was a way to get in touch with their husbands abroad. Participating in local organizations demonstrated the roles of women in the public area, and it gained the respect of others, towards the women. This was a way to secure their social status and empowered them to be confident, brave, and decisive in determining their future.

Although women took the role as a representative of a household that had international migrants, in some migrant households, the role in the public space still belonged to men, such as the father in law or other male household members. This was found generally in households where the women had gained a low-level education, and they were still young. This reflected that education was a crucial condition for women in performing a role in the public area. Education improved women's ability and encouraged them to be a household representative when given the opportunity.

2.3. Leadership in merit-making activity: Making merit is a traditional practice linked to Buddhism. Women normally played a role in preparing food, while the men were setting up the ritual location at the temple and leading

all steps of the ritual. When their men migrated to work abroad, participating in the rituals became another way for the women to create an identity and gain acceptance in society.

In the merit-making rituals, the wives grouped themselves to make merit in order to show the stability of their financial status to support the ritual. Sometime, they would act as the co-host of the ritual or as ritual fundraisers in order to raise donation money for the ritual. If they raised a large amount of money, they would get the admiration of the other community members. This was a way to build trust and to mobilize the social status of the women, as in a statement from an interview with a woman whose husband worked in Singapore.

"...in the recent merit-making ritual we participated in, we were the leaders, separated from our husbands who worked in another country. Nowadays, it is very easy to raise money. We just take a photo of the invitation letter and send it to our husbands. Our husbands then inform their colleagues in Singapore to make merit. We received much money, but less than from those who worked in Bangkok and South Korea..." (Chaba (fictitious name), 46 years old)

In addition, it was noticed that clothes and jewelry were the indicators that represented the financial status of women. On the day before the ritual began, the wives would prepare the nice dress. Some ordered new fabric to make a dress. Wives were defined by the clothes to ensure their confidence during the ritual. This demonstrated that the women paid attention to social expectations, they tried to get acceptance from society in various forms. These findings confirmed Desai and Banerji (2008), who found that Indian women were controlled by their husband's parents, although their husbands had migrated to work abroad. The women had not been freed in public areas.

Performing the merit-making ritual was mostly acted out by wealthy women, who got remittance from their husbands regularly, and those who had well-managed financial status in their households. They had the confidence to perform their roles in public spaces.

CONCLUSION AND RECOMMENDATION

A study of roles in the public space, of the wives whose husbands work abroad, was conducted through the activities that the women participated in. The study reveals a view of wives in the public space. According to the concept of gender role, the female is set "in place" within the household boundary, while the male represents roles in the public space. However, their husband's working abroad pushes the wives to play roles in the public space in 3 different activities which are 1) participation in politician at local level, 2) participation in community meeting activity, and 3) participation in the merit-making activity.

The results indicated that having a husband working abroad pushed the wives to improve their potential and to try to undertake roles in the public space. Although the communities they are living in still maintain traditional values and socio-cultural practices that rely on gender differentiation, women's roles have been changing due to a transition of the socio-economic context. Women, whose place was once within the household boundary, have now to perform roles in the community and political activities. It is concluded that when women have the chance to empower their potential, they are able to be leaders and play an important role in the public space.

Finally, it is clear that the husband working abroad has resulted in the wives' role in the public space. These findings may be used to determine policies on the development of the potential among women whose husbands work abroad, and develop leadership skills, education, and technology usage by women. Moreover, this can be used as a guideline to strengthen women in maintaining livelihood security while they are who left behind.

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References

- Alesina, A. Giuliano, P. & Nunn, N. (2013). On the Origins of Gender Roles: Women and the Plough. *The Quarterly Journal of Economics*, Volume 128, Issue 2.
- Atchawanitchakun, K. & Thongsima, T. (2005). *Women in the Sexual Rights Discourse*. Bangkok: Amarin Printing and Publishing.
- Champaklay, A., et al. (2013). How were the Kids after Parent's Migration? CLAIM Project. Nakorn Pathom: Institute of Population and Social Research, Mahidol University.
- Chantawanich, S. (2008). *Sociological Theory*. Bangkok: Chulalongkorn University Press.
- Cooke, L. P., & Gash, V. (2010). Wives' part-time employment and marital stability in Great Britain, West Germany and the United States. *Sociology*, 44(6), 1091-1108.
- Datta, A. & Mishra, S.K. (2011). IMPACT OF MALE MIGRATION ON WOMEN'S LIVES IN RURAL BIHAR. *The Indian Journal of Labour Economics*, Vol. 54, No. 3.
- Desai, S. & Banerji, M. (2008). Negotiated Identities: Male Migration and Left-Behind Wives in India. *National Institutes of Health*: 25(3): 337-355.
- Karymshakov, K. & Sulaimanova, B. (2017). Migration Impact on Left-behind Women's Labour Participation and Time-Use. United Nations University World Institute for Development Economics Research.
- Liem, N., Yeoh, B.S.A. & Toyota, M. (2006). Migration and the well-being of the 'left behind' in Asia, *Asian Population Studies*, vol. 2, No. 1: 37-44.
- Limanont, P. (2008). *Sexuality and Reproductive Health*. Bangkok: College of Population Studies, Chulalongkorn University.
- Mammen, K. & Paxson, C. (2000). Women's Work and Economic Development. *Journal of Economic Perspectives*, Volume 14, Number 4
- Nelson, M. (2006). Single Mothers "Do" Family. *Journal of Marriage and Family*, 68, 781- 795.
- Perraudin, A. (2016). Being a transnational mother while staying at home. Migrants' wives in Mexico City. *Amérique Latine Histoire et Mémoire. Les Cahiers ALHIM*
- Photisita, C. (2009). *Sciences and Arts of Qualitative Research*. Bangkok: Amarin Printing and Publishing.
- Ramitanont, C. (1992). *A Study of Women*. Bangkok: Thammasat University.
- Samutchak, P., Konkaew, T., & Uden, R. (2017). *The Well-being of Thai Family*. Nakorn Pathom: Institute of Population and Social Research, Mahidol University.
- Ullah, A.A. (2017). Male Migration and "Left-Behind" Women: Bane or Boom?. *Environment and Urbanization ASIA*, 8(1): 59-73.

Trust, Perception of Service Climate, and Voluntary Cooperation

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Abstract

Trust is based on the taxpayer's belief that the tax authority is competent, pursues relevant goals, and give support to the taxpayers. Trust leads to good perception of service climate and voluntary cooperation. This study aims to examine the effect of trust in tax authority on voluntary cooperation mediated by perception of service climate. This research used survey as the technique of collecting data with a total sample of 120 taxpayers consist of Millennials and X generations. The type of business of respondents were retail/production and services/profession. The survey was conducted in 2019 in five major cities in Indonesia (Jakarta, Semarang, Surabaya, Bandung, and Denpasar). This study uses quota and convenience sampling. The analysis used is Partial Least Square with Wrap-PLS as a statistical tool. The results of this study found that the trust in tax authority affects voluntary cooperation through the perception of service climate as mediation. We also find trust in tax authority affects the perception of service climate and voluntary cooperation directly.

Keywords: Tax Authority, Trust in Tax Authority, Perception of Service Climate, Voluntary Cooperation.

1. Introduction

Each person has a different level of compliance, depend on the factors that influence the level of tax compliance (Widayati and Nurlis, 2010). Decisions made by taxpayers on tax compliance become a separate dilemma for taxpayers (Kirchler et al., 2008; Balliet and Van Lange, 2013; Luttmmer and Singhal, 2014). Balliet and Van Lange (2013) explained that the dilemma arises because there is a conflict of interest between individual taxpayers and the collective interest of the community. Taxpayers tend to have a short-term motivation to minimize tax payments, while collective interest is more on long-term goal as a source of financing goods and services for public or public interests (Balliet and Van Lange, 2013). Short-term behavior and motivation to avoid taxes both legally and illegally to reduce the level of tax compliance must always exist in every country (Enste and Schneider, 2002). Several things cause a person to become disobedient, which are they feel that they do not get benefit directly and the tax they pay is not comparable with the facilities they get (Battiston & Gamba, 2016).

Indonesia's tax ratio in 2018 is at 11.57%, which means still low if we compare with other countries in ASEAN such as Cambodia 15.3%, Malaysia 14%, Singapore 14.29% (www.cnbcindonesia.com). A high tax ratio can be achieved if there is voluntary compliance (Kogler et al. 2013; Kirchler et al. 2008), rather than enforced compliance. The number of tax officers compares to taxpayers in Indonesia is 1: 7700 (Misbakhun, 2018), so that

its almost impossible to increase tax ratio by only using enforced compliance through tax audit. Other persuasions through the increasing quality of tax authority services lead to voluntary compliance that finally increase the tax ratio.

There are two motivations of tax compliance, which are enforced compliance and voluntary cooperation (Gangl et al. 2015). First, enforced compliance due to threats (coercive power) by the tax authority if the taxpayer does not carry out tax obligations. This system is described as tax authorities are cops and taxpayers are robbers, who try to avoid taxes and both never walk in one direction because taxpayers are not sincere and only pay taxes for fear of the tax authorities and afraid of violating regulations that result in punishment or sanctions (Tjondro et al., 2019; Gang et al., 2012). Second, voluntary cooperation means carrying out tax obligations voluntary because taxpayers trust the tax authorities (Gangl et al., 2015). Voluntary cooperation carried out by taxpayers reflects the view that paying taxes is an obligation for taxpayers and providing public needs is an obligation for the state (Kirchler & Wahl, 2010; Wahl et al. 2010). In this study, the authors used two generations namely generation X (born in 1965 and 1979) and millennial generation (1980 and 2000) (Jurney et al., 2017) because they are the most significant current and future taxpayers (Tjondro et al., 2019). We argue that the most suitable system for maximizing tax revenue for both generations is voluntary cooperation because the current condition of the number of tax officers compare to taxpayers in Indonesia is 1: 7700 (Misbakhun, 2018). It is challenging to rely solely on enforced systems. Literature by Frey & Holler (1998) stated that there was an award if the taxpayer performs tax compliance with his awareness. These awards are interpreted as gifts or gifts for taxpayers because they contribute to tax compliance (Frey & Holler, 1998). Also, there are penalties for taxpayers as a sanction in the form of fines or interest given to taxpayers for not making contributions in paying taxes (Frey & Holler, 1998). Giving rewards (gifts or praise) will enhance collaboration and minimize non-cooperation (Molenmaker 2016; 2018). For taxpayers, they prefer to be able to work with the tax authorities in making tax compliance than they get punishment in the form of sanctions or tax penalties (Baron, 1995; Baron & Jurney, 1993). This factor is the basis of the motivation of taxpayers to cooperate to create high tax compliance (Frey and Jegen, 2001).

Tax authorities use various methods to influence the level of tax compliance of their citizens. Based on the slippery slope framework, the tax authority applies power to enforce tax compliance of taxpayers, where the tax authority trusted by taxpayers will get voluntary cooperation from taxpayers (Kirchler, 2007; Kirchler et al., 2008). If the tax authority socializes tax compliance with positive matters and without any coercion, then taxpayers are more confident and trust to the tax authorities (Gangl et al., 2015). Tax authorities believe that taxpayers are responsible citizens and always avoid coercive actions (Kirchler et al., 2008). The study of Gang's et al. (2016) showed that tax authorities with coercive power reduce the level of trust of taxpayers, which is related to the climate of antagonistic interactions and enforcement of compliance. The government with coercive strength can reduce trust and voluntary cooperation because it makes more severe coercion steps to maintain the level of tax compliance (Kirchler et al., 2008). Taxpayers consider of tax authorities to be right partners by upholding social norms about tax honesty among fellow citizens (Alm and Torgler, 2011). Analysis of research shows that legitimate authority has a direct relationship or impact on voluntary cooperation and trust in the tax authorities (Gang et al., 2016). In some studies, tax compliance is influenced by two dimensions, namely government-owned power and people's trust in the government (Eberl, 2003). Trust in the government can also be implemented well if the government has an excellent work record (Karkin and Janssen, 2013).

The Perception of Service climate also influences voluntary cooperation. Gangl et al. (2012) suggested three models of tax climate, namely antagonistic climate models, service climate models, and confidence climate models. The author will discuss in-depth and focus on service climate. The service climate model is the interaction between taxpayers and tax authorities likened to "service & client" which means taxpayers and tax authorities work together based on applicable standards and rules (Gangl et al., 2012). This Perception of Service climate is based on professionalism and benevolence, which will later produce voluntary cooperation from taxpayers (Gang et al., 2012). In service climate, taxpayers believe that tax authorities work well to achieve goals for the country (Gangl et al., 2012). It must be recognized that the perception of service climate has a vital role in public or government organizations and an essential requirement for citizen satisfaction (Cronin and Taylor, 1992; Taylor and Baker, 1994). According to Martinez and Bosque (2013), trust in authority refers to public trust in the government that always provides excellent service and always strives to meet people's needs in the long run. Trust

in authority can increase because the service climate is perceived to be appropriate and fair for all taxpayers, without any difference in the level of taxpayer wealth (Cronin and Taylor, 1992; Taylor and Baker, 1994). With the work carried out by the tax authorities on taxpayers under the regulations that have been made, then the level of taxpayer trusts increases with the tax authorities (Taylor and Baker, 1994). Tax authorities have an essential role in maintaining the perception of service climate under the fair rules. Otherwise, the taxpayer's trust will decline (Gangl et al., 2012).

This research contributes to increase voluntary tax compliance in Indonesia by using X and Millennials generations as the respondents, which have significant contribution in tax payments. Other contribution is our research proved that both generations have great concern about trust in authority and service climate of tax institution. X and Millennials also perceived that trust in authority and service climate are two crucial factors in influencing voluntary compliance.

2. Literature review

2.1. Slippery Slope Framework theory

Muehlbacher and Kirchler (2010) in the Slippery Slope framework theory explains that tax compliance is determined by the perception of taxpayers on the government (tax authority) which is then often called the trust of the taxpayer. Kirchler, Hoelzl, and Wahl (2008) suggest two main things influence the level of tax compliance, namely, the trustworthiness of taxpayers towards the tax authority and the authority itself. This theory assumes that tax compliance can be realized by increasing the level of trust of taxpayers. There are three types of beliefs, namely, the concept of calculative trust (Fehr, 2009), rational trust (Ripperger, 1998), and knowledge-based trust (Lewicki and Bunker, 1996). Cognitive-based trust always involves a rational assessment of reputation for reliability and professionalism (Colquitt et al., 2011). Gobena et al. (2015) argue that cognition-based trust in the tax authority will lead to voluntary compliance. In Slippery Slope Framework, there are two forms of tax compliance, namely: (1) voluntary tax compliance due to synergistic service climate, and (2) forced tax compliance due to antagonistic climate (Kirchler, 2008). Compliance by coercion will not work well, while voluntary cooperation, which maintains the relationship of taxpayers and tax authorities will run well (Kirchler, 2007; Kirchler et al. 2008).

Murphy & Tyler (2008) argue that empirical theory shows, when the authority performs its duties under the procedures, the taxpayer believes more and adheres to all decisions made by the tax authority. With the existence of good relations between taxpayers and tax authorities, the tax authorities must act justly and do their duties as well as possible under the procedures made to increase the level of trust of taxpayers and increase tax compliance (Murphy, 2004). The higher trust will increase the level of voluntary compliance (Wahl et al., 2010; Muehlbacher et al., 2011).

2.2. Voluntary Cooperation

Regarding tax compliance, each person has different levels of compliance, depending on the factors that influence the level of tax compliance in each (Widayati and Nurlis, 2010). Tax compliance is based on the extent to which taxpayers are compliant or non-compliant with tax rules referring to the fulfillment of all tax obligations (Braithwaite, 2009). Tax compliance is defined as the level of compliance of taxpayers with applicable tax laws or regulations (James & Alley, 2004) and the payment of all tax payable (Braithwaite, 1995). Tax compliance can also be defined as a process of taxpayers to submit all tax returns as required by reporting all income correctly and accurately based on applicable regulations or tax laws in a country (Palil & Mustapha, 2011).

Based on the Slippery slope framework (Kirchler, 2007; Kirchler et al., 2008), there are two different dimensions of compliance, namely the dimensions of authority that lead to enforced compliance and trust in the voluntary cooperation. Similar things were also generated in an experimental study of tax behavior (Wahl et al., 2010), which revealed that the power of tax authorities and trust in tax authorities increased tax payments. Even so, studies show that power will only increase enforced compliance but instead reduce voluntary cooperation. Instead, the trust in authority will increase voluntary cooperation but will reduce enforced compliance (Wahl et al., 2010). Voluntary compliance is motivated by a sense of commitment, while forced compliance is motivated by resistance

(Braithwaite, 2003). The indicator of this variable is cooperativeness, which means that the two interconnected parties can cooperate well without coercion or involuntary nature.

2.3. Trust in Authority

According to Salminen and Ikola-Norrbacka (2010), trust is one of the ethical problems that can be learned from various perspectives; such as trust in the government or authorities. Kirchler, Hoelzl, and Wahl (2008) define trust as the general opinion of individuals and social groups that tax authority work for the goodness of community. The trust in question is how much the community has a level of trust in the tax authority that the tax authorities have carried out the procedures stipulated in the Tax Law so that the taxes paid will be managed and used as much as possible for the welfare of society. Public trust arises when a citizen gives his trust to his chosen representative to become a leader or public official or other authority holders, who acts to his advantage (Thomas 2001).

Kirchler et al. (2008) stated that taxpayers trust the tax authority if they feel the relationship with the tax authorities respect each other. Maximum service to taxpayers is a matter that can affect the level of trustworthiness of taxpayers. Torgler (2003) stated that trust to the tax authority is positively related to increasing of tax payment. In the slippery slope framework (Kirchler, 2007; Kirchler et al., 2008), trust makes the climate synergistic, where taxpayers and tax authority interact in very respectful ways, and taxpayers voluntarily work with tax authorities. Kirchler et al., (2008), trust in the tax authority will form a synergistic climate or service climate, where the attitude of "service and clients" is more prominent or dominant. In this climate, the tax authority acts as part of the community, which is a service unit, acts in support, respects taxpayers, and implements all procedures transparently and fairly. In this case, the taxpayer cooperates with the tax authority if the taxpayer's trust level is high.

According to Choriya et al. (2008) and Mcallister (1995), the factors that shape one's trust in others are three, namely ability, benevolence, and integrity. Trust creates mutually beneficial interactions between taxpayers and the government, thus affecting compliance behavior (Kastlunger, Lozza, Kirchler, & Schabmann, 2013; Kirchler, Hoelzl, & Wahl, 2008). Indicators that form trust can be explained as follows (1) ability, refers to organizational competencies and characteristics in influencing and authorizing specific areas. In this case, how the tax authorities able to provide, serve, and give security from other parties; (2) benevolence, refers to the willingness of an organization to provide mutually beneficial satisfaction with outsiders. Benevolence here includes attention, empathy, confidence, and acceptability; (3) integrity, related to the reliability of the information provided according to the actual situation. The information provided is correct under the facts or not.

2.4. Perception of Service Climate

Gangl et al. (2012) suggested three models of tax climate, namely antagonistic climate models, service climate models, and confidence climate models. The antagonistic climate is a condition where the taxpayer is forced to pay his tax based on the power of authority and the coercion through the threat of sanctions and penalties for taxpayers who reluctant to pay taxes (Gangl et al., 2012). So that in forced conditions, it inevitably the taxpayer must fulfill his tax; otherwise, they will be punished (Kirchler et al., 2008). The antagonistic model only works in a short-term period, but not useful in an extended period. The other weakness of this model does not apply to the new generation, Millennials, because Millennials have an attitude that more accept non-compliance that Baby Boomers and X generation (Jurney et al. 2017). According to the slippery slope framework, the use of power will produce an antagonistic climate like the "police and robbers" attitude, where the tax authorities are "police" who try to find as many taxpayers as possible, but taxpayers try to escape from the supervision of the tax authorities and tax evasion if possible (Kirchler et al., 2008). Thus, in an antagonistic climate, taxpayers only comply with the applicable tax regulations, if they feel very high authority. The consequence is that taxpayers are very rational to calculate the costs and benefits of each tax compliance decision. Tax compliance is only built by the power possessed by the authority. The confidence climate model is a model that describes the situation that taxpayers and tax authorities have trust in each other (Gangl et al., 2012). In other words, taxpayers and tax authorities show responsiveness and empathy with each other (Feld & Frey, 2002). The service climate model is a model that focused on the interaction between taxpayers and tax authority, such as "service & client," which means taxpayers and tax authorities cooperate based on applicable standards and rules (Gangl et al., 2012). Indicators in this variable

are service orientations, which is the assessment of taxpayers regarding the desire and effort of tax institutions or tax officers to know, help, or serve to meet the needs of taxpayers.

Many factors influence voluntary compliance, one of which is the taxpayer's perception of service. Service climate can be defined as the taxpayer's perception of service of tax officers in related policies, practices, and procedures, which promotes a climate that respects taxpayers. Service climate depends on the structural support provided by organizations through resources, training, managerial practices, and assistance required to work effectively (Schneider, 2013). In this case, the service climate can be considered as an individual, not an organizational attribute, measured in terms of perceptions that are psychologically meaningful to the individual, not in terms of particular organizational features. Alm and Torgler (2011) suggest recommendations for tax authorities to create conditions that are more consumer-friendly and service-oriented. Perception of service climate in the field of taxation is the taxpayer's perception of the quality and climate of services, practices, and procedures carried out by the tax authority. Carrasco et al., (2012) argued that the research with the topic of service climate was first conducted by Schneider in 1973, which focused on the efforts of an organization or institution in creating a warm atmosphere and friendly to customers or other parties. This shows that both parties, the tax authority, and taxpayers, have good relations and closeness that lead to cooperation. The service climate also states that the tax authority provides excellent services to the public and becomes an integral part of civilization. Thus taxpayers perceived the tax authority as fair and due to the rules, so that taxpayers reconcile with tax authority (Kirchler & Wahl, 2010; Wahl et al. 2010).

2.5. Hypothesis Development

Trust is based on the taxpayer's belief that the tax authority is competent, pursues relevant goals, and give support to the taxpayers. Together, legitimate power and trust lead to service climate between tax authorities and taxpayers. In the service climate, the tax authority is considered a professional and rule-based institution that provides services to its clients, taxpayers (Alm and Togler, 2011). The tax authority believes that taxpayers are citizens who are responsible for carrying out their obligations, on the other hand, taxpayers also consider tax authority as a partner in managing state fund tax. Taxpayers follow not only legal letters but also are passionate about obeying the law and seeing tax payments as a moral obligation (Braithwaite, 2003).

The Chathoth et al. (2007) study showed a significant effect of the influence of trust on service climate. In service climate, interactions are initially based on legitimate strength and careful consideration of other people's beliefs. However, they may become automatic with routine and repetitive interactions (Castelfranchi et al., 2010; Nooteboom, 2002). Thus, the transformation from an antagonistic climate to a service climate implies a reduction in preventive actions, like threatening or coercion, and more focus on tax authority assistance activities. However, the transformation to a service climate model depends on a trusting relationship based on the positive experience and socialization of taxpayers with the authorities (Gangl et al., 2012). Trust in the tax authority has a significant influence on the perception of service climate (Gang et al., 2015). Based on the literature and studies described earlier, the researcher sets the first hypothesis as follows:

H1: Trust in authority affects climate perception of service climate

Carrasso et al., (2012) argued that the research with the topic of service climate was first conducted by Schneider in 1973, which focused on the efforts of an organization or institution in creating a warm atmosphere and friendly to customers or other parties. This shows that both parties, the tax authority, and taxpayers, have good relations and closeness that lead to cooperation. Active cooperation is based on mediation through a climate of interaction so that the relationship between the tax authorities and taxpayers goes well. Therefore, individuals no longer consider avoiding taxes, otherwise more eager to contribute to the state. The high service quality of the tax authority can increase voluntary compliance (Gang et al., 2012). Based on the literature and studies described earlier, the researcher sets the second hypothesis as follows:

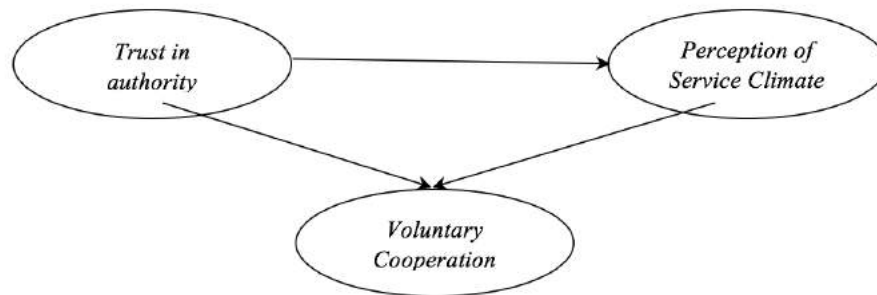
H2: Perception of service climate affects voluntary cooperation

Levi and Stoker (2000) suggested that trust is vital to establish compliance and cooperation. In the theory of slippery slope, voluntary tax compliance depends on the level of public trust in the tax authority (Kirchler et al., 2008). Kirchler et al. (2008) explain that trust greatly influences voluntary cooperation, and there is a dimension of interaction between tax authorities and taxpayers through trust. Kirchler et al. (2008) explain that trust in tax

authorities is a psychological variable that is not only able to increase tax compliance but also to maintain tax compliance. Evidence showed that taxpayer's trust in tax authority was positively related to the increase of tax payments (Torgler, 2003). Voluntary cooperation means carrying out tax obligations without incentive because taxpayers trust the tax authority (Gangl et al., 2015). Voluntary cooperation reflects the view that paying taxes is an obligation for taxpayers and on the other hand, obligation for the state to provide public goods for the community (Kirchler & Wahl, 2010; Wahl et al. 2010). Based on the explanation above, the writer makes the following hypothesis:

H3: Trust in authority affects voluntary cooperation

Figure 1. Structural Model



Indirect : H4: TA → SC → VC

3. Methods

3.1. Sample and Criteria Respondent

The sample obtained was 164 data obtained from the population. Determination of the sample in this study will use quota and convenience sampling. This sampling technique takes the number of samples as determined by the researcher. The advantage of quota sampling is that respondents represent each group of gender, cities in Indonesia, generation, type of business, and method of income tax calculation. The advantages of this method are that the respondent has been known by the researchers before, so the respondent answers the questions regarding tax honestly. The sample criteria to be used in this study include: individual taxpayers who have NPWP, run their business in five major cities in Indonesia, namely, Jakarta, Semarang, Surabaya, Bandung, and Denpasar, included in the two generations, namely X (age 39 - 58 years) and millennial generation (ages 19 - 39 years).

3.2. Measurement

The measurement scale used for each variable in this study is the Likert scale. Variables related to this research, namely trust in authority, climate perception of service, and voluntary cooperation are measured by a seven-point Likert scale. The seven-point Likert scale starts from 'strongly disagree' to 'strongly agree.' According to Cooper and Schindler (2014), the measurement that is appropriate for this study is measurement based on the Likert scale because respondents are directed to give their opinion or assessment about something.

3.3. Instrument and indicators

Data collection carried out by distributing questionnaires had previously been checked by researchers using a pilot project. Questionnaires are shared online for taxpayers who have jobs in retail, production, or service, to find out whether the questions in the questionnaire can be understood by the respondents. The questionnaire is closed questions.

Trust in authority variable, the researcher modified several questions from Mc Allister (1995) and Choriya et al. (2008) with three indicators, namely ability, benevolence, and integrity. Based on research by Gangl et al. (2015), indicators that shape the perception of service climate are service orientations. Involuntary cooperation, we use indicators of cooperativeness (Gang et al., 2016).

Table 1. Questionnaire Design

Variables	Indicators	References
Trust in authority	1. Ability 2. Benevolence 3. Integrity	(Mc Allistair, 1995; Choriayah, 2008)
Perception of Service Climate	Service orientation	(Gangl,2016)
Voluntary cooperation	Cooperativeness	(Gangl,2016)

3.4. Method of Analysis

The method used in this study is quantitative. This study uses Structural Equation Modeling (SEM) using Partial Least Square (PLS) data analysis tools and WarpPLS 6.0 software. PLS is a variant-based structural equation (SEM) analysis which can simultaneously test the measurement model while testing structural models (Hartono, 2011). Croasdell, Mcleod, & Simkin (2011) stated that PLS is appropriate to be used for a structural model concerning representation in a constructive, formative, and reflective manner. Another advantage of the analysis method using the SEM approach is that SEM can assess the suitability of the model (fit model) and SEM can still account for the emergence of errors in assessment or measurement for variables that clearly cannot be measured directly (Hair et al. 2011).

4. Results

4.1. Overview of Research Objects

Table 2 shows that as many as 164 respondents were involved in filling out this questionnaire online, but as many as 44 respondents who did not meet the criteria. So that the remaining 120 respondents (73.17 percent) that met the criteria were processed.

Table 2. Results of questionnaires

Explanation	Total
Questionnaires received	164
Questionnaires that cannot be processed	44
Total questionnaires used in the research	120

4.2. Profile and Demographic Summary of Respondents

Respondents who filled out the questionnaire in this study were more dominant women, which was 60 percent or 72 respondents, while men were 40 percent or 48 respondents. The business types of respondents were 23 respondents or 19.17 percent as retail/production entrepreneurs, and 67.5 percent or 81 respondents as service entrepreneurs, and the remaining 16 respondents had both types of business. The cities of origin of the respondents which the largest is Surabaya as many as 52 respondents or 43.33 percent. The city of Bandung, as the least of respondents, consists of 15 respondents or only 12.5 percent. The most dominant generation as the respondent in this study is the Millennial generation of 102 respondents or 85 percent while the X generation is only 18 respondents or 15 percent. Most respondents have gross income below 4.8 billion Rupiahs per year (101 respondents or 84.17 percent).

4.3. Descriptive Statistics

Table 3 about descriptive data, shows the standard deviation, and the mean value of each variable used. The tendency to agree with the questions of each variable is indicated by the higher mean value of a variable. Table 3 shows the average value of all indicators used. The highest mean in the trust in authority variable is TIA3, which is 5.27 out of 7 with the indicator benevolence. This shows that the tax authority that does its job well as a positive influence, namely increasing public trust in the tax authority. Meanwhile, in the variable perception of service climate, the highest mean is the PSC2 indicate of 5.45 out of 7, which means the taxpayer's perception of service climate raises the perception that the tax authority in carrying out its duties is service-oriented. Further explanation

of the meaning of the mean for each indicator will be explained at the end of this study in the results section and discussion.

Table 3. Descriptive Statistics

Indicators	Mean	Range (Percentage)	Standard Deviation
TIA1	5,17	73,92	1,09
TIA2	5,16	73,80	1,15
TIA3	5,27	75,35	1,04
TIA4	5,23	74,76	1,00
PSC1	5,22	74,64	1,19
PSC2	5,45	77,97	1,09
PSC3	5,20	74,28	1,10
VCO1	5,29	75,59	1,04
VCO2	5,19	74,16	1,08
VCO3	5,36	76,66	1,25

4.4. Test Results

Table 4 shows that the validity requirements have been met by all indicators, with a loading value > 0.50 . According to Kock (2017), the loading value and cross-loading that meet the convergent validity standard are in the range of -1 to 1, and the value must be higher than the cross-loading value. Convergent validity is acceptable if the Loading value is above 0.5, and the P-value is below 0.05 (Hair et al., 2009). All loading values are above 0.5 and show a value higher than cross-loading, which means all items are valid.

Table 4. Result of Cross Loading and p-value

Indicators	Trust in Authority	Service Climate	Voluntary Cooperation	P-Value	Conclusion
TIA1	0.745	0.059	-0.074	<0.001	Valid
TIA2	0.724	0.098	-0.122	<0.001	Valid
TIA3	0.767	-0.218	0.245	<0.001	Valid
TIA4	0.758	0.068	-0.059	<0.001	Valid
PSC1	0.062	0.757	-0.118	<0.001	Valid
PSC2	0.044	0.737	-0.180	<0.001	Valid
PSC3	-0.108	0.733	0.302	<0.001	Valid
VCO1	0.052	0.027	0.768	<0.001	Valid
VCO2	0.000	0.203	0.729	<0.001	Valid
VCO3	-0.058	-0.246	0.686	<0.001	Valid

The reliability coefficient must be > 0.7 for composite reliability (Kock and Lynn, 2012). Hinton et al., (2004) whose Cronbach's alpha value with a range of 0.5-0.7 is called moderate alpha, which means that it is still acceptable. Based on a study by Dall'Oglio et al. (2015; 2010), Cronbach's alpha of 0.5 is still acceptable if the study consists of a few indicators. Even Nguyen et al. (2019), said that research with items or indicators that would slightly tend to have a low Cronbach's alpha value, and for psychological research with a Cronbach's alpha 0.5 value was acceptable or reliable. This research is included in the category of psychology because it examines how individual or group perceptions of a variable. So, Cronbach's alpha in this study can be accepted or still reliable. All Cronbach's alpha values are above 0.5 so that they are passed the reliability test.

Table 5. Result of reliability and validity test

Variable	Trust in Authority	Perception of Service Climate	Voluntary Cooperation
Composite Reliability	0.836	0.786	0.772
Cronbach's Alpha	0.738	0.592	0.556

Discriminant validity measurements are also carried out by comparing the correlation between constructs in the model with the square root average value of each construct. Discriminant validity is measured by looking at a comparison of AVE's square root latent variables with other variable correlation coefficients. Table 6 presents the

test values which reveal that discriminant validity is fulfilled for all variables with the correlation coefficient value smaller than the AVE square value.

Table 6. Correlations among AVE's square root with latent variables

	Trust in Authority	Service Climate	Voluntary Cooperation
Trust in authority	0.749	0.556	0.547
Perception of Service Climate	0.556	0.742	0.610
Voluntary Cooperation	0.547	0.610	0.728

Table 7 shows the effect size of each indicator in this study. Effect size is used to measure how much value or influence each indicator has on latent variables in a study. According to Solimun et al. (2017), the smallest effect size value of an indicator is 0.02 so that if there is an effect size value below 0.02, then the value of the effect size is very weak and must be discarded. The classification of the effect size value is 3 (three), that is, the effect size value above 0.35 includes the big or strong category, the effect size value above 0.15-0.35 is the medium category, and the effect size value with a value above 0.02-0.15 is a small/low category. The effect size value of this study shows that all indicators have fulfilled the effect size with the medium category.

Table 7. Effect Sizes

Indicators	Effect Size
TIA1	0.247
TIA2	0.234
TIA3	0.262
TIA4	0.257
PSC1	0.346
PSC2	0.328
PSC3	0.325
VCO1	0.370
VCO2	0.334
VCO3	0.296

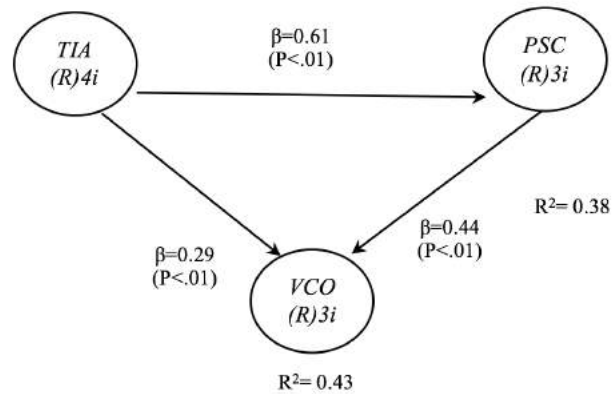
Fit model testing aims to find a model that is fit with the original data so that it can determine the quality of the model. Based on the data in the table above, it is known that the model in this study was declared fit. APC, ARS, and AARS have a p-value of less than 0.05. While the value of AVIF <5 shows that there is no multicollinearity problem between the indicator and the variable used.

Table 8. Goodness of Fit

No	Model Fit dan quality indices	Result	Conclusion
1	Average path coefficient (APC)	0.449, P<0.001	Fit
2	Average R-squared (ARS)	0.405, P<0.001	Fit
3	Average Adjusted R-squared (AARS)	0.398, P<0.001	Fit
4	Average block VIF (AVIF)	1.567	Ideal
5	Average full collinearity VIF (AFVIF)	1.723	Ideal
6	Tenenhaus GoF (GoF)	0.471	Large
7	Sympson's paradox ratio (SPR)	1.000	Ideal
8	R-squared contribution ratio (RSCR)	1.000	Ideal
9	Statistical suppression ratio (SSR)	1.000	Accepted
10	Nonlinear bivariate causality direction ratio (NLBCDR)	1.000	Accepted

4.5. Analysis and Discussion

Figure 2. Result of Wrap-PLS



Based on the results of the study, it was proved that the perception of service climate had an R-square value of 0.38, while the voluntary cooperation was 0.43. This shows that the voluntary cooperation variable can be influenced/predicted by the variable service climate and trust in authority by 43% while the rest is explained by other variables which are not found in this study. Variable climate perception of service can be influenced/predicted by the variable trust in authority by 38%, while the rest can be predicted by other variables not used in this study.

Table 9. R-squared

Variable	R-squared
Trust in Authority	
Perception of Service Climate	0.38
Voluntary Cooperation	0.43

4.6. Interpretations

Table 10. Hypothesis testing – Direct Effect

Relationship (Explanatory variable→Response variable)	Path Coefficient	p-value	Explanation
Trust in Authority → Perception of service climate	0.615	<0.001	Significant
Perception of service climate → Voluntary Cooperation	0.440	<0.001	Significant
Trust in Authority → Voluntary Cooperation	0.292	<0.001	Significant

4.6.1 Trust in Authority and Perception of Service Climate

This study proves that the trust in authority variable has a significant effect on the perception of service climate. This can be seen based on the p-values of <0.001, which is <0.05. This explanation confirms that this hypothesis (H1) is accepted. Based on the estimated value of the path coefficient (original sample) that is equal to 0.615. The positive sign in the path coefficient shows a unidirectional relationship between the trust in authority and the perception of service climate where if the trust in authority increases once, then the perception of service climate increases by 0.615 times. This is similar to what Walsh (2012) stated that it is crucial that the government seeks to deliver and implement a good and conducive tax system. This can be seen from the relationship of the hypothesis proved to be significant and means that the trust in the authority given by the public or taxpayers can improve the perception of service climate between taxpayers and tax officers (Gang et al., 2012). This shows that the tax authority has implemented the law well as contained in the Republic of Indonesia Law number 25 of 2009

concerning public services. This law was prepared with the aim of the tax authorities being obliged to serve every citizen to fulfill their tax rights and obligations and to build public trust in public services.

4.6.2 Perception of Service Climate and Voluntary Cooperation

Based on the results of the hypothesis test above, it can be concluded that the variable perception of service climate has a significant effect on voluntary cooperation. This can be seen based on the value of p-values, which is <0.001 . This explanation confirms that this hypothesis (H2) is accepted. Based on the estimated value of the path coefficient produced is equal to 0.440. A positive sign on the path coefficient shows a positive relationship between perception of service climate and voluntary cooperation. Perceptions of service climate that arise in the community or taxpayers have a significant impact on improving voluntary tax compliance. This hypothesis is supported or in line with several studies. Cyan, Koumpias, and Martinez-Vazquez (2017) state that the warmth and friendliness of good service (for example via website, clerk, telephone hotline, or e-mail), use of legitimate slogans or symbols (for example flags, logos) (Gangl et al., 2016), can grow even increase the motivation of tax compliance.

4.6.3 Trust in Authority and Voluntary Cooperation

The results of hypothesis testing show that trust in the government has a positive effect on tax compliance. Based on the p-value, the influence of trust in authority to voluntary cooperation is significant with a p-value of <0.001 with the path coefficient of 0.292, which means H3 is accepted. These results indicate that the higher the trustworthiness of taxpayers towards the tax institution, it increases tax compliance. This study proved the concept of the slippery slope framework that underlies tax compliance through trust in authority (Kirchler et al., 2008). This research is also in line with the social psychology theory, which states that trust is an essential basis in maintaining a strong relationship between taxpayers and tax authorities. Each party will be aware of their respective duties and responsibilities, so they can act according to their rights and obligations both as taxpayers and tax collectors (Feld & Frey, 2002). Some studies show that taxpayers' beliefs influence taxpayer compliance. For example, taxpayers believe that the government can provide maximum tax services (Alm and Torgler, 2011).

4.6.4 Trust in Authority and Voluntary Cooperation with Perception of Service Climate as a mediating

Table 11. Hypothesis testing – Indirect Effect

Relationship between variables (Explanatory variable → Response variable)	Direct Coefficient, p- value	Path p- value	Indirect Coefficient, p- value	Path p- value	Total Effect and Explanation
Trust in Authority → Perception of Service Climate → Voluntary Cooperation	0.292, <0.001		0.562, <0.001		Significant/ Intervening

Table 11 shown that there is an indirect relationship between the trust in authority and the voluntary cooperation using the perception of service climate as a mediating variable. This is evident from the p-values of <0.001 and the estimated path coefficient of 0.562. This explanation shows that this hypothesis (H4) is accepted. This significance relationship shows that the relationship is strong. This study shows that voluntary cooperation can improve well if there are higher trust in authority and good perception of service climate. This study shows that the perception of service climate about how well the service of tax authority or tax officers, are significant. Tax authorities also consider ways to increase the trust of taxpayers (Gang et al., 2014) by creating a good service climate. When trust is strong, it will also create high voluntary compliance (Gang et al., 2015). The trust in the authority shows that the tax authority has a good performance and reputation as a provider and manager of services, so that increases voluntary cooperation (Gang et al., 2014).

5. Discussion

Table 12. Mean of each indicator

Indicators	TIA1	TIA2	TIA3	TIA4	PSC1	PSC2	PSC3	VCO1	VCO2	VCO3
Mean	5,17	5,16	5,27	5,23	5,22	5,45	5,2	5,29	5,19	5,36

Based on the results of processing the respondent data, specifically the mean above, the author finds that the trust in the authority is critical. This trust arises because the tax authorities work competently and professionally and can assist taxpayers in resolving their tax problems both directly and through the website. On the TIA3 indicator, benevolence with a mean value of 5.27. This shows that the tax officer can complete his task correctly or be competent in his field, and this makes the taxpayer increasingly trusting the tax authority. This means, the respondents in this study, especially generation X and the millennial generation, strongly believe in the tax authority because the tax authorities can help taxpayers resolve their tax problems correctly.

Based on table 12, the highest mean in the variable perception of service climate is the PSC2 indicator of 5.45. This means that taxpayers feel very well treated as clients by the tax authority so that the relationship between the two is professionally intertwined. This perception shows that the tax authority has implemented the law well as contained in Law number 16 of 2009 concerning General Provisions and Tax Procedures. The purpose of the drafting of this law is to provide a sense of justice, improve services to taxpayers, provide legal certainty, and increase law enforcement.

The indicator with the highest average value in the voluntary cooperation variable is VCO3 of 5.36. This shows that among taxpayers and tax authorities, there is high voluntary cooperation. When a taxpayer makes a mistake in terms of tax administration errors (such as a mistake in filling tax return) and the taxpayer acknowledges it as a mistake, and asks the tax authority to help correct the error, then there has been voluntary cooperation in terms of tax compliance.

This study deepens previous empirical research that discusses tax compliance in terms of the trust, service climate, and compliance motivation, namely voluntary cooperation (Gangl et al. 2016). Previous research found that climate perception of service related to tax authorities can improve voluntary cooperation (Gangl et al., 2015; Gangl et al., 2016). Based on the results of this study further, reinforce the opinion of researchers that the most suitable approach to maximizing tax revenue for both generations is voluntary cooperation. Besides, the condition of the comparison of the number of tax employees is only around 44,930 people (www.sdm.kemenkeu.go.id) and the Indonesian people, which number around 200 million people with 18.3 million registered Taxpayers.

6. Conclusion

This study aims to determine whether trust in authority affects the perception of service climate and voluntary cooperation directly and the effect of trust in authority on voluntary cooperation by using the perception of service climate as a mediating variable. This study uses 120 Individual Taxpayers in five major cities in Indonesia, namely Surabaya, Semarang, Bandung, Jakarta, and Denpasar with jobs in retail/production or free/professional business. By using WrapPLS and Structural Equation Model (SEM) modeling, this study shows empirically that perception of service climate can mediate the relationship between trust in authority and voluntary cooperation with a strong level of significance. Voluntary cooperation will emerge if the government, namely the tax authority, treats taxpayers properly as clients and raises the perception of service climate. That is, if the tax authority provides conducive and excellent service so that taxpayers feel there is no distance between the tax authorities and taxpayers, then the voluntary cooperation will emerge very large. Perception of service climate can be even better if trust in the government increases because the tax authority performs its duties well, professionally and can help taxpayers resolve their tax problems. Millennials and generation X have been and will be the most significant tax contributor to the country. Taxpayer perceptions of service climate will depend on how the tax authority provides maximum service for both generations.

This study has several limitations. The results of this study apply only in a specific area and cannot be generalized. For better research results for further research in the technic, sampling needs to be considered further.

References

- Alm, J. & Torgler, B. (2011). Do ethics matter? Tax compliance and morality. *Journal of Business Ethics*. Vol. 101, No. 4. Pp 635-651: <https://doi.org/10.1007/s10551-011-0761-9>
- Balliet, D. P., & Van Lange, P. A. M. (2013). Trust, punishment, and cooperation across 18 societies. *Perspectives on Psychological Science*, 8, 363-379.
- Baron, J. (1995). Blind justice: Fairness to groups and the do-no-harm principle. *Journal of Behavioral Decision Making*, 8(2), 71–83.
- Baron, J., & Jurney, J. (1993). Norms against voting for coerced reform. *Journal of Personality and Social Psychology*, 64(3), 347–355.
- Battiston & Gamba. (2016). The impact of social pressure on tax compliance : A field experiment. Italia : Bruno Kessler Foundation.
- Braithwaite, V. (1995). Games of engagement: postures within the regulatory community. *Law and Policy*, Vol. 17 No. 3, 225-255.
- Braithwaite, V. (2003). Dancing with tax authorities: Motivational postures and non-compliant actions. In V. Braithwaite (Ed.), *Taxing democracy: Understanding tax avoidance and evasion*. Aldershot, UK: Ashgate, 15-39.
- Braithwaite, V. (2009). *Defiance in Taxation and Governance: Resisting and Dismissing Authority in a Democracy*. Cheltenham, UK and Northampton: Edward Elgar.
- Carrasco, H., Martinez-Tur, V., Peiro, J.M., & Moliner, C. (2012). Validation of a measure of service climate in organizations. *Revista de Psicología del Trabajo y de las Organizaciones*, 28 (2), 69-80. <http://www.redalyc.org/articulo.oa?id=231324583001>
- Castelfranchi, C., & Falcone, R., & Ryan, R.M. (2010). *Trust Theory: A Socio-cognitive and computational model*. West Sussex: Willey.
- Chathoth, P. K., Mak, B., Jauhari, V., & Manaktola, K. (2007). Employees' perceptions of organizational trust and service climate: A structural model combining their effects on employee satisfaction. *Journal of Hospitality & Tourism Research*, 31(3), 338–357.
- Chorayah, Handayani, & Endang. (2008). Pengaruh kepercayaan wajib pajak pada account representative terhadap kepatuhan wajib pajak. *Jurnal Akuntansi dan Bisnis*. Fakultas Ekonomika dan Bisnis. Universitas Brawijaya.
- Colquitt, J. A., Lepine, J.A., Piccolo, R. F., Zapata, C. P., & Rich, B. L. (2011). Explaining the justice-performance relationship: Trust as exchange deepener or trust as uncertainty reducer?. *The Journal of Applied Psychology*. 97. 1-15..
- Cooper, D.R. dan Schindler, P.S. 2014. *Business Research Methods*. New York: McGraw-Hill.
- Croasdell, D., McLeod, A., & Simkin, M. G. (2011). Why don't more women major in information systems? *Information Technology & People*, 24(2), 158-183. <http://dx.doi.org/10.1108/09593841111137340>
- Cronin, J.J. and Taylor, S.A. (1992). Measuring service quality: A reexamination and extension. *Journal of Marketing*, 56, 55-68.
- Cyan, M.R., Koumpias, A.M., and Martinez-Vazquez, J. (2017). The effects of mass media campaigns on individual attitudes towards tax compliance; quasi-experimental evidence from survey data in Pakistan. *Journal of Behavioral and Experimental Economics*, 70, 10-22. <https://doi.org/10.1016/j.socec.2017.07.004>
- Dall'Oglio, A. M., Rossiello, B., Coletti, M. F., Caselli, M. C., Rava, L., Di Ciommo, V., Orzalesi, M., Giannantoni, P., & Pasqualetti, P. (2010). Developmental evaluation at age 4: Validity of an Italian parental questionnaire. *Journal of Paediatrics and Child Health*, 46(7–8), 419–426.
- Dall'Oglio, I., Nicolo, R., Di Ciommo, V., Bianchi, N., Ciliento, G., Gawronski, O., Pomponi, M., Roberti, M., Tiozzo, E., & Raponi, M. (2015). A systematic review of hospital food service patient satisfaction studies. *Journal of the Academy of Nutrition and Dietetics*, 115(4), 567–584.
- Enste, D., & Schneider, F. (2002). "Hiding in the shadows; The growth of the underground economy," *IMF Economic Issues* 30, International Monetary Fund.
- Eberl, D. (2003). *Vertrauen und management*. Stuttgart: SchaefferPoeschel.
- Feld, L. P., & Frey, B. S. (2002). Trust breeds trust: How taxpayers are treated. *Economics of Governance*, 3, 87-99.
- Fehr, E. (2009). On the economics and biology of trust. *Journal of the European Economic Association*, 7(2-3), 235-266.
- Frey, B. S., & Jegen, R. (2001). Motivation Crowding Theory. *Journal of Economic Survey*, 15(5), 589-611.
- Frey, B.S., & Holler, M.J. (1998). Tax compliance policy reconsidered. *Homo oeconomicus*, 15 (1), 27-44.
- Gangl, K., Hofmann, E., Pollai, M., & Kirchler, E. (2012). The dynamics of power and trust in the Slippery Slope Framework. SSRN Working Paper 2024946.

- Gangl, K., Hofmann, E., & Kirchler, E. (2015). New Ideas in Psychology Tax authorities' interaction with taxpayers : A conception of compliance in social dilemmas by power and trust. *New Ideas in Psychology*, 37, 13–23.
- Gangl, K., Hofmann, E., Kirchler, E., and Stark, J. (2014). Enhancing tax compliance through coercive and legitimate power of tax authorities by concurrently diminishing or facilitating trust in tax authorities. *Law Policy* 36, 290–313.
- Gangl, K., Hofmann, E., Hartl, B., & Kirchler, E. (2016). Power of authorities and trust in authorities determine the interaction climate and tax compliance. In D. Salter, & L. Oats (Eds.), *Contemporary Issues in Taxation Research*, 2, 87-102. Birmingham: Fiscal Publications.
- Gobena, L. B. & Van Dijke, M. (2015). "Power, justice, and trust: A moderated mediation analysis of tax compliance among Ethiopian business owners". *Journal of Economic Psychology*, 52, 24–37
- Hair, J. F., Black, W.C., Babin, B. J., & Anderson, R. E. (2009). *Multivariate data analysis*. Upper Saddle River: Prentice Hall.
- Hair, J. F., Ringle, C. M., & Sarstedt, M. (2011). PLS-SEM : Indeed a silver bullet. *Journal of Marketing Theory and Practice*, 19(2), 139-152.
- Hartono, J. (2011). *Konsep dan Aplikasi Structural Equation Modeling berbasis varian dalam penelitian bisnis*. Yogyakarta: UPP STIM YKPN.
- Hinton, P.R., Brownlow, C., McMurray, I. & Cozens, B. (2004). *SPSS Explained*. Hove: Routledge.
- CNBC, Indonesia (2018). Alasan pemerintahan Jokowi kenapa rasio pajak turun terus. Chandra Gian Asmara. 29 August 2018. Retrived 5 Mei 2019 from <https://www.cnbcindonesia.com/>
- James, S., & Alley, C. (2004). Tax compliance cost. *University of Exeter Business School Streatham, United Kingdom. Taylor and Francis Journals*, 9, 281-289.
- Jurney, S., Rupert, T., & Wartick, M. (2017). Generational differences in perceptions of tax fairness and attitudes towards compliance. *Advances in Taxation*, 24, 163-197.
- Karkin, N., & Janssen, M. (2013). Evaluating websites from a public value perspective: A review of Turkish local government websites. *International Journal of Information Management*.
- Kastlunger, B., Lozza, E., Kirchler, E., & Schabmann, A. (2013). Powerful authorities and trusting citizens: The slippery slope framework and tax compliance in Italy. *Journal of Economic Psychology*, 34, 36-45.
- Kirchler, E. (2007). *The economic psychology of tax behaviour*. Cambridge: University Press.
- Kirchler, E., Hoelzl, E., & Wahl, I. (2008). Enforced versus voluntary tax compliance: The “slippery slope” framework. *Journal of Economic Psychology*, 29, 21-225.
- Kirchler, E., & Wahl, I. (2010). Tax compliance inventory TAX-I: designing an inventory for surveys of tax compliance. *Journal of Economic Psychology*, 31, 331e346.
- Kock, N., Lynn, G. S.(2012). Lateral collinearity and misleading results in variance-based SEM: An illustration and recommendations. *Journal of the Association for Information Systems*, 13(7), 546-580.
- Kock, N. (2017). *WrapPLS user manual version 6.0*. ScriptWarp System™. USA: Texas.
- Kogler, C., Batrancea, L., Nichita, A ., Jozsef, P ., Alexis, B., & Kirchler, E . (2013). Trust and power as determinants of tax compliance: Testing the assumptions of the slippery slope framework in Austria, Hungary, Romania and Russia, *Journal of Economic Psychology* 34 (2013) 169–180
- Luttmer, Erzo F. P., & Singhal, Monica. (2014). "Tax morale." *Journal of Economic Perspectives*, 28 (4): 149-68.
- Levi, M., & Stoker, L. (2000). Political trust and trustworthiness. *Annual Review of Political Science*, 3, 475–507.
- Lewicki, R. J., & Bunker, B. B. (1996). "Developing and maintaining trust in work relationships". *Trust in Organizations: Frontiers of Theory and Research*, 114, 139.
- Martinez, P. and Bosque, I.R.D. (2013), “CSR and customer loyalty: the roles of trust, customer identification with the company and satisfaction”, *International Journal of Hospitality Management*, Vol. 35 No. 1, pp. 89-99.
- McAllister, D. J. (1995). Affect- and cognition-based trust as foundations for interpersonal cooperation in organizations. *The Academy of Management Journal*, 38(1),24-59.
- Misbakhun, H. M. (2018). Reformasi perpajakan untuk meningkatkan kesadaran pajak: disampaikan pada seminar “meningkatkan kesadaran pajak”, diselenggarakan oleh Ditjen Pajak Kementerian Keuangan RI, Jakarta.
- Molenmaker, W. E., de Kwaadsteniet, E. W., & van Dijk, E. (2016). The impact of personal responsibility on the (un)willingness to punish non-cooperation and reward cooperation. *Organizational Behavior and Human Decision Processes*. 134, 1-15.
- Molenmaker, Welmer & Kwaadsteniet, Erik & van Dijk, Eric. (2018). The effect of decision timing on the willingness to costly reward cooperation and punish noncooperation: Sanctioning the past, the present, or the future. *Journal of Behavioral Decision Making*, 1-14
- Muehlbacher, S., Kirchler, E., & Schwarzenberger, H. (2011). Voluntary versus enforced tax compliance: empirical evidence for the “slippery slope” framework. *European Journal of Law and Economics*, 32, 89-97.
- Muehlbacher, S., dan Kirchler, E. 2010. Tax Compliance by Trust and Power of Authorities. *International Economic Journal* 24(4), 607-610.

- Murphy, K. (2004). The role of trust in nurturing compliance: A study of accused tax avoiders. *Law and Human Behavior*, 28 (2), 187–209.
- Murphy, K., & Tyler, T. (2008). Procedural justice and compliance behaviour: the mediating role of emotions. *European Journal of Social Psychology*, 38(4), 652-668.
- Nguyen, M. C., Gabbe, S. G., Kemper, K. J., Mahan, J. D., Cheavens, J. S., & Moffatt-Bruce, S. D.(2019). Training on mind-body skills: Feasibility and effects on physician mindfulness, compassion, and associated effects on stress, burnout, and clinical outcomes. *The Journal of Positive Psychology*, 1-14.
- Nooteboom, B. (2002). *Trust: Forms, foundation, function, failures and figure*. Cheltenham: Edward Elgar.
- Palil, M. R., & Mustapha, A. F. (2011). Factors affecting tax compliance behaviour in self-assessment system. *African Journal of Business Management*, 5 No. 33, 12864-12872.
- Ripperger, T. (1998). *Okonomik des Vertrauens: Analyse eines Organisationsprinzips [The economic of trust: Analysis of an organisation principle]*. Tübingen: Mohr Siebeck.
- Thomas, R. M., (2001) Public Trust, Integrity, and Privatization, *Public Integrity*, 3:3, 242-261,
- Salminen, A. & Ikola-Norrbacka, R. (2010), "Trust, good governance and unethical actions in Finnish public administration". *International Journal of Public Sector Management*, Vol.23, No.7, pp. 647-668
- Schneider, F. (2013). Organizational climate and culture. *Annual Review of Psychology*, 64, 361-388
- Solimun, Fernandes, A. R., & Nurjannah. (2017). *Metode Statistika Multivariat Pemodelan Persamaan Struktural*. Malang: UB Press.
- Taylor, S.A. & Baker, T.L. (1994) An assessment of the relationship between service quality and customer satisfaction in formation of consumers' purchase intentions. *Journal of Retailing*, 70, 163-178.
- Tjondro, E., Santosa, K.G., & Prayitno, N. (2019). Perception of service-orientation and trust of tax officers between millenials, x, and baby boomers. *Jurnal Ilmiah & Manajemen*. Vol. 9, No. 1, pp. 1-18
- Torgler, B. (2003). Tax morale, rule-governed behaviour and trust. *Constitutional Political Economy*, 14, 119-140.
- Wahl, I., Kastlunger, B., & Kirchler, E. (2010). Trust in authorities and power to enforce tax compliance: an empirical analysis of the "Slippery Slope Framework." *Law & Policy*, 32, 383e406
- Walsh, K. (2012). *Understanding Taxpayer Behaviour New Opportunities for Tax Administration*. Policy Paper, 43(3), 451-475.
- Widayati & Nurlis. (2010). Faktor- Faktor yang Mempengaruhi Kemauan Untuk Membayar Pajak Wajib Pajak Orang Pribadi yang Melakukan Pekerjaan Bebas (Studi Kasus KPP Pratama Gambir Tiga). Purwokerto : Simposium Nasional Akuntansi XIII.

An Econometric Testing of Traditional Import Demand Function for Cote d'Ivoire

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Abstract

This study estimates an aggregate import demand function for Cote d'Ivoire and tests the price homogeneity assumption implied by conventional import models. Estimations are based on annual data for real import, real GDP, domestic and import prices over the period 1980-2017. The empirical results reveal that there exists a long run relationship between imports, income, domestic and import prices. In both the long and short run, imports are positively related to real income and domestic prices, and negatively related to foreign prices. The demand for imports is found to respond much more strongly to changes in domestic price rather than income and import price. The study also shows that the assumption of price homogeneity does not hold, implying that the relative price formulation of import demand function is inappropriate in the case of Cote d'Ivoire.

Keywords: Import Demand, Income, Relative Price, Cote d'Ivoire

JEL Classification: C22, F10, F40, O24

1. Introduction

Since the works by Orcutt (1950), Houthakker and Magee (1969), Leamer and Stern (1970) and Goldstein and Khan (1985), many empirical studies have estimated import demand functions for developed and developing countries (e.g., Mwegu, 1993 ; Sinha, 1997; Bahmani-Oskooee and Niroomand, 1998; Tang and Nair, 2002; Chimobi and Ogbonna, 2008; Tang, 2003 ; Dutta and Ahmed, 2004; Tsionas and Christopoulos, 2004 ; Chang *et al.*, 2005; Ivohasina and Hamori, 2005; Babatunde and Egwaikhide, 2010; N'Guessan and Yue, 2010; Hye and Mashkoo, 2010; Narayan and Narayan, 2010; Omotor, 2010 ; Fida *et al.*, 2011 ; Modeste, 2011 ; Nwogwugwu, 2015 ; Mugableh, 2017). Most of these studies relied on the standard theory of demand that assumes that import demand function is homogeneous of degree zero in income and prices. This hypothesis implies the absence of money illusion and allows the demand for imports to be expressed as a function of real income and relative price. Such a specification imposes the restriction that the influence of the two price variables are equal in magnitude but opposite in sign. One reason for using relative price specification is to avoid the problem of multicollinearity

that may exist between import and domestic prices. However, if this assumption does not hold, the estimates of income and price elasticities may be misleading (Murray and Ginman, 1976). Given its implications, the traditional import demand function should be tested. A general shortcoming with most existing studies is that they assume price homogeneity without testing this restriction.

The main objective of this short study is to estimate the import demand function for Cote d'Ivoire and test the empirical relevance of the price homogeneity assumption. At the methodological level, we employ the ARDL bounds testing approach to cointegration along with other robust estimation methods that account for endogeneity. The remainder of the paper is organized as follows. Section 2 outlines the econometric methodology employed for the empirical analysis. Section 3 reports the empirical findings of the study. Section 4 concludes the study and provides some policy recommendations.

2. Model, Data and Methodology

2.1 Model Specification

The traditional import demand function is specified as follows :

$$\ln M_t = \beta_0 + \beta_1 \ln Y_t + \beta_2 \ln PD_t + \beta_3 \ln PM_t + \mu_t \quad (1)$$

where $\ln M_t$ is the natural logarithm of real imports of goods and services, $\ln Y_t$ is the natural logarithm of nominal income, $\ln PD_t$ is the natural logarithm of the price of domestically produced goods, $\ln PM_t$ is the natural logarithm of the price of imported goods, and μ_t is the error term which is normally distributed with mean zero and constant variance.

Consistent with demand theory, imports are positively related to real income. An increase in domestic income will lead to a greater demand for foreign goods. On the other hand, a positive coefficient is expected on domestic price variable as domestic prices increase, foreign goods become cheaper and import demand increases. The import price is expected to have negative effect on demand for imports because consumers tend to substitute domestic goods for imports when import price increases.

In Eq.(1), we have used two separate price variables instead of the relative import price, as in Rehman (2007). The standard theory of demand assumes that import demand function is homogeneous of degree zero in prices and income, which implies the absence of money illusion (Deaton and Muellbauer, 1980). Therefore, the demand for import can be expressed in terms of real income and relative price. The restricted import demand function is specified as follows :

$$\ln M_t = \gamma_0 + \gamma_1 \ln Y_t^* + \gamma_2 \ln RP_t + \mu_t \quad (2)$$

where Y^* is real income and RP denotes relative price of imports, which captures the trade-off between imported goods and domestic goods.

Eq.(2) implicitly imposes the restriction that $\beta_1 + \beta_2 + \beta_3 = 0$. When the income variable Y enters in Eq.(1) in real terms, then the relative price formulation *i.e.* price homogeneity hypothesis, imposes the restriction that the effects of import price and domestic price are equal in magnitude but opposite in sign, that is : $\beta_2 + \beta_3 = 0$. The relative price formulation implies that domestic and imported goods are substitutes. As mentioned earlier, the basic specification of import demand, given by Eq. (2), is very popular in international trade studies (see, Narayan and Narayan, 2005; N'Guessan and Yue, 2010; Chani *et al.*, 2011; Bathalomew, 2010; Zhou and Dube, 2011). If the price homogeneity restriction does not hold, it may lead to inappropriate specification and misleading estimates. Murray and Ginman (1976) argued that the weight assigned to some goods may differ between the import price and the domestic price level, and consumers may react differently to a change in import price from the way they would react to an equal but opposite change in the domestic price. Urbain (1993) also stated that modeling the dynamics of imports demand using relative prices implies identical dynamic response of imports to changes in imports prices and domestic prices. This situation is unlikely to hold, as consumers use different information sets to form their expectations about domestic and imports prices. In addition, domestic prices may be less variable than import

prices. A number of studies postulated price homogeneity without providing empirical evidence in support of this restriction. For example, N'Guessan and Yue (2010), Afzal (2001), Chani *et al.* (2011), Bathalomew (2010), Zhou and Dube (2011) and Baek (2015) found nonsignificant effect of relative price on imports. It is clear that if the price homogeneity assumption does not hold, the results from these studies may be questionable.

2.2 Data description

The data set used in this study comprises of real imports (M), income (Y), domestic price index (PD), and import price index (PM). These data were obtained from the 2019 World Development Indicators of World Bank. The sample period spans from 1980 to 2017. Import unit value index (2000=100) was used as a proxy for import price index, GDP deflator (2000=100) was used as a proxy for domestic price index and GDP was used to measure domestic income.

We used the import price index to convert nominal data on imports in constant local currency. Real imports and real GDP were in constant local currency (2000=100). The relative price of imports was calculated as the ratio of import price index to domestic price index. The data are then expressed in natural logarithmic form. This functional form gives elasticity coefficients directly. It also mitigates the problems of outliers, heteroskedasticity and nonnormality. Studies by Doroodian *et al.* (1994), Sinha (1997) and Raijal *et al.* (2000) have performed the Box and Cox (1964) procedure and have shown that the log linear transformation is more effective compared to linear transformation.

The descriptive statistics of the logarithmic transformation of the variables are reported in Table 1. Over the sample period, real imports stood at an average of 28.392 with a standard deviation of 0.410 and a median of 28.486, implying that data was symmetrical. The probability values from the Jarque-Bera statistic suggest that all the variables are normally distributed. The correlation matrix indicates positive relationships among the variables.

Table 1: Descriptive Statistics and Correlation Matrix

Variables	lnM	lnY	lnPD	lnPM
<i>Panel A: Summary statistics</i>				
Mean	28.392	29.476	4.459	4.622
Median	28.486	29.649	4.579	4.605
Maximum	29.081	30.728	5.127	5.369
Minimum	27.205	28.396	3.637	3.871
Std. dev.	0.410	0.706	0.493	0.463
Skewness	-0.618	0.061	-0.211	0.038
Kurtosis	3.253	1.734	1.538	1.786
Jarque-Bera	2.527	2.558	3.665	2.341
Probability	0.282	0.278	0.159	0.310
<i>Panel B: Correlation matrix</i>				
lnM	1.000*			
lnY	0.854*	1.000*		
lnPD	0.846*	0.989*	1.000*	
lnPM	0.575*	0.889*	0.892*	1.000*
<i>Note:</i> M, Y, PD, and PM denote real imports, nominal GDP, domestic price and import price, respectively. (*) indicates statistical significance at the 5% level.				

Figure 1 shows the trends of real imports and real GDP in Cote d' Ivoire over the study period. As can be seen, real GDP shows an upward sloping trend over the sample period. Meanwhile, imports show an upward sloping trend from 1980 to 1985 with an average growth rate of 9.5%. They recorded a sharp decrease from 1985 to 1993 at an annual growth rate of -11.2%. From 1994, imports show an upward trend in line with the devaluation of the country's currency (CFA franc). Beyond 1999, imports remained relatively stable till the year 2005 where they experienced a sharp decrease in the years 2008 and 2011, and then rose from 2012 till 2017. It is worth mentioning that over the period 1999-2011, Cote d'Ivoire experienced economic hardship and social unrest. With the end of

the civil war in 2011, the country embarked on an economic recovery program through the implementation of its National Development Plan coupled with large-scaled structural reforms.

Figure 1 : Trend of real imports and GDP in Cote d'Ivoire over the period 1980-2017.

Table 2 presents the composition of imports by commodity types. Cote d'Ivoire's import basket was dominated by consumer goods up to 2004, though their relative share declined from 46.45 percent in 2002 to 35.86 percent by 2004. During this period, the import of intermediate goods, which was next to consumer goods, averaged 36 percent, while the share of capital goods increased from 17 percent to 28.5 percent. From 2005, the import of intermediate goods dominated aggregate imports up to 2008, with an average of 44 percent, followed by consumer goods which represented 35 percent of imports. From 2010, the import of consumer goods dominated total imports with a share increasing from 39.03 percent in 2010 to 50.7 percent in 2017. On average, 44 percent of Cote d'Ivoire's imports are consumer goods, 31 percent are intermediate goods, and 25 percent are capital goods. These figures clearly show the heavy reliance of the ivorian economy on imported consumer goods to meet the domestic demand of consumers.

Table 2: Structure of imports by commodity types (as share of total imports)

	2002	2004	2006	2008	2010	2012	2014	2016	2017
Consumer goods	46.45	35.86	35.57	39.20	39.03	39.97	39.72	48.23	50.75
Intermediate goods	36.51	35.61	43.72	48.92	35.63	41.60	38.48	29.35	25.26
Capital goods	17.04	28.52	20.70	11.88	25.34	18.43	21.80	22.42	23.99
Total	100	100	100	100	100	100	100	100	100

Source: General Administration of Customs, Cote d'Ivoire.

2.3 Econometric Methodology

The empirical analysis involves a series of steps as described below. As a first step, we test for the order of integration of the series using the PP test of Phillips and Perron (1988). In a second step, we test whether there is a long run relationship among the variables. For this purpose, we employ the Autoregressive Distributed Lag (ARDL) bounds testing approach to cointegration developed by Pesaran *et al.* (2001). This approach has several advantages. The first advantage is that the ARDL bounds test approach is applicable irrespective of whether the underlying regressors are I (0) or I (1). As bounds test does not depend on pre-testing the order of integration of the variables, it eliminates the uncertainty associated with unit root tests in small samples. Secondly, this technique generally provides unbiased estimates of the long run model and valid *t*-statistics even in the presence of endogenous regressors (Inder, 1993; Cheung and Lai, 1993). Mah (2000) argued that the two-step procedure suggested by Engle and Granger (1987) and the multivariate likelihood method of Johansen and Juselius (1990) are not reliable for small sample studies.

To carry out the ARDL cointegration procedure designed by Pesaran *et al.* (2001), Eq.(1) is reformulated into conditional error correction model (ECM) as follows:

(3)

where Δ is the difference operator and $Z_t=(\ln Y_t, \ln PD_t, \ln PM_t)$. The presence of long-run relationship is tested by restricting coefficients of lagged level variables equal to zero. That is, the null hypothesis of no long-run relationship is $H_0: \phi_1=\phi_2=0$. This hypothesis is tested through an *F*-test. The asymptotic critical values are provided by Pesaran *et al.* (2001). The ARDL bounds testing procedure is sensitive to the selection of the lag structure (*m*, *n*). In this study, maximum lag length on each variable was set to five and the optimal lag structure was selected using the AIC criterion. The model has been tested by the diagnostic tests that are serial correlation, normality test and heteroskedasticity test. The stability test of the model has also been undertaken using the Brown *et al.* (1975) cumulative sum of recursive residuals (CUSUM) and the cumulative sum of squares of recursive residuals (CUSUMSQ). Once a long-run relationship is identified among the variables, the estimated long run coefficients are the negative values of the coefficients for the lagged explanatory variable divided by the coefficient for the

lagged dependent variable (Bardsen, 1989; Pesaran *et al.*, 2001). The short run effects are the estimates of coefficients related to first-differenced variables.

3. Empirical Results

The unit root test of Phillips and Perron (1988) with a constant only, and a constant with trend option was used to test the stationarity of the variables. This was done to ensure that none of the variables were integrated of an order exceeding one. The results are displayed in Table 3. As can be seen from this table, the null hypothesis of unit root cannot be rejected whether or not trend is included in the regression. However, first differencing of all the variables yields rejection of the null hypothesis of unit root under both specifications. Based on these results, we can conclude that all the variables we are working with are integrated of order one. The next step is to test for the existence of long run relationships among the variables.

Table 3: Results of Unit Root Tests

Series	Level		First difference	
	C	C&T	C	C&T
lnM	-1.526	-2.768	-7.678*	-7.635*
lnY	0.087	-2.049	-3.869*	-3.847*
lnPD	-1.073	-1.875	-4.166*	-4.175*
lnPM	-0.745	-3.375	-7.624*	-7.511*

Note: M, Y, PD, and PM denote real imports, nominal GDP, domestic price and import price, respectively. The critical values for model with constant (C) and with constant and trend (C&T) at the 5% level are -2.943 and -3.536, respectively. * indicates the rejection of the null hypothesis at 5% level of significance.

To ascertain the existence of a long-run relationship among the variables, the bounds test is employed under the ARDL approach framework. The results are displayed in Table 4. The calculated F-statistics are compared with the critical values provided by Pesaran *et al.* (2001). The results show that a long-run relationship exists among the variables when imports variable is used as dependent variable. In this case, the computed F-statistic exceeds the upper critical value at 5% level of significance. Furthermore, at the 5% significance level, all diagnostic tests do not exhibit any evidence of violation of the classical linear regression model assumptions. The results also suggest a long run relationship when GDP is the dependent variable. We can therefore conclude that there is at least one long run relationship between the variables.

Table 4: Results of the ARDL Cointegration Test

Model	F.stat.	Diagnostic tests		
		Normality	Heteroskedasticity	Correlation
M=f(Y, PD, PM)	8.295*	0.001 [0.999]	9.397 [0.742]	3.232 [0.198]
Y=f(M, PD, PM)	3.353**	0.602 [0.739]	23.537 [0.132]	1.963 [0.374]
Critical values (T=38)				
	Lower bounds I(0)	Upper bounds I(1)		
5%	2.45	3.63		
10%	2.01	3.10		

Note: M, Y, PD and PM denote real imports, nominal GDP, domestic price and import price, respectively. Lag length on each variable was selected using the AIC criterion with maximum lag set to 5. Critical values are those of the model with no intercept and trend. Figures in [.] are *p-values*. * indicates the rejection of the null hypothesis of no cointegration at 5% level of significance.

To crosscheck our results we also carried out the Johansen and Juselius (1990) multivariate trace and maximum eigenvalue cointegration tests. The results provided in Table 5. Trace test statistic shows three cointegration vectors while maximum eigenvalue statistic confirms the presence of one cointegration vector. We can conclude

that both the trace and maximum eigenvalue statistics support the existence of at least one cointegrating relationship between import and its determinants.

Table 5: Results of the Johansen and Juselius Tests for Cointegration

Hypothesis		Trace Test		Max- Eigen Test	
H ₀	H ₁	Statistic	Prob.	Statistic	Prob.
r=0	r=1	53.152*	0.001	25.964*	0.028
r≤1	r=2	27.188*	0.021	14.324	0.154
r≤2	r=3	12.863*	0.041	10.439	0.068
r≤3	r=4	2.423	0.141	2.423	0.141

Note: *r* indicates the number of cointegrating relations. The Akaike information criterion was used to select the number of lags required in the cointegrating test with a maximum set to 5. * indicates the rejection of the null hypothesis at the 5% level.

After finding evidence of cointegration between the variables, we further estimate the long run coefficients associated with each independent variable. To that end, we employ the ARDL approach along with the Fully Modified OLS method proposed by Phillips and Hansen (1990) and the Dynamic OLS technique suggested by Stock and Watson (1993). These three estimation methods account for the possible endogeneity among the variables. We also apply the Johansen and Juselius (1990) multivariate method. The results are reported in Table 6.

Table 6: Long run import demand function using nominal income

Regressor	Dependent variable: LnM							
	ARDL		FMOLS		DOLS		Johansen	
	Coef.	t-stat.	Coef.	t-stat.	Coef.	t-stat.	Coef.	t-stat.
lnY	1.087*	106.03	1.112*	69.410	1.092*	82.012	1.081*	76.671
lnPD	0.353*	2.083	-0.132	-0.742	0.031	0.171	0.403*	2.210
lnPM	-1.150*	-6.473	-0.819*	-4.526	-0.853*	-4.301	-1.160*	-5.971
Homogeneity test								
H ₀ : $\beta_1 + \beta_2 + \beta_3 = 0$	5.095*	[0.000]	-1.843**	[0.074]	3.581*	[0.001]	5.944*	[0.014]

Note: The model estimated is: $\ln M_t = \beta_0 + \beta_1 \ln Y_t + \beta_2 \ln PD_t + \beta_3 \ln PM_t + \mu_t$, where M, Y, PD, and PM denote real imports, nominal GDP, domestic price, and import price, respectively. All models were estimated without a constant term. In Johansen method the optimal lag was set to 3 for the level VAR according to the AIC. The restriction $\beta_1 + \beta_2 + \beta_3 = 0$ implies that the import demand function is homogeneous of degree zero in income and prices. Figures in [.] are *p-values*. The asterisks * and ** denote statistical significance at the 5% and 10% levels, respectively.

To check whether the traditional formulation of import demand is appropriate, we test for the hypothesis of homogeneity of degree zero in prices and income. In the ARDL model, the value of the *t*-statistic is 5.095 with *p-value* of 0.000, implying that the restriction can be rejected. The results from the other estimation methods lead to similar conclusion. Further, we estimate the import demand function using real GDP, domestic price, and import price. The results are reported in Table 7. We test the linear restriction on price variables *i.e.* $\beta_2 + \beta_3 = 0$. In all cases, the assumption of price homogeneity should be rejected, implying that the relative price formulation of import demand is not appropriate in the case of Cote d'Ivoire.

Table 7: Long run import demand function with real income

Regressor	Dependent variable: LnM							
	ARDL		FMOLS		DOLS		Johansen	
	Coef.	t-stat.	Coef.	t-stat.	Coef.	t-stat.	Coef.	t-stat.
lnY	0.908*	111.60	0.928*	73.921	0.913*	85.121	0.904*	77.701
lnPD	1.481*	9.213	1.040*	6.304	1.183*	6.734	1.548*	8.626
lnPM	-1.128*	-6.687	-0.810*	-4.762	-0.850*	-4.445	-1.164*	-6.069
Homogeneity test								
H ₀ : $\beta_2 + \beta_3 = 0$	6.601* [0.000]		2.853* [0.007]		4.629* [0.000]		6.124* [0.013]	

Note: The model estimated is: $\ln M_t = \beta_0 + \beta_1 \ln Y_t + \beta_2 \ln PD_t + \beta_3 \ln PM_t + \mu_t$, where M, Y, PD and PM denote real imports, real GDP, domestic price and import price, respectively. All models were estimated without a constant term. In Johansen method the optimal lag was set to 3 for the level VAR according to the AIC. The restriction $\beta_2 + \beta_3 = 0$ implies that the import demand function is homogeneous in prices. Figures in [.] are *p-values*. The asterisks * denotes statistical significance at the 5% level.

In all models, the long run domestic price elasticity is higher in absolute value than those of real income and import price. This means that import demand responds more much strongly to changes in domestic prices rather than foreign prices and real income. In what follows, we will base our interpretation on the ARDL results. The income level was found to be positively related to import demand, though inelastic in the sense that its elasticity is less than one. Other things remain the same, one percent increase in real income induces growth in import demand by 0.9 percent. The inelastic long run income elasticity implies that imports are regarded as necessary goods in Cote d'Ivoire. The coefficient on domestic price is expectedly positively signed and significant. Thus, one percent increase in domestic price is likely to induce a 1.5 percent increase in imports. The effect of import price is also consistent with *a priori* expectations and statistically significant. Thus, one percent increase in import price induces a 1.2 percent decrease in imports.

The existence of long run relationships between imports and its determinants provides support for the estimation of the short run dynamic model for import demand function. The short run elasticities of import demand with respect to real GDP, domestic and import prices are reported in Table 8. The coefficient on the lagged error term is significant with the expected negative sign, supporting the evidence of a long-run relationship among the variables. The results also show that real income is a major factor influencing short-run import growth. In other words, economic growth is playing a significant role in explaining aggregate import demand for goods and services in Cote d'Ivoire. This finding is consistent with the Keynesian absorption theory. The short run effect of domestic price is positively significant and greater than that of real income. Therefore, in the short run the growth rate of imports is positively affected by growth in domestic price. On the contrary, import price is negatively related to import growth in the short run.

Table 8: Short run import demand function

Regressor	Dependent variable: $\Delta \ln M$		
	Coef.	t-stat.	Prob.
$\Delta \ln Y$	1.043*	3.265	0.002
$\Delta \ln PD$	1.365*	6.853	0.000
$\Delta \ln PM$	-0.978*	-9.848	0.000
ECT(-1)	-0.289*	-2.181	0.037
Diagnostic tests			
Serial correlation	0.856 [0.651]		
Heteroscedasticity	7.505 [0.111]		
Normality	0.280 [0.869]		

Note: M, Y, PD and PM denote real imports, real GDP, domestic price and import price, respectively. Figures in [.] are *p-values*. The asterisks * denotes statistical significance at the 5% level.

4. Conclusion and policy implications

This study has estimated the import demand function for Cote d'Ivoire based on annual data for the period 1980 to 2017. It used the autogressive distributed lag (ARDL) approach and other estimation methods that account for endogeneity. The results show that there exists a long-run relationship between import demand and domestic income, domestic and import prices. We tested the relevance of the price homogeneity hypothesis postulated in most empirical studies. The empirical results show that, in the case of Cote d'Ivoire, the relative price formulation of the traditional import demand function is not appropriate for estimating income and price elasticities of import demand. Therefore, estimates for policy purpose from earlier studies that did not test the relative price formulation, may be questionable. As far as the size of the estimated elasticities are concerned, the income elasticity in long run was found inelastic. Therefore, imports are treated as necessary goods in Cote d'Ivoire. Furthermore, consumers are more responsive to changes in the price of domestic goods than to the price of imported goods. An increase in domestic price level generates higher imports while an increase in import price reduces imports. This provides additional evidence in favor of controlling inflation rate. In addition, our findings imply that trade policies that aim to lower or remove tariff barriers will lead to a rise in imports. This study is the first of its kind which investigates the relevance of price homogeneity hypothesis in the case of African countries.

Our empirical analysis was conducted using the traditional import demand formulation which relies on income and prices as the main determinants of imports. To increase our knowledge on import demand, study should be carried out testing other influencing factors. Moreover, we have used aggregate GDP as a proxy for income in the import demand function. Using this variable we cannot know whether different components of final expenditure have different import contents. Therefore, it will be informative to disaggregate GDP into different components and estimate the effect of each component on imports. We intend to examine these issues in future researches.

References

- Afzal, M. (2001). Import Function for Pakistan: A Simultaneous Equation Approach. *The Lahore Journal of Economics*, 6(2), 109-116.
- Babatunde, M. A. & Egwaikhide, F. O. (2010). Explaining Nigeria's Import Demand Behaviour: A Bound Testing Approach. *International Journal of Development Issues*, 9(2), 167-187.
- Baek, J. (2015). Empirical Evidence on Korea's Import Demand Behavior Revisited. *Research in Applied Economics*, 7(2), 11-20.
- Bahmani-Oskooee, M. & Niroomand, F. (1998). Long-run price elasticities and the Marshall-Lerner condition revisited. *Economics Letters*, 61(1), 101-109.
- Bardsen, G. (1989). Estimation of Long-run Coefficients in Error Correction Models. *Oxford Bulletin of Economics and Statistics*, 51, 345-350.
- Bathalomew, D. (2010). An Econometric Estimation of the Aggregate Import Demand Function for Sierra Leone. *Journal of Monetary and Economic Integration*, 10(1), 5-24.
- Box, G. E. P. & Cox, D. R. (1964). An Analysis of Transformations. *Journal of the Royal Statistical Society (Series B)*, 26, 211-243.
- Brown, R.L., J. Durbin & Evans, J. M. (1975). Techniques for Testing the Constancy of Regression Relations Over Time. *Journal of the Royal Statistical Society*, 37, 149-92.
- Chani, M. I., Pervaiz, Z. & Chaudhary, A. R. (2011). Determination of Import Demand in Pakistan : The Role of Expenditure Components. *Theoretical and Applied Economics*, XVIII (8), 93-110.
- Chang, T., Y. Ho & Huang, C. (2005). A Re-examination of South Korea's Aggregate Import Demand Function: A Bounds Test Analysis. *Journal of Economic Development*, 30(1), 119-128.
- Chimobi, O. P. & Ogbonna, B. C. (2008). Estimating Aggregate Import Demand Function in Nigeria: A Co-integration Approach. *Journal of Research in National Development*, 6(1), 170-182.
- Cheung, Y. & K. S. Lai, (1993). Finite-Sample Sizes of Johansen's Likelihood Ratio Test for Cointegration. *Oxford Bulletin of Economics and Statistics*, 55(3), 313-328.
- Deaton, A. & Muellbauer, J. (1980). *Economics and Consumer Behaviour*. Cambridge: Cambridge University Press.
- Doroodian, K., R. K. Koshal, & Al-Muhanna, S. (1994). An Examination of the Traditional Aggregate Import Demand Function for Saudi Arabia. *Applied Economics*, 26, 909-915.
- Dutta, D. & Ahmed, N. (2004). An Aggregate Import Demand Function for India: A Cointegration Analysis.

- Applied Economics Letters*, 11(10), 607-613.
- Fida, B.A., Khan, M. M. & Sohail, M. K. (2011). Revisiting Aggregate Import Demand Function in Pakistan using ARDL Methodology. *American Journal of Scientific Research*, 33, 5-12.
- Goldstein, M. & M.S. Khan (1985). Income and Price Effects in Foreign Trade, in R.W. Jones and P.B. Kenen (eds.), *Handbook of International Economics*, Vol.2, North-Holland, Amsterdam.
- Houthakker, H. S. & Magee, S. P. (1969). Income and Price Elasticities in World Trade. *Review of Economics and Statistics*, 51(2), 111-125.
- Hye, Q. M., & Mashkooq, M. (2010). Import Demand Function For Bangladesh: A Rolling Window Analysis. *African Journal of Business Management*, 4 (10), 2150-2156.
- Inder, B. (1993). Estimating Long-run Relationships in Economics: A Comparison of Different Approaches. *Journal of Econometrics*, 57, 53-68.
- Ivoahasina F. R. & Hamori, S. (2005). Import Demand Function: Some Evidence from Madagascar and Mauritius. *Journal of African Economies*, 14(3), 411-434.
- Johansen, S. & Juselius, K. (1990). Maximum Likelihood Estimation and Inference on Cointegration with Applications to the Demand for Money. *Oxford Bulletin of Econometrics and Statistics*, 52, 169-210.
- Leamer, E. E. & R. M. Stern (1970). *Quantitative International Economics*. Allyn and Bacon Inc., Boston, p.222.
- Mah, J.S. (2000). An Empirical Examination of the Disaggregated Import Demand of Korea: The Case of Information Technology Products. *Journal of Asian Economics*, 11, 237-244.
- Modeste, N. C. (2011). An Empirical Analysis of the Demand for Imports in Three CARICOM Member Countries: An Application of the Bounds Test for Cointegration. *Review of Black Political Economy*, 38, 53-62.
- Mugableh, M. I. (2017). Estimating Elasticity Function of Jordanian Aggregate Import Demand. *Applied Economics and Finance*, 4(2), 33-37.
- Murray, T. & Ginman, P. (1976). An Empirical Examination of the Traditional Aggregate Import Model. *The Review of Economics and Statistics*, 58, 75-80.
- Mwega, F. M. (1993). Import Demand Elasticities and Stability during Trade Liberalization: A Case Study of Kenya. *Journal of African Economies*, 2, 381-416.
- Narayan, S. & Narayan P. K. (2005). An Empirical Analysis of Fiji's Import Demand Function. *Journal of Economic Studies*, 32(2), 158-168.
- Narayan, S. & Narayan, P. K. (2010). Estimating Import and Export Demand Elasticities for Mauritius and South Africa. *Australian Economic Papers*, 49(3), 241-252.
- N'Guessan, C. Z. S. & Yue, Y. (2010). An Econometric Estimation of Import Demand Function for Cote d'Ivoire. *International Journal of Business and Management*, 5(2), 77-84.
- Nwogwugwu, U. C., Maduka, A. C. & Madichie, C. V. (2015). Price and Income Elasticities of Import Demand in Nigeria: Evidence from the Bound Testing Procedure. *International Journal of Development and Economic Sustainability*, 3(4), 91-103.
- Omotor, D. (2010). An Aggregate Import Demand Function for Nigeria. *Economic Research* 562(1), doi: 10.1080/1331677X.2010.11517397.
- Orcutt, G. H. (1950). Measurement of Price Elasticities in International Trade. *Review of Economics and Statistics*, 32, 117-132.
- Pesaran H., Shin, Y. & Smith, R. J. (2001). Bounds testing approaches to the analysis of level relationships. *Journal of Applied Econometrics*, 16(3), 289-326.
- Phillips, P.C.B. & Hansen, B. E. (1990). Statistical Inference in Instrumental Variables Regression with I(1) Process. *The Review of Economic Studies*, 57, 99-125.
- Phillips, P. C. B. & Perron, P. (1988). Testing for a Unit Root in a Time Series Regression. *Biometrika*, 75(2), 335-346.
- Raijal, A., R. K. Koshal & Jung, C. (2000). Determinants of Nepalese Imports. *Journal of Asian Economics*, 11, 347-54.
- Rehman, H. U. (2007). An Econometric Estimation of Traditional Import Demand Function for Pakistan. *Pakistan Economic and Social Review*, 45(2), 245-256.
- Sinha, S. (1997). Determinants of Import Demand in Thailand. *International Economic Journal*, 11(4), 73-83.
- Stock, J. & Watson, M. W. (1993). A simple estimator of cointegrating vectors in higher order integrated systems. *Econometrica*, 61(4), 783-820.
- Tang, T. C. & Nair, M. (2002). A Cointegration Analysis of Malaysian Import Demand Function: Reassessment from the Bounds Test. *Applied Economics Letters*, 9(5), 293-296.
- Tang, T. C. (2003). An Empirical Analysis of China's Aggregate Import Demand Function. *China Economic Review*, 14(2), 142-163.
- Tsionas, E. G. and Christopoulos, D. K. (2004). International Evidence on Import Demand. *Empirica*, 31(1), 43-53.
- Urbain, J. P. (1993). *Exogeneity in Error Correction Models*. Springer-Verlag, Berlin Heidelberg, New York.
- Zhou, Y. & Dube, S. (2011). Import Demand Functions: Evidence from CIBs. *Journal of Economic Development*, 36(4), 73-96.

Analysis of *Murabaha* Financing from Influence of Asset, Deposit Fund, and Profitability

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Abstract

This study aims to determine the effect of financing to deposit ratio (FDR), DPK, return on assets (ROA), non performing financing (NPF), capital adequacy ratio (CAR), and operational efficiency ratio (BOPO) on *murabaha* financing (MF). The population in this study is an Islamic commercial bank during the period 2012-2017, from all populations, there are 11 Islamic commercial banks which have criteria to be used as research samples. Data used in this research are annual financial statements published on the official website of Islamic commercial bank. The analysis technique used in this research is multiple linear regression analysis. The results of this study indicate that the FDR has no significant effect on *murabaha* financing; DPK (DPK) has a significant positive effect on MF; ROA has no significant effect on MF; NPF has a significant positive effect on MF; CAR has no significant effect on MF; and BOPO has no significant effect on MF.

Keywords: FDR, DPK, ROA, NPF, CAR, Operational Efficiency Ratio, *Murabaha* Financing

1. Introduction

The economic of a country is built on two sectors, the real and monetary sectors. The real sector is the economic sector that depends on the manufacturing and service sectors, while the monetary sector depends on the banking sector (Adeusi, Aluko, & others, 2015). According to Alam, Gupta, & Shanmugam, (2017) bank that based on service payment systems are divided into two, namely "Banks based on interest payments (conventional) and banks based on payments in the form of profit-sharing (sharia)." Mansour, Ben Jedidia, & Majdoub (2015) explains that Islamic banks are "banks that operate by not trading interest. In other words, Islamic banks are financial institutions whose main business is providing financing and other services in the payment and circulation of money with their operations are adjusted to sharia principles". Islamic banking is the development of Islamic economic concepts, especially in the financial sector which was developed as a response to Muslim economists and banking

practitioners who try to accommodate pressure from various parties who want financial transaction services to be run with moral values and principled sharia (Islam & Ashrafuzzaman, 2015). The development of Islamic banking in Indonesia shows an increasing trend. Based on sharia banking statistics from year to year in quantity, the achievement of Islamic banking continues to increase. Regarding capital sources in Islamic Banks in Indonesia, all Islamic Banks are subsidiaries of Conventional Banks except Bank Muamalat (Nugroho, Utami, Doktoralina, & Husnadi, 2017), but there were differences in efficiency, asset quality, and stability between Islamic Banking and Conventional Banking where conventional banking more efficient, have better asset quality and more stability than sharia banking (Elsa et al., 2018).

With a variety of banking products and services, Islamic banking has become a popular choice among various groups of people. Starting from savings, checking and deposit funds, to financing services with the principles of *mudharabah*, *murabahah*, *musyarakah*, and other services (Harianto, Mizan, Al Amin, & Meilvinasvita, 2019). One of the most popular forms of Islamic Bank financing in the community is *MF*. Yaya, Martawireja, & Abdurahim (2014) explain that *murabaha* is a transaction of selling goods by stating the acquisition price and profit margin agreed upon by the seller and the buyer. Contract payments for buying and selling can be made in cash (*Bai 'Naqdan*) or respite (*Bai ' Mu 'ajjal / Bai 'Bi 'tsaman Ajil*). Many criticisms aimed at Islamic banking in the matter of determining profit margins, because *MF* products are similar to flat interest credit financing products in conventional banks (Brown Jr, 2015).

Ali & Miftahurrohman, (2016) said that the *Murabaha* agreement allows different price quotes for different payment prices before the *murabahah* agreement is carried out. When the contract has been agreed upon, then there is only one price (price in the contract used). According to Anjani & Hasmarani (2016), the benefits that will be obtained for banks by the existence of *MF*, such in principle is a channel for channeling bank funds quickly and easily. The bank earns profit, to be specific margin from financing and obtains fee-based income (administration, insurance commission, and notary commission). Income earned from *MF* is called margin income. Margin in the world of Islamic banking is a term used to indicate income derived from the difference in selling prices and buying prices on a sale and purchase contract (Januari, 2015). The following is a table that shows statistical financing data by Sharia Rural Banks:

**Table 1 Financing Provided by Sharia Community Financing Banks
(In million Rupiah)**

Akad	2014	2015	2016	2017
<i>Mudharabah</i>	122,467	168,516	156,256	124,497
<i>Musyarakah</i>	567,658	652,316	774,949	776,696
<i>Murabahah</i>	3,965,543	4,491,697	5,053,764	5,904,751
<i>Salam</i>	16	15	14	0
<i>Istishna</i>	12,881	11,135	9,423	21,426
<i>Ijarah</i>	5,179	6,175	6,763	22,316
<i>Qardh</i>	97,709	123,588	145,865	189,866
Lainnya	233,456	311,729	515,523	724,398
Total	5,004,909	5,765,171	6,662,556	7,763,950

Source: The Financial Services Authority (OJK); Sharia Banking Statistic 2017

From table 1 it can be seen that *MF* dominates the financing of Islamic banking in Indonesia. In 2016, *MF* amounted to Rp 5,053,764 million. While *mudharabah* financing is Rp 156,256 million, and *musyarakah* financing is Rp 774,949 million. In 2017, *MF* amounted to Rp 5,904,751 million, while *mudharabah* financing amounted to Rp 124,497 million, and *musyarakah* financing amounted to Rp 776,696 million. In addition to the high *MF* compared to other financings, it turns out there are also sharia commercial banks whose *MF* products have

declined and tend to be lower than musyarakah and mudharabah financing. Based on data obtained from Bank Victoria Syariah, it can be seen that in 2017 the amount of musyarakah financing amounted to Rp 91,073,496,425 far higher than MF, which amounted to only Rp 25,332,378,995. The amount of Bank Panin Syariah's musyarakah financing in 2017 amounted to Rp 508,111,936,000, far higher than MF, which was only Rp 135,487,534,000. In 2014-2016, the number of Maybank Syariah MF decreased from Rp 23,302,000,000 to Rp 46,084,000,000. Bank Mega Syariah in 2013-2017 amounting to Rp 1,213,052,882,000, which decreased to Rp 505,321,921,000. Victoria Syariah Bank from 2014 to 2016 decreased from Rp 75,787,171,602 to Rp 29,043,474,457.

Siagian, Budiman, & Kismawadi (2017) argues that many factors influence banks in channeling financing, both internal and external factors. To see the internal conditions of the company, banks usually refer to the bank financial statements indicated by various financial ratios (Rustam, 2013). In this study, the independent variable uses factors originating from the internal company, which are the bank's financial ratios including: FDR, Third-party Funds (DPK), ROA, NPF, CAR, and BOPO.

According to Husaeni (2016), FDR is a ratio used to measure the level of bank liquidity that shows the ability of banks to fulfill loan demand using the bank's total assets. FDR is how much DPK Islamic banks are released for financing (Harianto et al., 2019), the value permitted by Bank Indonesia is in the range of 78% to 100% (Husaeni, 2016). Ali & Miftahurrohman, (2016) said that DPK are funds obtained from the community, in the sense that the community as individuals, companies, governments, households, cooperatives, foundations, etc. are either in rupiah or foreign currency. The source of funds from DPK collected is the largest funds that are most relied on by the bank from all funds managed by the bank (Fauzan, 2017). According to Alam, Gupta, & Shanmugam, (2017), DPK are a source of funds originating from the community collected through wadiah demand deposits, mudharabah savings, and mudharabah deposits. Any increase in DPK can increase the amount of funds channeled to the community (Pilbeam, 2018). Capital and profit have a significant influence in increasing financing expansion in Islamic Bank. Also, the price of the number of bad debts causes the lack of public confidence in the Islamic bank (Nugroho et al., 2017).

ROA is a ratio to measure the level of profit against assets used in generating profits. Or in other words, ROA is an indicator of a business unit to earn profits on a number of assets owned by the business unit (Huang, 2019). According to Pilbeam (2018), ROA is a ratio used to measure the ability of bank management to obtain overall profits. The greater the ROA, the greater the level of profit achieved by the bank, and the better the company's performance.

Yanti (2018) argue that NPF is an indicator used to show losses due to financing risks. The higher the NPF level in the bank, the bank will behave conservatively towards financing, and the impact is to reduce the amount of financing from the amount of financing previously channeled. Then, according to Ali & Miftahurrohman, (2016), in order to maintain the security of depositors' funds, the central bank requires commercial banks to provide reserves for eliminating non-performing loans. Thus, the greater the number of non-performing loans owned by banks, the greater the amount of reserve funds that must be immediately provided, and the greater the costs they must bear to hold the reserve funds. CAR is a bank's performance ratio to measure the capital adequacy of a bank to support assets that contain or produce risks, for example, the financing provided (Ali & Miftahurrohman, 2016). Ali & Miftahurrohman, (2016) states that the BOPO ratio is the ratio used to measure the level of efficiency of a bank, this ratio compares operational costs with operating income. The higher the BOPO ratio reflects the low level of efficiency of a bank. Operational costs are costs incurred by banks for bank operating costs, not including profit sharing from DPK. Operating income is the income received by the bank after deducting the distribution of income to DPK (Irwan, 2017).

Several studies related to MF have been carried out. Research conducted by Ali & Miftahurrohman, (2016) uses variable DPK, NPF, and ROA. The result shows that variable DPK and ROA give a positive significance influence to MF. Whereas NPF impacting the MF negatively. Yanis (2015) shows that DER, DPK, FDR, Current Ratio (CR), and ROA have a positive significance influence on MF.

Masudah (2017) proves that DPK, exchange rates, BOPO, and interest rates affect the volume of financing in Islamic banks. Another study proves that the level of problematic financing (NPF) and inflation did not affect the volume of sharia commercial bank financing. BOPO has no influence on the amount of financing distribution (Ali & Miftahurrohman, 2016). The results of research conducted by Husaeni (2017) state that there is a significant influence between FDR on MF. While Siagian et al., (2017) proves that the influence of FDR does not significantly influence MF, the results of research from Ali & Miftahurrohman, (2016) show that ROA has a positive effect on MF, whereas in Dyatama & Yuliadi, (2015) ROA had a negative effect on financing.

From the description of the background as mentioned above, as well as the differences in the results of previous studies, this study want to know the effect of FDR, DPK, ROA, NPF, CAR and BOPO on MF, with the data research period from 2012 to 2017.

2. Hypothesis

Judging from the problem from the background and the existence of differences from several previous studies, the hypothesis proposed in this study are as follows:

H₁: FDR gives a positive effect on MF.

H₂: DPK (DPK) gives a positive effect on MF.

H₃: Return On Assets (ROA) gives a positive effect on MF.

H₄: Non-Performing Financing (NPF) gives a positive effect on MF.

H₅: Capital Adequacy Ratio (CAR) gives a positive effect on MF.

H₆: Operational Efficiency Ratio (BOPO) gives a positive effect on MF.

3. Method

The population in this study is Islamic commercial banks during the period 2012-2017, using 66 total research data because of the incorporation of time series data with cross-sections also called panel data (Ullah & Giles, 2016). The sample in this study was determined using purposive sampling which limits the selection of samples based on certain criteria: 1) Commercial Banks using sharia principles, 2) Sharia Commercial Banks that issues financial reports (in annual) for the period 2012-2017 and has been published in the website of Bank Indonesia, Service Authority Finance, or in the website of each Islamic banks, and 3) Having the availability of data related to the variables used for research. To achieve the objectives in this study, the classical assumption test was carried out, to ascertain whether multiple linear regression models were used with no problems of normality, multicollinearity, heteroscedasticity, and autocorrelation. The aim is to guarantee that the regression equation obtained has accuracy in estimation, is not biased and consistent (Darmawan, 2013). Test of significance (real effect) of independent variables (X_1) on the dependent variable (Y) either jointly or partially on hypothesis 1 (H₁) to hypothesis 6 (H₆) is done by F-test and t-test at the level of 5% ($\alpha = 0.05$).

3.1 Dependent Variable

3.1.1 Murabahah Financing

MF is the transaction of sale of goods by stating the acquisition price and profit (margin) agreed upon by the seller and the buyer.

Financing murabahah = Total murabahah margin income at the end of the year

3.2 Independent Variables

3.2.1 Financing to Deposit Ratio (FDR)

FDR is how much DPK Islamic banks are released for financing.

$$FDR = \frac{\text{Total Financing}}{\text{Total Third Fund Party}} \times 100\%$$

3.2.2 Third Party Fund (DPK)

DPK is funds obtained from the community, in the sense of the community as individuals, companies, governments, households, cooperatives, foundations, etc. both in rupiah or foreign currency.

DPK = Savings + Current + Deposits.

3.2.3 Return on Asset (ROA)

Asset reflected in ROA, which measures the effectiveness of companies in utilizing all resources to measure the ability to generate profits. The higher the ratio, the more effective the use of assets to earn income, and the better performance of the bank.

$$ROA = \frac{\text{Earning After Tax}}{\text{Average total asset}} \times 100\%$$

3.2.4 Non-Performing Financing (NPF)

Management showed by NPF, which measures non-performing loans consisting of loans classified as substandard, doubtful, or loss. The smaller this ratio it means that the bank's performance is getting better.

$$NPF = \frac{\text{Financing (KL,D,M)}}{\text{Total Financing}} \times 100\%$$

3.2.5 Capital Adequacy Ratio (CAR)

Capital has shown in CAR, the bank's ability to offset the decline in assets because losses on bank assets use their own capital. The greater the ratio means, the better the bank's CAR.

$$CAR = \frac{\text{Bank Capital}}{\text{Total ATMR}} \times 100\%$$

3.2.6 Rasio Efisiensi Operasional (BOPO)

Operating Cost/Expense to Operating Income Ratio (BOPO), often called the efficiency ratio, is used to measure the ability of bank management to control operational costs against operating income.

$$BOPO = \frac{\text{Operating Expense}}{\text{Operating Income}} \times 100\%$$

To test the determinant variabel (FDR, DPK, ROA, NPF, CAR dan BOPO) MF , use the multiple regression analysis with the following models:

$$PBM = \alpha + \beta_1 FDR + \beta_2 DPK + \beta_3 ROA + \beta_4 NPF + \beta_5 CAR + \beta_6 BOPO + e$$

Information:

PBM = Amount of MF

α = Constant

$\beta_1 FDR$ = Financing to Deposit Ratio (FDR)

$\beta_2 DPK$ = Third Party Fund (DPK)

$\beta_3 ROA$ = Return on Asset (ROA)

$\beta_4 NPF$ = Non Performing Financing (NPF)

$\beta_5 CAR$ = Capital Adequacy Ratio (CAR)

$\beta_6 BOPO$ = Operational Efficiency Ratio (BOPO)

e = Standard Error

4. Results and Discussion

4.1 Descriptive Statistics

Table 2 shows descriptive statistics for each research variable, MF, FDR, DPK, ROA, NPF, CAR, and BOPO.

Table 2 Descriptive Statistics

	N Statistic	Minimum Statistic	Maximum Statistic	Mean Statistic	Std. Deviation Statistic
Murabahah	66	23.96	29.10	26.6750	1.47430
FDR	66	.719	1.977	.94712	.193654
DPK	66	26.38	31.83	29.3766	1.39685
ROA	66	-.201	.055	.00433	.034748
NPF	66	.000	.440	.04795	.067002
CAR	66	.111	.758	.22205	.131408
BOPO	66	.408	2.174	.94589	.256339
Valid N (listwise)	66				

Source: Data Processed

Table 2 shows that the number of data for each variable is 66. The maximum value for MF is 29.10 in Bank Syariah Mandiri in 2017 with the amount of Rp 4,335,905,000,000. The MF average shown in the table is 26.6750 and has a standard deviation or a deviation of 1.47430. This shows that the greater the MF carried out by a sharia commercial bank will affect the profit that will be generated by the Islamic bank. The high mean value compared to standard deviation shows that MF, which is used as a research sample, is well distributed. FDR shows that the mean is 0.94712, and the standard deviation is 0.193654. This shows that the greater the FDR, the higher the problematic financing, and high non-performing loans causes banks to be more careful in channeling financing.

The average third party fund owned is 29.3766. For maximum data of 31.83 in Bank Syariah Mandiri in 2017, the amount of Rp 66,719,098,000,000 shows that the level of public trust in Islamic Commercial Banks is increasing, so that DPK owned are also high. The average fund allocation in MF shows that the bank has been quite good in carrying out its intermediary function because in addition to mudharabah financing and musyarakah financing, collected deposits are also channeled in other forms of financing such as murabaha which occupies the largest portion of financing in Islamic banks.

It can be seen the mean ROA owned by 0.00433%, which means that the bank's profit is low. The greater the ROA owned by the company; the more efficient use of assets will increase profits. This also has a positive impact on the distribution of funds or financing issued by Islamic banks to the community, because the management of company assets can be carried out efficiently so that the company's assets can be managed in distributing revenue sharing funds to customers.

The value of NPF has a mean of 0.04795 which is below the maximum limit set by BI, which is above 5%, this indicates that Sharia Commercial Bank is included in the category of healthy banks. The smaller the NPF ratio, the better the health level of a bank. The lack of troubled financing proves that Islamic banks have been able to maintain the stability of their funds, whereas the high NPF indicates the lower ability of banks to collect back the expenditures.

From the results of testing descriptive statistics, the CAR variable has a minimum value of 0.111 for Bank Bukopin Syariah in 2013 because in that year Bank Bukopin experienced lower growth because foreign capital (long term) was lower than its own capital. While the maximum value is 0.758 for Bank Maybank Syariah in 2017 because long-term capital has increased significantly compared to the following year, which has declined because the proportion between long-term and equity in investment funding has increased. The average value of CAR is 0.22205, and the size of the data distribution is from the average (standard deviation) of 0.131408. From the results of testing the descriptive statistics of BOPO has a minimum value of 0.408 in Bank Panin Syariah in 2012. The maximum value is 2,174 in Panin Syariah Bank in 2017. The average value is 0.94589, with a standard

deviation of 0.256339. It is seen that the average value is greater than the standard deviation value, it can be said that the BOPO variable has a large distribution so that it can be said to be good.

Based on the mean of all variables, it can be concluded that the results of the descriptive statistical tests show Islamic banking with high FDR, CAR, and Rasio Efisiensi Operasional (BOPO, Third Party fund (DPK), Return On Asset (ROA) and low NPF will offer large MF.

4.2 Classic Assumption Test

- Multicollinearity Test. The tolerance value of all independent variables is greater than 0.10, so the VIF values are all less than 10. Thus, it can be concluded that the regression model does not indicate the presence of multicollinearity.
- Autocorrelation Test. The Durbin-Watson value of the multiple regression equation is 0.826, where it is located between -2 to 2, so there is no autocorrelation.
- Heteroscedasticity Test. Heteroscedasticity test is done by looking at scatterplot graph patterns that spread above and below number 0 on the Y-axis. The results of the scatterplot graph show no specific patterns, so it can be concluded that this study does not have heteroscedasticity.
- Normality Test. This study uses the Kolmogorov-Smirnov statistical test with a Z value of 0.912 with $Asymp.sig (2-tailed) > \alpha$. Then it can be concluded that the data has a normal distribution because the Kolmogorov-Smirnov value has a significance level of $0.401 > 0.05$.

4.3 Goodness of Fit

Goodness of fit used to test the effect of independent variables consisting of FDR, DPK, ROA, NPF, CAR, and BOPO towards MF in sharia commercial banks in Indonesia. The results of the model conformity test analysis, F count value is $55.681 > F$ table 2.37 with a significance level of 0.000, because the probability of significance is much smaller than 0.05 ($\alpha = 5\%$), so the regression model can be used to predict MF.

4.4 Coefficient of Determination (R^2)

The coefficient of determination is used to determine the percentage contribution of independent variables consisting of FDR, DPK, ROA, NPF, CAR, and BOPO together to influence MF in Islamic banking in Indonesia. Based on the results of multiple linear regression calculations, the coefficient of determination (Adjusted R Square) is 0.835. This shows that 83.5% of MF variables can be explained by variations of the six independent variables FDR, DPK, ROA, NPF, CAR, and BOPO. And the remaining 16.5% is explained by other variables not found in this study.

4.5 Hypothesis Test Results (t-test)

Hypothesis testing in this study is used to test the significance of the influence of partially independent variables on the dependent variable. The results of hypothesis testing of each variable can be found through the table below:

Table 3 Hypothesis Testing Results
Coefficients^a

Model	Unstandardized Coefficients		Standardized Coefficients		
	B	Std. Error	Beta	t	Sig.
1 (Constant)	-3.968	2.420		-1.639	.106
FDR	.498	.519	.065	.960	.341
DPK	1.025	.071	.971	14.430	.000
ROA	7.486	6.079	.176	1.231	.223
NPF	4.763	2.190	.216	2.175	.034
CAR	.482	.871	.043	.553	.582
BOPO	-.313	.671	-.054	-.466	.643

a. Dependent variable: Murabaha

Source: Data Processed

Based on the table it can be seen that FDR has a significance value of $0.341 > 0.05$ or the value of t count $0.960 < t$ table 1.997 so it can be concluded that the H_1 hypothesis is rejected or the FDR variable does not significantly influence MF. The increase or decrease in FDR during the study period did not have a significant effect on the amount of financing channeled.

Third-party fund variables have a value of t count $14.430 > t$ table 1,997 with a significance level of $0.00 < 0.05$ so that it can be concluded that the H_2 hypothesis is accepted or the third party funding variable has a significant positive effect on MF. This means that every increase in the number of deposits deposited or collected in Islamic banks, the greater the MF will be channeled. This is because one of the bank's goals is to get a profit so that the bank will not just idle funds. Banks tend to channel their funds to the maximum extent possible to obtain maximum profits.

The ROA variable has a value of t count $1.231 < t$ table 1.997 with a significance level of $0.223 > 0.05$, so it can be concluded that the hypothesis H_3 is rejected or the variable ROA does not significantly influence MF. This means that the profits obtained by the bank are not channeled to MF because most of the funds channeled to MF come from DPK. Based on the results of the study, the average value of the ROA variable is 0.00238. This means that the small average value becomes a non-influential cause of Return on Asset towards MF.

The NPF variable has a value of t count $2.175 > t$ table 1.997 with a significance level of $0.034 < 0.05$ so it can be concluded that the hypothesis H_4 is accepted or the variable NPF has a significant positive effect on MF. This means that NPF indicates that the lower the level of non-performing loans in bank credit processing it will increase the level of bank MF. If NPF is high, it can be seen that the bank is very weak in analyzing loan applications and credit monitoring systems.

Variable CAR has a value of t count $0.553 < t$ table 1.997 with a significance level of $0.582 > 0.05$, so it can be concluded that the hypothesis H_5 is rejected or the variable CAR does not significantly influence MF. Characteristically, the management of Islamic banking in Indonesia is generally very careful in managing risks arising from assets. This means that when banks allocate more capital to protect risk-bearing assets, the portion for financing will decrease, and vice versa when there is not too much reserves for ATMR, the portion used for financing will be a lot.

The BOPO variable has a value of t count $-0.466 < t$ table 1.997 with a significance level of $0.643 > 0.05$ so it can be concluded that hypothesis H_6 is rejected or the variable BOPO does not significantly influence MF. This is because the efficiency level of the bank in carrying out its operations affects the income generated by the bank. The size of the BOPO ratio is also due to the high cost of funds collected and the low-interest income from the investment of funds so that the greater the BOPO, the smaller the MF channeled.

5. Conclusion and Suggestion

Based on the results of analysis and discussion, the conclusions that can be taken are as follows: (1) FDR has no significant effect on MF. (2) DPK (DPK) have a positive and significant effect on MF. (3) ROA does not have a significant effect on MF. (4) NPF has a positive and significant effect on MF. (5) CAR has no significant effect on MF. (6) BOPO has no significant effect on MF. Based on the results of the discussion and conclusions of the research results, the suggestions that can be given to improve further research include: (1) Islamic banking needs to consider banking performance before deciding on an option in one of the Islamic banking in Indonesia by taking into account variable financial ratios in this study or those not included in the study. (2) Efforts need to be made to educate the public about products for raising funds in Islamic banking. This was done in order to increase the contribution of Islamic banking in driving the real sector while at the same time changing the perception of the public who thought those Islamic bank products were the same as conventional bank products.

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References

- Adeusi, S. O., Aluko, O. A., & others. (2015). Relevance of financial sector development on real sector productivity: 21st century evidence from Nigerian industrial sector. *International Journal of Academic Research in Business and Social Sciences*, 5(6), 118–132.
- Alam, N., Gupta, L., & Shanmugam, B. (2017). *Islamic Finance: A Practical Perspective*. Springer. <https://doi.org/10.1007/978-3-319-66559-7-1>
- Ali, H., & Miftahurrohman, M. (2016). Determinan yang Mempengaruhi Pembiayaan Murabahah Pada Perbankan Syariah di Indonesia. *Esensi: Jurnal Bisnis Dan Manajemen*, 6(1), 31–44.
- Anjani, R., & Hasmarani, M. I. (2016). Pengaruh pembiayaan mudharabah, musyarakah dan murabahah terhadap profitabilitas BPRS di Indonesia periode 2012-2015. In *Seminar Nasional dan The 3rd Call for Syariah Paper* (pp. 175–183). Universitas Muhammadiyah Surakarta.
- Brown Jr, J. R. (2015). Secularism, Sharia, and the Turkish financial markets. *Brooklyn Journal of International Law*, 40(2), 408–463. Retrieved from <https://digitalcommons.du.edu>
- Darmawan, D. (2013). *Metode Penelitian Kuantitatif* (Cetakan 1). Bandung, Indonesia: PT Remaja Rosdakarya.
- Dyatama, A. N., & Yuliadi, I. (2015). Determinan Jumlah Pembiayaan Bank Syariah di Indonesia. *Jurnal Ekonomi & Studi Pembangunan*, 16(1), 73–83.
- Fauzan, M. (2017). Pengaruh Dana Pihak Ketiga dan Modal Sendiri Terhadap Pembiayaan Murabahah. *Jurnal Investasi Islam*, 2(1), 1–20.
- Harianto, S., Mizan, Al Amin, H., & Meilvinasvita, D. (2019). Determinan Pembiayaan Murabahah (Studi Pada Bank Pembiayaan Rakyat Syariah periode 2012-2017). *Jurnal Ekonomi Dan Bisnis*, 21(1), 21–28.
- Huang, R. (2019). Financial Situation and its Assessment in Wanda Group Company.
- Husaeni, U. A. (2016). The Variables that Affect Murabaha Financing in Islamic Commercial Banks. *International Journal of Nusantara Islam*, 4(2), 1–16.
- Husaeni, U. A. (2017). Determinan Pembiayaan Pada Bank Pembiayaan Rakyat Syariah di Indonesia. *Esensi: Jurnal Bisnis Dan Manajemen*, 7(1), 49–62.
- Irwan, C. (2017). The Effect Of Financial Ratios On Islamic Rural Bank Performance In Indonesia. *International Journal*, 6(8), 384–390.
- Islam, M. T. U., & Ashrafuzzaman, M. (2015). A comparative study of Islamic and conventional banking in Bangladesh: Camel analysis. *Journal of Business and Technology (Dhaka)*, 10(1), 73–91.
- Janwari, Y. (2015). *Lembaga Keuangan Syariah* (Cetakan 1). Bandung, Jawa Barat Indonesia: Remaja Rosdakarya.
- Mansour, W., Ben Jedidia, K., & Majdoub, J. (2015). How Ethical is Islamic Banking in the Light of the Objectives of Islamic Law? *Journal of Religious Ethics*, 43(1), 51–77.
- Masudah, M. (2017). Determinan Volume Pembiayaan Bank Umum Syariah Indonesia. *Ikonomika*, 2(1), 53–62.
- Nugroho, L., Utami, W., Doktoralina, C. M., & Husnadi, T. C. (2017). Islamic Banking Capital Challenges To Increase Business Expansion (Indonesia Cases). *International Journal of Commerce and Finance*, 3(2), 1–10.
- Pilbeam, K. (2018). *Finance & financial markets* (Fourth Ed). Macmillan International Higher Education.
- Rustam, B. R. (2013). *Manajemen Risiko Perbankan Syariah di Indonesia*. Indonesia: Salemba Empat, Jakarta.
- Siagian, Y. K., Budiman, I., & Kismawadi, E. R. (2017). Pengaruh Rasio Keuangan Terhadap Pembiayaan Murabahah di Bank Pembiayaan Rakyat Syariah Adeco Langsa Tahun 2013-2016. *Ihtiyath: Jurnal Manajemen Keuangan Syariah*, 1(1), 56–78.
- Ullah, A., & Giles, D. E. A. (2016). *Handbook of empirical economics and finance*. CRC Press.
- Yanti, E. M. (2018). The Effect of DPK, Financing to Deposit Ratio and Non Performing Financing toward Financing and its Impact on Profitability of Indonesian Sharia Banking (Studies at Sharia Commercial Banks Period 2011-2015). *Account and Financial Management Journal*, 3(01), 1240–1246. <https://doi.org/10.18535/afmj/v3i1.03>
- Yaya, R., Martawireja, A. E., & Abdurahim, A. (2014). *Akuntansi Perbankan Syariah: Teori dan Praktik Kontemporer berdasarkan PAPSII 2013 edisi 2*. Indonesia: Salemba Empat.

Training and Locus of Control Analysis of Self-Efficacy and Employee Ability

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Abstract

This study aims to get an overview of the Influence of training factors and locus of control on self-efficacy and work ability of employees in three-star hotels in East Java. The reputation in this study is the three-star hotel industry in East Java, which totals 20 hotels and all employees at the three-star hotel in East Java, with a sample size of 501 employees. The analysis technique used is to use path analysis. Based on the analysis of the results and the hypothesis proposed previously that the variable trainer power, training material, training methods, training facilities, and locus of control partially have a significant influence on the variable self-efficacy is acceptable/true. While the hypothesis which states that the trainer variable, training material, and training methods and locus of control partially influence the workability variable can also be accepted, only one hypothesis that cannot be accepted is the effect of training facility variables on workability.

Keywords: Self-Efficacy, Employee Ability, Locus of Control, Training, Work-Ability

1. Introduction

At present, the improvement of the quality of human resources (HR) has become a demand for all business and non-business organizations. The faster the flow of changes due to intense competition, both on a local, regional, and global scale requires organizations to continue to make changes so as not to lag behind with their competitors. The main factor that determines an organization still exists in the face of competition is quality human resources. For each organization, the most important asset that must be considered by management is the assets of humans and organizations (Simamora, 2012). The importance of the role of HR for an organization requires management to continue to carry out HR development activities. HR development is an effort to improve the quality and competence of human resources in the organization (Ruky, 2013). One effort to develop human resources includes training to improve skills in carrying out work. According to Zwick (2010), employee training conducted by companies is one and most important measure in improving and maintaining productivity levels.

Various studies show that effective training has a significant effect on improving work capacity. The study conducted by Endayani (2015), for example, resulted in the conclusion that training covering Training Methods and Training Materials affected Work Ability. Training methods are influential in improving employee capabilities. The training methods used include instruction, internships, coaching, written modules that influence work ability.

Training as a human resource development tool relates to improving employee skills and increasing the ability to meet the demands of an ever-changing work situation. The success of the training held by the company can be found through the opinions given by the training participants through a questionnaire at the end of the training (post-test). The question in the questionnaire concerns the participants' satisfaction with the training as a whole, namely the trainer, the material presented, the content of the material, the materials provided, the training environment (space, rest time, food and air temperature), training methods, and management commitment.

According to Mangkunegara (2013), new employees need orientation training, and they need to understand the objectives, rules, and work guidelines that exist in the organization of the company. Besides that, they need to understand their obligations, rights, and duties according to their work. So that training factors, such as: training materials, trainers (trainers), training methods, and training facilities and locus of control effect the effectiveness of training in determining employee self-efficacy. While self-efficacy, as indicated by individual beliefs about their ability to take part in the training, will determine the work ability of employees in three-star hotels in East Java-Indonesia. Through this research, it is expected to be able to know the training factors that effect the self-efficacy and work ability of employees in three-star hotels in East Java-Indonesia.

Theoretical Basis

Training

Understanding training, according to Simamora (2012), is a systematic process of changing the behavior of employees in a direction to improve organizational goals. In training created an environment where employees can obtain or learn specific attitudes, abilities, skills, knowledge, and behaviors related to work. Increasing the career development of human resources can be done by training. Many experts expressed various opinions regarding training. Dessler (2010) stated, "training is a business through the process of teaching new employees or old employees, by providing knowledge of the basic skills needed to run a job." Mangkuprawira (2011) states, "a process teaches knowledge and skills that are assisted, as well as the attitude so that employees are skilled and able to carry out their responsibilities better, according to standards." Training can help employees acquire new knowledge and skills to meet the needs and achievement of the organization. According to Bangun (2012), training is a process to maintain or improve employee skills to produce effective work.

From the various opinions of experts above it can be concluded that the notion of training is a planned process that is used to change attitudes, knowledge or behavior, improve abilities and skills, which are needed not only new employees but old employees also need the training to complete the work in a way that effective. Training is a short-term educational process where non-managerial employees learn their knowledge and skills to improve their effectiveness and work productivity to help achieve organizational goals. Training as a tool for developing human resources is related to improving employee skills and increasing work capabilities to meet the demands of an ever-changing work situation. Training must be able to increase employee effectiveness and improve employee satisfaction.

Locus of Control (LoC)

According to Robbins (2012: 139), Locus of Control is the rate at which individuals believe that they are determinants of their destiny. Likewise, Locus of Control in training participants is considered to influence the ability to transfer the skills they have just learned. Locus Of Control is one of the personality variables, which is defined as the reason for the self-confidence of each individual in being able to control destiny. Locus of control refers to the extent to which an individual connects his life events to external factors or other people (external or to their (internal) deposition. Locus Of Control is a term used to refer to the individual's perception of personal

control, especially concerning control over important results. In the same quote, Benson defines Locus of Control as a person's belief in how the individual attempts to achieve the desired results.

According to Robbins (2012: 138), Internal Locus of Control are individuals who believe that they are the holders of control over whatever happens to them, said to have an Internal Locus of Control. Individuals with internal Locus of Control have a perception that the environment can be controlled by themselves so that they are able to make changes according to their wishes, including in applying the results of training obtained in their work. Because individuals feel they can control themselves, there is a tendency to have high confidence that they are able to absorb the content of the training program so that they can then apply the results of the training to work. Individual internal factors which include work ability, personality, work actions related to work success, self-confidence, and failure of individual work are not caused due to relationships with work partners.

Self-Efficacy

Self-efficacy theory includes self-regulation and self-reflection. Self-reflection capability is that people reflect back on the actions/experiences of certain events and then process cognitively how much they believe in completing future tasks - acting as a theoretical basis for self-efficacy (Bandura: 2005). Bandura strongly emphasizes that self-efficacy is the most important psychological mechanism of self-influence. The formal definition of self-efficacy that is often used is the Bandura statement regarding personal judgment or beliefs about "how well someone can take the necessary actions to deal with a prospective situation" (Bandura: 2005). Capability assessment is very important for individuals, individuals who overestimate their abilities when carrying out activities that cannot be achieved as a result he has difficulty reducing his credibility and suffering failure, while individuals who overestimate their abilities will limit themselves from beneficial experiences, for which individuals must obtaining self-knowledge pleases with abilities, physical skills, and skills to deal with situations encountered daily.

Work Ability

Ability is intended as the ability of employees to carry out work. This ability contains various elements such as manual and intellectual abilities, even to the personal qualities possessed. These elements also reflect the education, training, and abilities demanded following work details (Zainun, 2013). Ability here refers to an individual's capacity to work on various tasks in a job (Gibson et al. 2012), namely ability is a trait (innate or learned) that allows a person to carry out an action or mental or physical work.

Ability consists of two main elements, namely intellectual and physical abilities. Intellectual ability is needed to do mental activities, namely activities that are complex and require thinking. While physical abilities lead to the abilities needed to perform tasks that require stamina, dexterity, strength, and similar skills. Psychologically, the ability of employees consists of potential abilities (IQ) and reality abilities (knowledge and skills). This means that employees who have an IQ above the average (110-120) with adequate education for their positions who are skilled in doing daily work, it will be easier to achieve expected performance (Mangkunegara, 2013).

2. Research Method

Type of the Research

In social research, it is generally divided into three types, namely exploratory research, descriptive research, and explanatory research. This study aims to get an overview of the influence of training factors and locus of control on the self-efficacy and work ability of employees in three-star hotels in East Java, so referring to the three types of research, this research is included in explanatory research. While the method used in this study is the survey method. Research using survey methods is an activity to obtain factual information and facts or phenomenal explanations that exist in the object of research.

The reputation in this study is the three-star hotel industry in East Java, which totals 20 hotels and all employees at the three-star hotel in East Java. In this study, there were two sample groups, namely the sample of three-star hotels and samples of permanent employees of three-star hotels in East Java. For samples of three-star hotels using

the sampling method, namely Total Sampling or Census. The researcher assumes that it is better to consider investigating all elements of the population if the population elements are relatively small and the variability of each element is relatively high (heterogeneous) (Sugiyono, 2012: 44) Thus, all 20 three-star hotels in East Java will be the subject of research. Then, determining the size of the employee sample (sample size) for star hotel employees in East Java, which numbered 3,338 people, based on the Issac and Michael formulas and found that the sample needed for $N = 3,338$ with a standard error of 5% obtained a total sample of 317 person. Seeing this fact, the researchers decided to take a sample of 15% of the number of three-star hotel employees in East Java, which amounted to 501 employees.

Operational Definition of Variables

Variable of Coaching Staff

The Coaching Staff variable is to see the influence of the quality of the instructor/trainer in improving Work Ability and employee performance. This variable is measured through several indicators, namely: (1) relevance of educational background to the material provided, (2) mastery of Training materials, (3) ability to deliver Training materials, (4) appreciation of feedback and trainees, (5) attitude and how the trainer will deliver Training materials.

Variable of Training materials

The training materials variables are to improve the effectiveness of work skills and employee performance. This variable is measured through the following indicators: (1) the benefits of training materials on quality and quantity of work, (2) the relevance of the assignment of material to type of work, (3) the composition of training materials according to the field of work, (4) the ability to understand employee capabilities in the operational field.

Variable of Training Method

The Training Method variable is to see the effect of the Training Method in improving Work Ability and employee performance. This variable is measured through several indicators, namely: (1) the suitability of the Training Method used by the participant's condition, (2) the composition of the technique / Training Method, (3) the level of participant participation during the discussion program in the training program, (4) the opportunity given by the trainer in developing problem analysis or alternative problem solving through case studies, and (5) the benefits of work practice simulations in supporting employee work.

Variable of Training Facilities

The Training Facilities variable is to see the effect of Training materials in improving Work Ability and employee performance. This variable is measured through the following indicators: (1) availability of equipment to support training activities, (2) the effect of availability of records in helping employees understand Training materials, (3) conditions of training buildings and surrounding environments, (4) conditions of lecture / training rooms in providing convenience for participants, and (5) complete library facilities in supporting the training process.

Variable of Locus of control

Locus of control (X1) is an individual's view of achieving conceptual success as an individual's level of confidence in perceiving that success is achieved because they have confidence, that there is a correlation between effort and success, they can manage their lives, and have self-confidence.

Instrument measurement for the locus of control used in this study used 5 statement instruments. Variable measurements using a Likert scale with a score of 1 (strongly disagree) up to 5 (strongly agree), grouping internal and external locus of control is based on the score of the answer. The higher the respondent's answer score, the more likely it is to have an internal locus of control, and vice versa if the respondent's total locus of control score is low then the respondents tend to have an external locus of control.

Variable of Self-Efficacy

Self-efficacy after training (Z) is the individual's belief in his ability to attend training and confidence in completing tasks assigned to him. The self-efficacy instrument used consists of 5 statements, using a scale of 1-5. Range of scale 1 (strongly disagree) up to 5 (strongly agree). If the total score of high respondents shows that the respondents

have high self-efficacy and vice versa if the total score of respondents is low, the respondents have low self-efficacy.

Variable of Work Ability

Work Ability as an intermediate variable, namely as a dependent variable that is influenced by variables in training as well as independent variables that effect employee performance. Work Ability indicators in some question items are used to measure Work Ability variables. Indicators used to measure Work Ability variables, namely: (1) the ability to complete work on time, (2) the intensity of consultation with superiors if faced with difficulties in carrying out work, (3) physical condition of employees in supporting workloads that must be completed, (4) the ability to maintain attitude and behavior as a reflection of the characteristics / characteristics of the company, and (5) the intensity of following information and developments in the banking world.

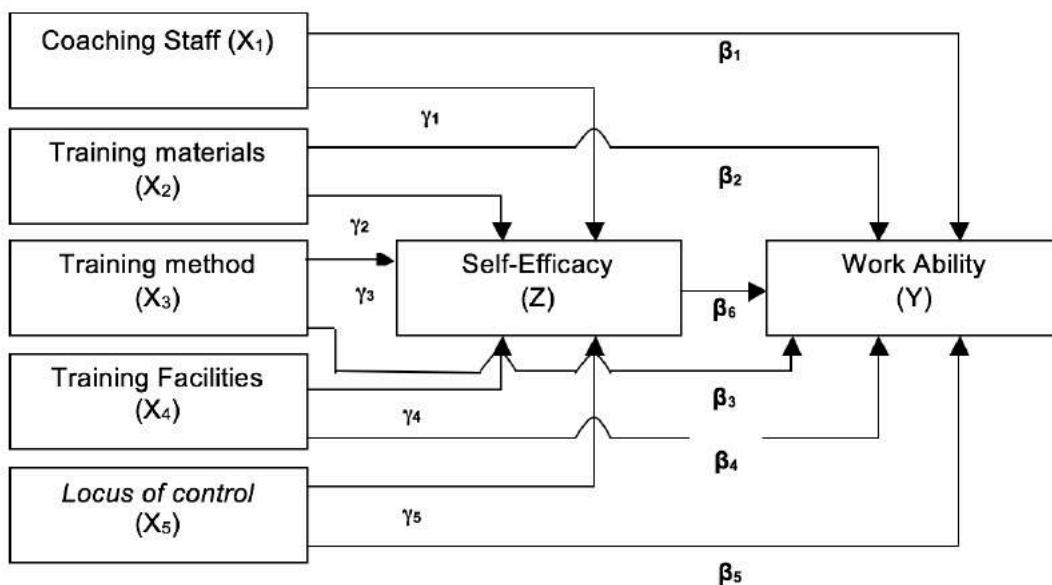
Data Analysis

Based on the conceptual framework, the analytical technique used is to use path analysis, the steps according to Solimun (2010: 47-55) are as follows: The first step in path analysis is to design a model based on the conceptual framework of the research, the formulation as follows:

1. Coaching Staff (X_1) Influence *self-efficacy* (Z).
2. Training materials (X_2) Influence *self-efficacy* (Z).
3. Training Method (X_3) Influence *self-efficacy* (Z).
4. Training Facilities (X_4) Influence *self-efficacy* (Z).
5. *Locus of control* Influence *self-efficacy* (Z).
6. Coaching Staff (X_1) Influence Work Ability (Y).
7. Training materials (X_2) Influence Work Ability (Y).
8. Training Method (X_3) Influence Work Ability (Y).
9. Training Facilities (X_4) Influence Work Ability (Y).
10. *Locus of control* Influence Work Ability (Y).
11. *Self-efficacy* Influence Work Ability (Y).

Research Model

Based on the relationship between the variables above, the model is made in the form of a path diagram as follows:



The conversion of the Path model into a mathematical model becomes as follows:

$$Z = \gamma_0 + \gamma_1 X_1 + \varepsilon$$

$$Z = \gamma_0 + \gamma_2 X_2 + \varepsilon$$

$$Z = \gamma_0 + \gamma_3 X_3 + \varepsilon$$

$$Z = \gamma_0 + \gamma_4 X_4 + \varepsilon$$

$$Z = \gamma_0 + \gamma_5 X_5 + \varepsilon$$

$$Y = \beta_0 + \beta_1 X_1 + \varepsilon$$

$$Y = \beta_0 + \beta_2 X_2 + \varepsilon$$

$$Y = \beta_0 + \beta_3 X_3 + \varepsilon$$

$$Y = \beta_0 + \beta_4 X_4 + \varepsilon$$

$$Y = \beta_0 + \beta_5 X_5 + \varepsilon$$

$$Y = \beta_0 + \beta_6 X_6 + \varepsilon$$

Which:

1. Z (*self-efficacy*) and Y (Work Ability) as endogenous variables, while X_1 (Coaching Staff), X_2 (Training materials), X_3 (Training Methods), X_4 (Training Facilities), and X_5 (Locus of control) as exogenous variables.
2. Parameters γ (gamma), including $\gamma_1, \dots, \gamma_5$ are the parameters of the influence of exogenous variables on endogenous variables self-efficacy (Z).
3. The influence of β (beta), among others, is β_1, \dots, β_5 is the parameter of the influence of exogenous variables on endogenous variables Work Ability (Y), while β_6 is the parameter for the influence of endogenous variables on other endogenous variables.
4. Parameter of ε (epsilon), that is the parameter relating to errors in latent variables based on manifest variables.

The second step of path analysis is an examination of underlying assumptions. Assumptions that underlie path analysis can be divided into two, namely: 1). assumptions relating to the model, and 2). assumptions relating to testing parameter estimates and testing hypotheses. The third step in path analysis is parameter estimation and hypothesis testing based on the path coefficient, while the parameter estimation method used is a maximum likelihood, with AMOS 4.0 software.

The fourth step in path analysis is checking the validity of the model through testing the Goodness of Fit for the overall model (overall model). The goodness of Fit testing for overall models aims to measure the correctness of the structure model and measurement model in an integrated manner so that it must be tested against several fit-indexes.

3. Result

Testing the Goodness of Fit Analysis Results Model

After the raw data obtained were tested for validation and reliability, then the processing and testing of path analysis models were carried out following the existing conceptual framework. In this study, the processing and testing of models were carried out using the AMOS 4.0 program.

Table 1. Results of Analysis of Direct Influence Between Variables of Research

	Coaching Staff	Training Facilities	Training Method	Training Material	Locus of Control	Self-Efficacy
Self-Efficacy	0.264	0.177	0.363	0.594	0.397	0.000
Work Ability	0.199	0.152	0.279	0.243	0.269	0.482

Source: primary data

In direct analysis between variables in this study, two things must be considered, namely: 1). path coefficient value (standardized value) that shows the magnitude of the influence of a variable on other variables, and 2). the level of

significance of the influence of variables partially on other variables. AMOS 4.0 output can be seen from the value of the critical-ratio (c.r) which is analogous to the t-test in regression.

Value c.r. (critical ratio) compared with the value of t table with $\alpha = 0.05$ (i.e., ± 1.98). If the value $-1.98 > tvalue < 1.98$ then the variable partially does not have a significant effect, conversely if tv values < -1.98 or $tvalue > 1.98$, the variable partially has a significant effect.

Analysis of Direct Variable Coaching Staff Effect (X1) on Self-efficacy Variables (Z) and Work Ability (Y)
Based on the table above, output path analysis is obtained, which shows the direct effect of Coaching Staff variable (X1) on the variables self-efficacy (Z) and Work Ability (Y) as follows:

Table 2. Direct Effect of Variable Coaching Staff (X1) on Work Ability (Y) Variables and Self-efficacy (Z)

<i>Variable</i>	Path coefficient	t-Table	Critical Ratio (c.r.)	Information
Coaching Staff (X ₁) → Self-efficacy (Z)	0.264	1.98	2.661	Effect
Coaching Staff (X ₁) → Work Ability (Y)	0.199	1.98	2.263	Influence

Source: primary data

From the table above, it can be seen that the direct Influence of Coaching Staff variable (X1) on self-efficacy (Z) is 0.264. And the significance test is obtained that the value of c.r. is equal to $2.661 > 1.98$ so that the variable can be partially declared significantly. The direct Influence of the Coaching Staff variable (X1) on Work Ability (Y) is 0.199, with value c.r. Amounting to $2.263 > 1.98$ so that this variable partially also has a significant influence on the variable self-efficacy (Y). From the hypothesis proposed in this study which states that the Coaching Staff variable (X1) partially has a significant influence on the variables self-efficacy (Z) and Work Ability (Y) is acceptable/true. The direct relationship model between Coaching Staff variables (X1) on the variables self-efficacy (Z) and Work Ability (Y) is converted into a mathematical equation as follows:

$$Z = 0.166X_1 + 0.062$$

$$Y = 0.113X_1 + 0.050$$

Analysis of Direct Variable Influence of Training Material (X2) on Self-efficacy (Z) Variables and Work Ability (Y)

Based on table 3, the output path analysis is obtained which shows the direct Influence of the Training materials (X2) variable on the variables self-efficacy (Z) and Work Ability (Y) as follows:

Table 3. Direct Influence of Variable Training Materials (X2) on Self-efficacy Variables (Z) and Work Ability (Y)

Variable	Path Coefficient	t-Table	Critical Ratio (c.r.)	Information
Training materials (X ₂) → Self-efficacy (Z)	0.594	1.98	6.354	Influence
Coaching Staff (X ₂) → Work Ability (Y)	0.243	1.98	2.349	Influence

Source: Primary Data

From the above table, it can be seen that the magnitude of the Influence of the Direct Training materials (X2) variable on self-efficacy (Z) is 0.594. From the significance test, it is obtained that the value of c.r. is equal to $6,354 > 1.98$ so that these variables can partially be declared to have a significant Influence. The magnitude of the direct Influence of the Training materials (X2) variable on Work Ability (Y) is 0.243, with a value of c.r of $2.349 > 1.98$ so that this variable partially also has a significant influence on the Work Ability (Y) variable. From the hypothesis proposed in this study which states that the Training materials (X2) variable partially has a significant influence on the variables self-efficacy (Z) and Work Ability (Y) is acceptable/true. The model of the direct relationship between the Training materials (X2) variable on the variables self-efficacy (Z) and Work Ability (Y) is converted into a mathematical equation as follows:

$$\begin{aligned} Z &= 0.429X_2 + 0.068 \\ Y &= 0.153X_2 + 0.065 \end{aligned}$$

Influence Analysis of Direct Variable Training Method (X3) on Self-efficacy Variables (Z) and Work Ability (Y)

Based on Table 4, the output path analysis is obtained, which shows the direct effect of Variable Training Method (X3) on Variable self-efficacy (Z) and Work Ability (Y) as follows:

Table 4. Influence Analysis of Direct Variable Training Method (X3) on Self-efficacy Variables (Z) and Work Ability (Y)

Variable	Path Coefficient	t-Table	Critical Ratio (c.r.)	Information
Training Method (X ₃) → Self-efficacy (Z)	0.363	1.98	4.075	Influence
Training Method (X ₃) → Work Ability (Y)	0.279	1.98	3.367	Influence

Source: Primary Data

From the table above, it can be seen that the magnitude of the Influence of the Training Method (X3) direct variable on self-efficacy (Z) is 0.363. And the significance test is obtained that the value of c.r. is equal to $4,075 > 1.98$ so that the variable can be partially declared to have a significant Influence. The amount of direct Influence of Training Method (X3) variable on Work Ability (Y) is 0.279, with c.r value of $3.367 > 1.98$ so that this variable also partially has a significant Influence on Work Ability (Y) variable.

From the hypothesis proposed in this study, that the Training Method (X3) variable partially has a significant influence on the variables self-efficacy (Z) and Work Ability (Y) is true. The model of a direct relationship between the Training Method variable (X3) on the variables self-efficacy (Z) and Work Ability (Y) is converted into a mathematical equation as follows:

$$\begin{aligned} Z &= 0.368 X_3 + 0.090 \\ Y &= 0.258 X_3 + 0.077 \end{aligned}$$

Analysis of Direct Variable Training Facilities (X4) Influence on Self-efficacy (Z) and Work Ability (Y) variables

Based on Table 5, the output path analysis is obtained, which shows the direct Influence of Training Facilities (X4) variable on the variables self-efficacy (Z) and Work Ability (Y) as follows:

Table 5. Analysis of Direct Variable Training Facilities (X4) Influence on Self-efficacy (Z) and Work Ability (Y) variables

Variable	Path Coefficient	t-Table	Critical Ratio (c.r.)	Information
Training Facilities (X ₄) → Self-efficacy (Z)	0.177	1.98	4.075	There is influence
Fasilitas Pelatih (X ₄) → Work Ability (Y)	0.152	1.98	3.367	There is influence

Source: Primary Data

From the table above, it can be seen that the magnitude of the Influence of the Direct Variable Training Facilities (X₄) on self-efficacy (Z) is 0.177. From the significance test, it is obtained that the value of c.r. is equal to 1,985 > 1.98 so that the variable can be partially declared to have a significant Influence. The magnitude of the influence of the Variable Training Facilities (X₄) on Work Ability (Y) is 0.152, with the value of c.r. amounting to 1979 < 1.98 so that this Variable is partially not Influence Work Ability (Y).

From the hypothesis proposed in this study, that Variable Training Facilities (X₄) partially have a significant Influence on variable self-efficacy can be accepted, while the Variable Work Ability is not accepted. The direct relationship model between Variable Training Facilities (X₄) to Variable self-efficacy (Z) and Work Ability (Y) is converted into a mathematical equation as follows:

$$Z = 0.113 X_4 + 0.057$$

$$Y = 0.088 X_4 + 0.045$$

Variable Direct Influence Analysis of Locus of control (X₅) on Variable Self-efficacy(Z) and Work Ability(Y) Based on Table 6, output path analysis is obtained, which shows the direct effect of Variable locus of control (X₅) on Variable self-efficacy (Z) and Work Ability (Y) as follows:

Table 6 Variable Direct Influence Analysis of Locus of control (X5) on Variable Self-efficacy (Z) and Work Ability (Y)

Variable	Path Coefficient	t-Table	Critical Ratio (c.r.)	Information
Locus of control (X ₅) → Self-efficacy (Z)	0.397	1.98	6.315	There is influence
Locus of control (X ₅) → Work Ability (Y)	0.269	1.98	2.116	There is influence

Source: Primary Data

From the table above, it can be seen that the magnitude of the direct Influence of the variable locus of control (X₅) on self-efficacy (Z) is 0.397. From the significance test, it is obtained that the value of c.r. is equal to 6.315 > 1.98 so that the Variable can be partially declared significantly. The magnitude of the direct Influence of the Variable locus of control (X₅) on Work Ability (Y) is 0.269, with the value of c.r. amounting to 2.116 < 1.98 so that this variable is partially not Influence Work Ability (Y).

From the hypothesis proposed in this study, that Variable locus of control (X₅) partially has a significant Influence on variable self-efficacy can be accepted, while the Variable Work Ability is not accepted. The model of the direct relationship between Variable locus of control (X₄) to Variable self-efficacy (Z) and Work Ability (Y) is converted into a mathematical equation as follows:

$$Z = 0.412 X_4 + 0.059$$

$$Y = 0.139 X_4 + 0.052$$

Analysis of Direct Variable Self-efficacy (Z) influence on Work Ability (Y)

Based on Table 7, output path analysis is obtained, which shows the direct effect of Variable Self-efficacy (Z) on Variable Work Ability (Y) as follows:

Table 7. Analysis of Direct Variable Self-efficacy (Z) influence on Work Ability (Y)

Variable	Path Coefficient	t-Table	Critical Ratio (c.r.)	Information
Self-efficacy (Z)→ Work Ability (Y)	0.482	1.98	4.672	There is influence

Source: Primary Data

The amount of direct effect of variable self-efficacy (Z) on Work Ability (Y) is 0.482, with the value of c.r. amounting to $4.672 > 1.98$ so that this variable partially also has a significant effect on Variable Work Ability (Y). From the hypothesis proposed in this study that Variable self-efficacy (Z) partially has a significant effect on the Variable Work Ability is true. The model of a direct relationship between Variable self-efficacy (Z) and Work Ability (Y) can be converted into a mathematical equation as follows:

$$Y = 0.440 X_4 + 0.094$$

Analysis Exogenous Variable Indirect Influence on Endogenous Variables in Research

Data regarding indirect effects between Variable Coaching Staff (X1), Training materials (X2), Training Method (X3), Training Facilities (X4), and locus of control (X5) on Variable Work Ability (Y) as follows:

Table 8. Analysis Exogenous Variable Indirect Influence on Endogenous Variables in Research

	Coaching Staff	Training Facilities	Training Method	Training Material	Locus of Control	Self-Efficacy
Self-Efficacy	0.000	0.000	0.000	0.000	0.000	0.000
Work Ability	0.121	0.079	0.168	0.284	0.259	0.000

Source: Primary Data

Based on the table above, it appears that Variable Training materials (X2) have the largest indirect effect on the Variable Work Ability (Y), which is equal to 0.284. Next are Variable Coaching Staff (X1), Training Method (X3), Training Facilities (X4), and locus of control (X5) with 0.121; 0.168; 0.079; and 0.259.

Analysis of the Total Effect of Exogenous Variables on Endogenous Variables in Research

Data regarding the total effect between Variable Coaching Staff (X1), Training materials (X2), Training Method (X3), Training Facilities (X4), and locus of control (X5) on Variable self-efficacy (Z) and Work Ability (Y) as follows:

Table 9. Results of the Analysis of the Total Influence Between Variable Research

Standardized Total Effect						
	Coaching Staff	Training Facilities	Training Method	Training Material	Locus of Control	Self-Efficacy
Self-Efficacy	0.252	0.165	0.351	0.592	0.559	0.000
Work Ability	0.309	0.220	0.437	0.515	0.451	0.480

Source: Primary Data

From the data above, Training materials (X2) still provide the greatest total effect on Variable self-efficacy (Z) and Work Ability (Y), followed by locus of control (X5), Training Method (X3), Coaching Staff (X1), Training Facilities (X4). Because there is no direct effect between Variable X1-X5 on Variable self-efficacy, the total value of the fifth Variable effect on Variable self-efficacy is the value of the langsung effect itself, while the total effect of the five Variables on Variable Work Less ability is the accumulation of effects direct and indirect effects.

Overall Model Testing (Overall Mode)

Overall model testing aims to measure the correctness of structural models and measurement models in an integrated manner so that it must be tested against several fit-indexes. The model is said to be good (fit) if the development of a hypothetical model is conceptually and theoretically supported by empirical data. The following are some conformity indices and their cut-off values to test whether the model can be accepted or rejected, including:

1. Chi-Square (χ^2) Statistics, is the most fundamental test tool for measuring "overall fit" and is very sensitive to the size of the research sample. The greater the number of samples, the smaller the value of χ^2 , the better the model, with p-value 0.05.
2. RMSEA (Root Mean Square Error of Approximation), is an index that can be used to compensate for Chi Square Statistic in a large sample. RMSEA value <0.08 shows a "close fit" of the model based on the degree of freedom.
3. GFI (Goodness of Fit Index), is used to calculate the weighted proportion of variance in the sample covariance matrix described by the estimated covariance matrix. Vulnerable value is $0 < \text{GFI} < 1$, the closer to 1 the better.
4. AGFI (Adjusted Goodness of Fit Index), analogous to R2 in regression with acceptance level > 0.9
5. CMIN / DF (The Minimum Sample Discrepancy Function / Degree of Freedom), as an indicator, to measure the suitability of a model. The expected value is <2.00
6. TLI (Tucker Lewis Index), an index that compares a model tested against the baseline model. The expected value is > 0.90.
7. CFI (Comparative Fit Index), this index is not influenced by the size of the sample with the recommended value is > 0.90, the closer to 1 the better.

Table 10. Index of Goodness Of Fit for the Overall Model

Indeks Goodness of Fit	Cut-of Value	Test Result	Conclusion
<i>Chi-Square (χ^2)</i>	Expected to be small	23.825. > χ^2_{table} (0.05;6) 12.392	Not good
<i>Degree of Freedom</i>	6	-	
<i>Significance Probability</i>	≥ 0.05	0.001	
<i>RMSEA</i>	≤ 0.08	0.214	Not good
<i>GFI</i>	≥ 0.90	0.885	Very good
<i>AGFI</i>	≥ 0.90	0.597	Pretty good
<i>CMIN/DF</i>	≤ 2.00	3.971	Not good
<i>TLI</i>	≥ 0.90	0.754	Pretty good
<i>CFI</i>	≥ 0.90	0.901	Very good

Source: Primary Data

Based on the results of the overall model test, it appears that some of the test results show the Not good value, namely in Chi-Square (χ^2), RMSEA, and CMIN / DF. Not good's Chi-Square (χ^2) value indicates that the data differ significantly from the expected results based on the theoretical foundation used. However, this value is not very much considered in testing the correctness of a model because it is very sensitive to the number of samples, the larger the sample, the Chi-Square value (χ^2) will also be smaller (significant). Values from RMSEA and CMIN / DF are test values related to Chi-Square values (χ^2) or those related to data compatibility with models/theories. So if the Chi-Square (χ^2) value is Not good, then the RMSEA and CMIN / DF test results will also be Not good. This can be overcome by increasing the number of research samples so that the Chi-Square value (χ^2) will be significant, as well as the values of RMSEA and CMIN / DF. From the results of the above tests it can be concluded that in general, the Goodness Of Fit test for the overall model has shown the corresponding value and the cut-of value set so that the path analysis model above can be said to be good.

4. Discussion

Analysis of Direct Variable Coaching Staff Influence on Variable Self-efficacy and Work Ability

Based on the path analysis output that shows the direct effect of Variable Coaching Staff on Variable self-efficacy and Work Ability. The magnitude of the effect of Direct Variable Coaching Staff on self-efficacy is 0.264. From the significance test, it is obtained that the value of c.r. is equal to $2.661 > 1.98$ so that the Variable can partially be declared to have a significant effect. The magnitude of the influence of the Variable Coaching Staff directly on the employee's Ability is 0.199, with the value of c.r. amounting to $2.263 > 1.98$ so that this Variable partially also has a significant effect on Variable Work Ability. From the hypothesis proposed in this study, which states that Variable Coaching Staff partially has a significant effect on Variable self-efficacy and Work Ability is acceptable/true. These results are following the opinion of As'ad (1998) and Notoadmojo (2009) that trainers / Coaching Staffan is one of the important components in training.

Analysis of the Direct Influence of Variable Training materials on Variable Self-efficacy and Work Ability

Variable training materials partially have a significant effect on variable self-efficacy and work ability. The direct effect of Variable Training materials on self-efficacy is 0.594. From the significance test it was obtained that value c.r. is equal to $6,354 > 1.98$, so that the Variable can be partially declared significantly. The magnitude of the direct effect of Variable Training materials on Work Ability is 0.243, with a value of c.r. of $2.349 > 1.98$ so that this Variable partially also has a significant effect on Variable Work Ability. Based on the results of the path analysis, it shows that Training materials, the composition of Training materials and the ease of training participants in understanding and understanding Training materials. Provide benefits to self-efficacy and work capabilities of

three-star hotel employees in East Java. This is following the opinion of Mangkunegara (2013), which states that training and development material must be adjusted to the objectives achieved.

Analysis of the Direct Influence of Variable Training Methods on Variable Self-efficacy and Work Ability

Based on the output path analysis shows the influence of the Variable Training Method Directly on Variable self-efficacy and Work Ability Variable Training Method partially has a significant effect on Variable self-efficacy and Work Ability. The magnitude of the effect of the Direct Variable Training Method on self-efficacy is 0.363. From the significance test, it is obtained that the value of c.r ... is equal to $4.075 > 1.98$, so that the variable can be partially declared to have a significant effect. The influence of the Variable Training Method directly on Work Ability is equal to 0.279, with the value c.r. amounting to $3.367 > 1.98$ so that this Variable partially also has a significant effect on Variable Work Ability. So that the suitability of the Training Method, the composition of the technique / Training Method, the level of participant participation, the development of problem analysis through case studies, and the benefits of work practice simulations have a positive influence on self-efficacy and Work Ability of three-star hotel employees in East Java. The success of the training program is inseparable from the methods used in training. The variation of the Training Method will be able to eliminate participants' boredom. In employee education programs in three-star hotels in East Java, although in addition to using exposure methods in the classroom, group discussions, lab work with tools and field trips were also used. Mangkunegara (2013) states that the Training Method and development must be following the level of ability of employees who are participants.

Analysis of Variable Training Facilities Direct Influence on Self-efficacy Variables and Work Ability

Output path analysis shows the direct effect of variable training facilities on variable self-efficacy and work ability. Variable Training Facilities partially have a significant effect on Variable self-efficacy, while the Variable Work Ability has no effect. The effect of Direct Variable Training Facilities on self-efficacy is 0.177. From the significance test it is obtained that the value of c.r. is equal to $1.985 > 1.98$, so that the variable can be partially declared to have a significant effect. The magnitude of the effect of the Direct Variable Training Facilities on Work Ability is 0.152, with value c.r of $1.979 < 1.98$ so that this Variable is partially not Influence Variable Work Ability. Based on the results of the path analysis, it means the availability of equipment to support training activities, the benefits of equipment in helping to understand Training materials, the condition of training buildings and the surrounding environment, the conditions of training rooms to provide participants' convenience, and library facilities / reading materials in supporting training affect self-efficacy and Work Ability.

Direct Effect Analysis of Variable Locus of control on Self-efficacy Variables and Variable Work Abilities

Based on the path analysis output shows the direct effect of Variable locus of control on self-efficacy is 0.397. From the significance test, it is obtained that the value of c.r. amounting to $6.315 > 1.98$, so that the Variable can partially influence significantly. The amount of direct influence Variable locus of control on Work Ability is 0.243 with a value of c.r. amounting to $2.116 > 1.98$ so that this variable is partially Influence Variable Work Ability. Based on the respondent's answers, it was shown that most respondents had internal locus of control, namely having confidence that success could be achieved and being active in responding to changes in the surrounding environment, while 40.4% had external locus of control, they were not sure they could respond to changes in the environment, so that in themselves they are more likely to be resigned to what happens, meaning that even though they have the initiative to try to apply what is obtained from the training, it seems that they still have confidence that fate can change the plans that have been made and success depends on luck.

The results of this study are relevant to the theory which states that basically locus of control is a dimension in the form of copper and internal to external or vice versa, so that an internal person can be external and an external person can be internal because of the conditions that accompany him where he lives and do activities. In line with this theory, in this study locus of control has a significant effect on Work Ability, it is possible because an internal locus of control believes that success is determined by oneself, so it is possible to apply training results to work, but when external factors influence it, for example: working patterns, existing facilities, people around him (working group) who tend to use old patterns, so the farmers may not be able to improve their abilities.

Analysis of the Direct Influence of Self-efficacy Variables on Variable Work Ability

Based on the results of the analysis Variable self-efficacy partially has a significant effect on Variable Work Ability. The amount of direct influence The variable self-efficacy on Work Ability is 0.482, with the value of c.r. amounting to $4.672 > 1.98$ so that this variable partially also has a significant effect on Variable Work Ability. Seeing the results of the analysis means that the benefits of integrated pest control training support the work of employees in completing work difficulties, understanding the conditions of the work environment, giving influence to the ability of farmers. The results of this study are consistent with the opinion of Notoadmojo (2009) stating that among the factors that influence performance, only the ability factor can be developed which can be intervened or treated through training.

5. Conclusion and Suggestion

Conclusion

Based on the analysis of the results and the discussion that has been described previously, then some conclusions can be drawn as follows:

1. Variable Coaching Staff provides direct influence on Variable self-efficacy and Work Ability. The direct effect of Variable Coaching Staff on self-efficacy is 0.264. While the magnitude of the influence of the Direct Variable Coaching Staff on Work Abilities is 0.199. From the significance test obtained, the value of c.r is 2.661 and 2.263, which is greater and table 1.98 so that this variable partially has a significant effect on the two Variables.
2. Variable training materials partially have a significant effect on variable self-efficacy and work ability. The amount of direct influence of variable training materials on self-efficacy is 0.594. The magnitude of the effect of the Direct Variable Training materials on Work Ability is 0.243. From the significance test, the value c.r. each of them is 6.354 and 2.349 > 1.98 so that this variable partially also has a significant effect on Variable Work Ability.
3. Variable training methods partially Influence self-efficacy and Variable Work Ability. The magnitude of the effect of the Direct Variable Training Method on self-efficacy is 0.363, while the effect on Work Ability is 0.279. From the significance test, it is obtained that the value of c.r. is equal to 4,075 and 3,367 > 1.98 , so that the variables can be partially stated to have a significant effect.
4. The effect of the Direct Variable Training Facilities on self-efficacy is 0.177. From the significance test it is obtained that the value of c.r. is equal to 1,985 > 1.98 , so that the variable can be partially declared to have a significant effect. Whereas the magnitude of the effect of the Direct Variable Training Facilities on Work Ability is 0.152, with the value of c.r equal to 1.979 < 1.98 so that this Variable partially does not significantly influence the Work Ability variable.
5. Variable locus of control partially Influences self-efficacy and Variable Work Ability. The amount of direct influence Variable locus of control on self-efficacy is 0.397, while the effect on Work Ability is 0.269. From the significance test, it is obtained that the value of c.r. is equal to 6,135 and 2,116 > 1.98 so that the Variable can be partially expressed significantly.
6. Variable Work Ability partially has a significant effect on variable employee performance. The amount of direct influence of variable work ability on employee performance is 0.482, with a value of c.r of 4.672 > 1.98 so that this variable partially has a significant effect on the variable performance of employees.
7. From the hypothesis proposed previously that Variable Coaching Staff (X1), Training materials (X2), Training Method (X3), Training Facilities (X4), and locus of control (X5) partially have a significant effect on variable self-efficacy is acceptable /right. While the hypothesis states that Variable Coaching Staff (X1), Training materials (X2), and Training Method (X3) and locus of control (X5) partially Influence Variable Work Ability can also be accepted, only one hypothesis that is unacceptable is influenced Variable Training Facilities (X4) against Work Ability.

Suggestion

1. Management must always pay attention to training factors, including: Training materials, Coaching Staff (instructors), Training Methods, and Training Facilities so that the effectiveness of the training can have a

positive influence on self-efficacy and Work Ability. The suitability of these training factors with established standards is an important factor so that the determined output can be achieved properly. Determination of Coaching Staff, the composition balance of training materials is more ideal as needed, a variety of Training Methods that emphasize more on practical approaches and Training Facilities that further support the absorption of Training materials must always be done.

2. Management needs to constantly carry out continuous evaluation and improvement in the training process so that it is in line with the development of science and technology, as well as changes that occur in the world of plantations.

References

- Arbuckle, James L and Wothke, Werner, (2005). *Amos 4.0 User's Guide*
- Bacal, Robert, (2010) *Performance Management*, Jakarta: PT Gramedia Pustaka Utama,.
- Bandura, A. (2005). *Self-Efficacy The Exercise of Control*. New York: W. H.. Freemanand.
- Barker, Alan, (2012). *How to Better at.. Managing People*, PT Elex Media Komputindo, Jakarta.
- Bangun, Wilson. (2012). *Manajemen Sumber Daya Manusia*. Jakarta : Erlangga.
- Collier, William *et all*, (2013). *Training and Establishment Survival*, Department of Economics, University of Kent at Canterbury, United Kingdom
- Dessler, Gary. (2010). *Manajemen Sumber Daya Manusia*. Jakarta: PT. Prenhallindo
- Devenport O., Thomas, (2005). *Human Capital: What is and Why People Invest it*, Thomas O. Davenport and Jossey-Bass Inc., San Fransisco, California.
- L. Gibson, et.al., (2012). *Organization: Bbehaviour, Structure, Processes*. 14th Edition. New York: McGraw-Hill Companies, Inc
- Kroehnert, Gary, (2000). *Basic Training for Trainers . A Handbook for New Trainers*, The McGraw-Hill Australia Pty Limited, North Ryde, NSW.
- Mangkunegara, Anwar Prabu. (2013). *Manajemen Sumber Daya Manusia Perusahaan*. Second Edition. Bandung : PT. Remaja Rosdakarya Offset.
- Nawawi, H. Hadari, (2013) *Manajemen Sumber Daya Manusia Untuk Bisnis yang Kompetitif*, Gajah Mada University Press, Yogyakarta.
- Nazir, Mohammad, (2013) *Metode Penelitian*, Ghalia Indonesia, Jakarta.
- Notoatmodjo, Soekidjo, (2009). *Pengembangan Sumber Daya Manusia, PT Rineka Cipta*, Jakarta
- Otok, Bambang W, (2013). *Penelitian Berbasis Teknik Analisis Statistika (Structural Equation Modelling)*, Paper presented at Statistics Software Training in the Department of Statistics FMIPA ITS.
- Simamora, Henry, (2012). *Manajemen Sumber Daya Manusia*, STIE YKPN, Yogyakarta.
- Smalley, Larry R, (2000). *Orientasi dan Pelatihan di Tempat Kerja*, PT. Pustaka Binaman Pressindo, Jakarta.
- Soetjipto, Budi W dkk, (2010). *Paradigma Baru Manajemen Sumber Daya Manusia*, Amara book, Jakarta.
- Sofo, Francesco, (2013). *Pengembangan Sumber Daya Manusia: Prespektif Peran dan Pilihan Praktis*, Airlangga University Press, Surabaya.
- Solimun, (2010). *Structural Equation Modeling*, Lisrel dan AMOS, Program Pascasarjana Universitas Brawijaya, Malang.
- Sugiyono, (2012). *Metode Penelitian Bisnis*, CV Alfabeta, Bandung.
- Umar, Husein, (2012). *Riset Sumber Daya Manusia Dalam Organisasi*, PT Gramedia Pustaka Utama, Jakarta.
- Zwick, Thomas, (2010). *Training and Firm Productivity – Panel Evidence for Germany*, SKOPE Research Paper No. 23 spring 2010, Centre for European Economic Research (ZEW), Manheimm

Towards Sustainable Water Supply: Enhancing Project Accountability Practices in Water Supply Projects Within Nairobi City County's Informal Settlement Areas

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Abstract

Sustainability of water supply has over the years become a key concern for the global community due to water stress and scarcity attributable to climate change and other anthropogenic factors. This is especially crucial for urban areas where increased rural-urban migration has brought population increases, thus raising the demand for basic services and infrastructure. The concerted efforts of water sector stakeholders have seen to, among other strategies, the implementation of water supply projects in affected areas. In Kenya, however, the statistics show that these water supply projects have reported high failure rates with the existing systems failing to operate at full capacity. The study sought to investigate the effect on the effect of accountability on the sustainability of water supply projects in Nairobi City County's informal settlement areas. A sample of 260 project leaders of water supply projects was considered in this study. Data was collected using structured questionnaires, and both descriptive and inferential data analysis was conducted. The findings revealed that accountability has a positive and statistically significant effect on sustainability and that strengthening accountability practices such as monitoring and evaluation, managerial evaluation, and transparency would bolster project sustainability.

Keywords: Project Sustainability, Accountability, Project Evaluation, Managerial Assessment, Transparency

Introduction

The publication of the 1987 Brundtland Commission report dubbed "Our Common Future" set in motion the global discourse on project sustainability. Project implementers across the globe now strive to ensure projects remain sustainable in light of diminishing natural resources and continuous developing uncertainties (Chawla, Chanda, Angra, & Chawla, 2018). As a vehicle through which change and innovation is made in society by state and non-state actors, projects have been widely adopted owing to the immense contribution they make to economic growth and development especially in developing as countries (Aarseth, Ahola, Aaltonen, Okland, & Andersen, 2016).

Projects account for approximately one-third of the global Gross Domestic Product (Okland, 2015) and act the stimulus for developmental assistance offered by bilateral and multilateral organizations (Yamin & Kim 2016).

Despite the increase in project activity, there is global evidence of failure across various sectors with 20-50 percent of projects failing to meet their quality, schedule and budget constraints (Standing, Standing & Kordt, 2016; Ika, Diallo & Thuillier, 2012; Kusek, Prestidge & Hamilton, 2013). Given the temporary nature of projects and the high project failure rates, there has been an upsurge of interest in making the project results and benefits sustainable to secure the continuity of the economy and society in general (Sabini, 2016). Therefore, the integration of project sustainability principles in project management to harness projects' economic potential is essential.

The International Fund for Agricultural Development-IFAD (2009) posits that sustainability is attained at the point where the institutions supported through specific projects and the benefits generated by those projects continue even after project termination. A broader perspective offered by the 1987 Brundtland report, provides that sustainable development should, in essence, meet the needs of the present without jeopardizing the ability of future generations to meet their own needs (World Commission on Environment and Development, 1987).

The water supply challenge

The precursor to the implementation of water supply projects is the global water crisis that has resulted from deforestation, destruction of water towers, and wetland encroachment. Water is a basic human right and need which should be managed and distributed in an equal, conservational, and sustainable way. Roy, Akshintala, and Sharma (2013) however note that there exists an uneven distribution of water supply services, especially to marginalized social groups. The United Nations Development Programme (2017) electronic portal on the Sustainable Development Goals (SDGs) also reports that water scarcity is a problem faced by more than 40 percent of the world's population. This figure is likely to increase given the impact of climate change that has introduced a new set of demands on water resources.

In Africa, a report on the World Bank's Water and Sanitation Program highlights that only 61 percent of the continent has access to drinking water, lagging behind the rest of the world (The World Bank, 2015). Further, data given by The Water Project (2016) estimates that approximately 319 million people in Africa do not have access to an improved water source. The problem of water scarcity has led to issues like diseases, with 80 percent of illnesses attributable to water shortage and exposure to unsafe drinking water. Moreover, 42 percent of the continent's health facilities lack an improved water source within a distance of 500 meters. In households where there is a water shortage, about 64 percent of them depend on women and girls to get water for their homes with over 40 billion hours spent annually collecting water. Besada and Werner (2015) also note that due to water scarcity, about 30 percent of the population in the continent suffer from chronic hunger, one of the highest rates globally.

Sub-Saharan Africa is one of the most vulnerable regions due to low institutional capacity and high dependency on subsistence agriculture. In the region, subsistence agriculture accounts for about 25 percent of the GDP and employs approximately 70 percent of the population. In addition, water is a vital factor of production in many industries, therefore, diminishing water supplies could translate to slower business expansion hampering general economic growth (The World Bank, 2016). In Kenya, about 17 million people lack access to safe water, which has a negative impact on health, education, and other aspects of social and economic development (Water Services Regulatory Board, 2016). Organizations dealing with water supply are faced with the challenge of dividing the amounts of water in the diminishing resources amongst the competing household consumption, agricultural, industrial and other water needs (Network of African Science Academies, 2014). Therefore, stakeholders are seeking more sustainable solutions to the water crisis. There is a demand for innovative solutions that meet global standards as well as cater for the anticipated economic and population growth without placing undue strain on local water resources (COWI Africa, 2015).

As a panacea for the water crisis, the global community has consequently embraced SDG 6: "Ensure availability and sustainable management of water and sanitation for all" with clear targets to be achieved by the year 2030.

Therefore, governments working in collaboration with international and local development organizations and other stakeholders have initiated water supply projects. The projects strive to ensure there is adequate water to meet societal and economic needs because water scarcity affects, among others, food security, livelihood choices, and educational opportunities. In Kenya, under Vision 2030, the nation's development blueprint, the plan is to ensure improved water and sanitation is available and accessible to all. The reason for this is that water is the key driver for many other sectors majorly agriculture (Government of the Republic of Kenya, 2007). Water supply projects may take the form of pipelines laid, yard taps and in many developing countries, water kiosks. These projects, like other infrastructure projects, are critical to economic growth and sustainable development.

According to Bakker (2013), as much as water supply has become a key goal in international development, theorists and development practitioners are caught between market failure and state failure, which renders project sustainability elusive. According to the Asian Development Bank (2015), water sector projects reported the lowest sustainability rates, with about 53 percent of projects being unsustainable. Developing countries are plagued by a water demand versus supply mismatch, failure of built systems to operate at full capacity and inadequate finances to cater for the development of new systems and operations of existing ones (Behailu, Hukka, & Katko, 2016). Further, the authors note that 25 percent of water supply systems in Sub-Saharan Africa fail before the second year after the inauguration with corresponding non-functionality rates of 30-60 percent. Okereke (2017) reports that approximately 50,000 water supply points are not operational in Africa.

In Kenya, approximately 30 percent of the water supply projects are out of service at any one time (WaterAid, 2015). Rapid urbanization has also led to an influx of over half a million people annually, and the water sector now experiences a challenge in serving almost 8 million underserved citizens residing in low-income urban areas. These urban poor pay more for water supply compared to their counterparts with household connections (Water Services Regulatory Board, 2016). According to Ledant (2013), approximately 36 percent of Nairobi City County residents lack access to individual or communal piped water. Lack of water supply is more prevalent in low-income areas of the County, with access pegged at 12 percent. Out of the 1044 water supply projects implemented by the Nairobi City Water & Sewerage Company (NCWSC) in low-income areas of the County between June 2015 and June 2018, 303 projects are not operational, approximately 29 percent (NCWSC- Informal Settlements Region, 2018).

Accountability for sustainability

In light of the project failure rates and pressures from internal and external stakeholders to achieve project sustainability, the United Nations introduced Results-Based Management (RBM) in the 1990s to enhance its operational effectiveness and accountability. The first RBM principle is accountability, which development practitioners continue to stress in relation to project implementation. Accountability has been interpreted to mean the respective liability of parties working together towards common objectives. Governments are accountable to the citizenry, and project teams are accountable to donors and other stakeholders, suppliers are accountable to the project teams, and so on. Each project stakeholder must be held to account for the responsibilities assigned to them for the success of the project (United Nations Development Group, 2011). In the context of managing for results, the principle of accountability can be achieved when there is a commitment, measurement, enforcement, and creation of an enabling environment.

Commitment to accountability is contained in the agreements, declarations and monitoring and evaluation frameworks that project stakeholders subscribe to. Measurement relates to the development of indicators of performance and development of monitoring and evaluation systems to assess the actual project performance vis-à-vis the project targets. The issue of enforcement deals with who-holds-who accountable and should be spelt out in the project organization and reporting structures. An enabling environment for accountability also rests on the project structures in that projects should be organized in a way that enhances transparency and communication. Access to information is key to monitoring and evaluation of projects, and the project communication structure should include and address the needs of all the relevant stakeholders (Sohath, 2010).

In the context of water supply projects, which are, in essence, public infrastructure assets, the concept of accountability is three-pronged. The first aspect is Monitoring and Evaluation (M&E), the second is the managerial performance, and finally, there is transparency. M&E strengthens accountability within the project management structures of water supply projects. Muriungi (2015) studied the role of participatory monitoring and evaluation programs among government corporations. The study applied a case-study approach focusing on Ewaso Ng'iro North Development Authority. The study established that there was a significant relationship between participatory monitoring and evaluation and the success of projects, with project sustainability being one of the indicators of project success. The study by Muriungi analyzes the participatory approach of M&E, whereas the present study examines other aspects of monitoring and evaluation, such as managerial performance and project reporting. The present study also examined several projects rather than use a single case study to facilitate generalization of findings.

Kibet and Wanyoike (2015) studied the influence of effective monitoring and evaluation processes on sustainable community water projects in Baringo County. The study used a census approach whereby 100 water projects in the County were observed. The study applied both descriptive and inferential statistics. The findings of the study revealed that project sustainability was indeed influenced by effective monitoring and evaluation process. Further, the study recommended the need for user-friendly reporting tools to be availed to the community members for use in the M&E process. The present study mainly bridged a contextual gap whereby its focus is mainly on water supply projects in low-income urban areas. Moreover, beyond M&E processes, the current study has conceptualized accountability to encompass managerial performance and project reporting since project implementers owe it to the stakeholders to implement the project to the best of their capabilities.

A study conducted in seven districts of Dodoma-Tanzania by Mwendamseke, (2016) revealed that project implementation without proper M&E would ultimately lead to the collapse of the project. This is because faults within the sector, such as non-functioning water distribution points will go unnoticed slowing the government's efforts to meet its water supply targets. Further, it was established that monitoring ensured proper management of water supply services and enhanced technical support for the program. The projects under study had effected a quarterly monitoring system that served as a guide for improvement by highlighting priority areas for the projects as well as expected results. The main drawback of this study is that purposive sampling was used as a technique that is at risk of researcher bias (Saunders, Lewis and Thornhill, 2009). In addition, only descriptive statistics were used. No model was employed to test the significance and causality of the selected determinants on sustainability. The current study made use of an empirical model to examine the relationship between the variables.

Umugwaneza and Kule (2016) investigated the role of monitoring and evaluation on project sustainability on electricity infrastructure projects in Rwanda. The study used a case study approach and employed descriptive analysis and multiple regression analysis to examine the relationship between M&E and project sustainability. The study revealed that monitoring and evaluation is positively correlated to project sustainability and that M&E accounts for about 98% of the variations in project sustainability. The present study sought to investigate the relationship between accountability (evidenced through M&E) and sustainability by studying several projects rather than using a case study method. By surveying a number of projects, the researcher was in a better position to generalize the findings of the research.

Siriwardhane and Taylor (2017) in examining perceived accountability of local government infrastructure assets in Australia posit that managerial accountability is important since managers are answerable for how they utilize resources to meet organizational objectives. Managers are expected to be effective and efficient in organizational operations. As public infrastructure assets do not have a profit maximization objective, managerial accountability is assessed through comparison of actual performance to pre-set targets or indicators. This assessment encompasses both the manager's performance in discharging their duties as well as the overall health of the infrastructure asset. The Australian study focused mainly on stakeholder salience, especially considering the political interests and bargaining power of the respondents who were mainly elected public officials. In this study, accountability did not include political aspects but sought to assess in the Kenyan context, how managerial performance affects project sustainability.

The third aspect of accountability is transparency, which, in the majority of the literature available, has been termed sustainability reporting. Akhter and Dey (2017) conducting a study on sustainability reporting practices in Bangladesh, argue that sustainability reporting is a key tool in managing sustainability. However, since sustainability reporting is voluntary, only a paltry 26% of the sampled organizations report on one indicator out of the 40 (environmental, economic and social) indicators prescribed by the Global Reporting Initiative. In a study by Kiliç and Kuzey (2017) examining the factors affecting sustainability reporting in Turkey, the authors found that whereas sustainability reporting is deemed to boost organizational performance very few companies engaged in the practice. The longitudinal data used revealed that however, sustainability reporting is on the rise due to the increased awareness of its benefits. The two studies, however, examine the aspect of reporting within profit-making organizations while this study assessed reporting in the context of public projects.

Research Objective and Hypothesis

The study was guided by the following research objective:

- i. To examine the effect of accountability on sustainability of water supply projects in informal settlement areas in Nairobi City County, Kenya

The study was guided by the hypothesis below:

H₀₁: Accountability has no significant effect on sustainability of water supply projects in informal settlement areas in Nairobi City County, Kenya

Target population and sampling

The target population of this study comprised project leaders of the 741 water supply projects implemented by the NCWSC in informal settlement areas in Nairobi City County (the list of projects is provided in Appendix III). According to the NCWSC the informal settlement areas are divided into six regions, as shown in Table 1:

Table 1: Target Population

Region	Number of projects
North-Eastern	108
Northern	180
Southern	64
Western	47
Eastern	222
Central	120
Total	741

Source: NCWSC (2018)

The unit of observation was the project leader in each project. As such, the total number of respondents was 741, one for each of the projects in the sampling frame. The role of the project leader is to prepare and put into effect the project implementation programme, as such; the input of the project leader was valuable to the study.

Using Yamane (1967) formula for sample size determination, the procedure for obtaining the adequate sample is as follows:

$$n = \frac{N}{1 + N(e^2)}$$

Where: **n**= adequate sample size
N= Target population size
e = margin of error

Using the above formula, the adequate sample size in this case (given a 0.05 margin of error as recommended by Kothari (2004) for Social Sciences) is:

$$n = \frac{741}{1 + 741(0.05^2)} = 259.77 \approx 260$$

Given the population size, a sample of 260 was considered representative and adequate. Saunders, Lewis, and Thornhill (2009) posit that a sample size of 10% and above is considered adequate. A proportional distribution of this sample was then obtained from across the strata. The strata sample size was obtained using the formula offered by Pedhazur and Schmelkin (1991) shown below:

$$r = (c*s) / p$$

Where:

r – Number of respondents required from each stratum

c – Stratum population

s – the desired sample size (260)

p – target population (741)

Table 2 shows the distribution of water supply projects sampled from each region.

Table 2: Distribution of sample size

Stratum (Region)	Stratum Population	Sample Size [r= (c*s)/p]
North-eastern	108	38
Northern	180	63
Southern	64	23
Western	47	16
Eastern	222	78
Central	120	42
Total	741	260

Source: Researcher (2018)

The empirical model

The preferred model for this research was the multiple linear regression model. The model was appropriate as it facilitated the investigation of the causal effect of the independent variables (project evaluation, managerial assessment, and transparency) on the dependent variable (sustainability of water supply projects). The first three objectives were studied using the model below:

$$PS = \beta_0 + \beta_1 PE + \beta_2 MA + \beta_3 T + \epsilon \quad (3.1)$$

Where:

PS: Project Sustainability

PE: Project Evaluation

MA: Managerial Assessment

T: Transparency

ε: Error term

The coefficients $\beta_1, \beta_2, \beta_3, \beta_4$ measured the effect of explanatory variables: PE (Project Evaluation), MA (Managerial Assessment) and T (Transparency) on the dependent variable PS (Project Sustainability) respectively. The significance of the β s was used to test the corresponding hypothesis. The error term denoted by ϵ , represented all other factors affecting project sustainability other than the independent variables under consideration. A p -value < 0.05 means that the variable is significant, and vice versa (Field, 2013). Data were collected using structured questionnaires and analysed using SPSS version 22.

Research Findings and Discussions

Out of the targeted 260 respondents, 194 respondents successfully participated in the survey. Both descriptive and inferential analysis results are presented in the following subsections.

Descriptive Analysis Results

Table 3 presents means and standard deviations from the analysis of the respondents' views on statements related to the independent variables:

Table 3: Responses on Accountability

Statement	Mean	Standard Deviation
Project Evaluation		
Monitoring and evaluation exercises are conducted regularly in the project	3.72	0.656
External evaluators are at times engaged in the evaluation of the project	3.68	0.620
The recommendations made in the M&E reports are applied to steer the project back into course	3.82	0.655
Relevant project stakeholders are engaged in the M&E exercises	3.56	0.832
Aggregate score for project evaluation	3.70	0.342
Managerial Assessment		
There is a rigorous selection process to ensure that only qualified individuals are selected to form the project implementation team	4.12	0.625
There are clear reporting structures within the project implementation team	4.06	0.649
The performance of the project implementation team is appraised by the project sponsors	4.19	0.602
Action is taken on the project team members who are not performing their roles as expected	4.31	0.635
Aggregate score for managerial assessment	4.17	0.340
Transparency		
Project information is collected and documented in a project repository	3.80	0.544
After each evaluation exercise reports are prepared and communicated with the relevant stakeholders	3.92	0.655
There is full disclosure of project information to the various stakeholder groups according to their information needs	3.88	0.595
Aggregate score for transparency	3.87	0.390
Aggregate score	3.92	0.212

Source: Survey Data (2019)

The results in Table 3 show an aggregate score of 3.92 for the variable, accountability. The score indicates that the respondents agree to a large extent that the projects to which they are affiliated exercise accountability. A standard deviation of 0.212 implies that the respondents had similar views. Pertaining to the aspect of project evaluation, the findings yielded a mean of 3.70 showing that they agreed to a large extent that monitoring and evaluation exercises are regularly conducted in the project, external evaluators are at times engaged in the evaluation

exercises, the monitoring and evaluation recommendations are utilized for project improvement and that participatory evaluation is carried out. A standard deviation of 0.342 indicates that there was not much variation in the respondents' views.

Managerial assessment, the second indicator under the variable accountability yielded a mean of 4.17. This shows that the respondents agreed to a large extent that there are rigorous selection processes to ensure that only qualified individuals are selected to constitute the project implementation teams. There are also clear reporting structures within the team, and project sponsors hold the implementation team members accountable. The last indicator, transparency, yielded a mean score of 3.87 and a standard deviation of 0.390. It shows that the respondents agreed to a large extent that project information is stored in a repository, communicated with relevant stakeholders, and full disclosure is ensured in that communication. A standard deviation of 0.390 shows that the respondents shared similar views.

Inferential Analysis Results

This section presents and discusses the inferential analysis results.

Table 4 shows an R^2 value of 0.7050, which means that approximately 70.5 percent of the variation in the dependent variable is attributable to the independent variables under consideration in this study. The remaining variance is attributable to factors beyond the scope of this study. Further, the Analysis of Variance (ANOVA) results in Table 5 indicate that $F = 155.411$ with a p-value of 0.000 (threshold is $p < 0.05$). This implies that the regression model adopted was suitable for the study and was used for further statistical analysis.

Table 4: Model Summary

Model Summary				
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	0.8396	0.7050	0.7003	0.002
a. Predictors: (Constant), Transparency, Project Evaluation, Managerial Assessment				

Table 5: ANOVA

ANOVA						
Model		Sum of Squares	df	Mean Square	F	Sig
1	Regression	82.716	3	27.572	151.411	.000
	Residual	34.608	190	0.1821		
	Total	117.324	193			
a. Dependent Variable: Sustainability						
b. Predictors: (Constant), Transparency, Project Evaluation, Managerial Assessment						

The results from the regression analysis shown in Table 6 produced a beta coefficient of 0.213, 0.181, and 0.172 for project evaluation, managerial assessment, and transparency, respectively. The corresponding p-values are all below 0.05. The beta coefficients of 0.213, 0.181, and 0.172 indicate that the relationship between the dependent variables and project sustainability is positive. A positive relationship implies that an increase in the implementation of accountability practices would lead to an increase in project sustainability. The p-values all below 0.05 indicate that the independent variables have a statistically significant effect on project sustainability. Therefore, the null hypothesis was rejected, implying that accountability has a significant effect on the sustainability of water supply projects in Nairobi City County, Kenya.

Table 6: Coefficients

Coefficients						
Model		Unstandardized Coefficients		Standardized coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	2.200	0.392		5.613	0.000
	Project Evaluation	0.213	0.061	0.143	3.4918	0.000
	Managerial Assessment	0.181	0.061	0.104	2.9672	0.000
	Transparency	0.172	0.054	0.065	3.1851	0.000
a. Dependent Variable: Sustainability						

The findings of the study were consistent with the findings of Kibet and Wanyoike (2015), who from a study of 100 community water projects in Baringo County, established that effective monitoring and evaluation procedures enhance project sustainability. Further, the findings also corroborate the evidence documented by Muriungi (2015), who established that participatory monitoring and evaluation has a significant effect on project success. Project sustainability was taken as one of the indicators for project success.

The findings of the study were also consistent with those Mwendamseke (2016), who established that project implementation without proper monitoring and evaluation processes leads to the collapse of projects. The study, conducted in Dodoma, Tanzania revealed that proper M&E ensured better management of the water supply services and improved project technical support.

Moreover, the findings also concur with those of Umugwaneza and Kule (2016) who conducted a study in Rwanda and established that monitoring and evaluation is essential in project management and accounts for about ninety-eight percent of the variations in project sustainability.

With regard to managerial assessment, the findings of this study agree with those of Siriwardhane and Taylor (2017), who examined the accountability of local government assets in Australia. Their findings revealed that managerial accountability is necessary since public assets have no profit-maximization objective, managers have to be accountable for resource utilization. The findings of the study also matched those of Akhter and Dey (2017) who established that transparency is perceived to boost the performance of projects and organizations in general, and is a core tenet of accountability.

Conclusions

In order to achieve Kenya's Vision of transforming the country to middle-income status by the year 2030, there is a need for a thriving water sector. The onus is on the water sector stakeholders to ensure the sustainability of available water supply sources given the water scarcity trends. Urban informal settlement areas are faced with unique challenges owing to huge population densities that have generated infrastructural and spatial challenges. These areas are also hubs for informal economic activities that are a key contributor to the country's economic growth. The water projects, which form the life-blood of these activities, must, therefore, be sustainably managed. It is imperative for water sector stakeholders in the urban informal settlement space to adopt a sustainability mindset right from the project initiation stage. This calls for a clear focus on the results (short, medium, and long term) that these projects are envisaged to achieve. By focusing on the results chain, the stakeholders will be better placed to put in place measures that enhance sustainability, which is one of the results of good project management practices.

First, there is a need to put in place project accountability measures. Given that water is a merit good and public projects are not required to make profits, it is essential to assess regularly if the projects are achieving their objectives. Accountability is three-pronged entailing project evaluation, managerial assessment, and transparency.

Monitoring and evaluation is at the center of project management best practice since it serves as a way of reflecting on project performance and steering projects back on course where need be. Managerial assessment is also important since project leaders have to be held to account for the use of public resources. Transparency ensures that there is full disclosure of pertinent project information to the key stakeholders.

Recommendations

The findings of this study form the basis of several recommendations for policy and practice. Water sector stakeholders implementing projects in informal settlement areas should invest in accountability structures to ensure sustainability. This calls for strengthening monitoring and evaluation practices in the projects. Evaluations should be carried out on a regular basis and preferably involving external consultants for objectivity. Participatory evaluation is also highly recommended. Since M&E can be quite tasking and resource-consuming, planning for M&E should be done immediately after project design and not merely as an afterthought.

Further, as much as these projects are situated in informal areas, there is a need to strengthen managerial performance through regular assessment by project sponsors and technical assistants. Disciplinary actions should be enforced in situations where managerial performance is found unsatisfactory. This will go a long way in curtailing the 'water supply cartels' that are quite prevalent in these areas. Transparency with regard to project information should also be observed to enhance the accountability of the project implementation team to stakeholders.

References

- Aarseth, W., Ahola, T., Aaltonen, K., Okland, A., & Andersen, B. (2016). Project sustainability strategies: A systematic literature review. *International Journal of Project Management*, 1-12.
- Chawla, V. K., Chanda, A. K., Angra, S., & Chawla, G. R. (2018). Sustainable project management: a review and future possibilities. *Journal of Project Management*, 157-170.
- COWI Africa. (2015). *COWI Africa water and the environment*. Harare: COWI, Africa.
- Field, A. (2013). *Discovering statistics using IBM SPSS Statistics* (4th ed.). New York: Sage Publications.
- Government of the Republic of Kenya. (2007). *The Kenya Vision 2030*. Retrieved from Vision 2030: www.vision2030.go.ke
- Sabini, L. (2016). *United Nations Sustainable Development*. Retrieved from United Nations Sustainable Development: https://sustainabledevelopment.un.org/content/documents/998449_Sabini_Project%20Management%20and%20Sustainability.pdf
- Sohath, N. (2010). *Accountability and managing for results, accountability for whom? Who hold whom accountable?* Phnom Penh: NGO Forum Cambodia.
- The World Bank. (2015). *Water and Sanitation Program Africa FY2015*. Washington DC: The World Bank.
- The World Bank. (2016). *High and dry: climate change, water and the economy*. Washington DC: The World Bank.
- United Nations Development Group. (2011). *Results-Based Management handbook: Harmonizing RBM concepts and approaches for improved development results at country level*. Toronto: United Nations Development Group.
- Water Services Regulatory Board. (2016). *Impact: A performance review of Kenya's water services sector 2014-2015*. Nairobi: Water Services Regulatory Board.
- WaterAid. (2015). *Annual Report and Financial Statements 2014-15*. London: WaterAid.
- World Commission on Environment and Development. (1987). *Report of the World Commission on Environment and Development: Our Common Future*. Oslo: World Commission on Environment and Development.

The Relationship among Emotional Intelligence, Social Support, Job Involvement, and Turnover Intention – A Study of Nurses in Taiwan

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Abstract

This study examines the relationship between nursing staff's emotional intelligence, social support, job involvement, and turnover intention of nursing staff. The MANOVA Multivariate Analysis of Variance (MANOVA) and Structural Equation Modeling (SEM) were used to examine the aforesaid constructs. The results of the study show that while emotional intelligence has a positive impact on social support and job involvement, social support also has a positive impact on job involvement. Meanwhile, both social support and job involvement have a negative impact on turnover intention. Therefore, the underlying reasons for turnover behavior can be traced back to emotional intelligence, whereas social support and job involvement can be two tiers of mediators. These results can provide hospitals with human resource management strategies and serve as a reference for organizational management.

Keywords: Emotional Intelligence, Social Support, Job involvement, Turnover intention, Nurses

1. Introduction

Labor shortage could also be due to the regulations, which are generally the results obtained after hot debates and political wrestling between employers and employees. However, the employees are often the weaker ones. Therefore, in the past, the statutory ordinances still tended to favor employers and led to long term shortage problems in such industries. Taking the nursing industry as an example, every hospital in the entire country has labor shortage problems, and the shortage of nurses is around 9,000 persons in Taiwan. The problem of insufficient nursing staff lies in the low employment rate and high turnover rate. At present, there are more than 100,000 nurses in Taiwan. Most of them cannot take leave even when they are sick. There has been often some news about the death caused by working overtime or long-term fatigue. Even in some cases, the nurses have to work carrying an intravenous injection with them. The Ministry of Health and Welfare (2018), released the ideal ratio of patient and nurse in Taiwan is 7 to 1, but in fact, in the hospital, one nurse needs to take care of a dozen patients. The problem of the nursing shortage is bit by bit eroding the medical system in Taiwan.

This study, therefore, aims to explore the factors that affect the turnover intention of nursing staff. Wu et al. (2009) documented that the turnover rate of nursing staff in Taiwan is very high, and the turnover rate of nursing staff

within 3 months of employment is 50-60% and that within one year is 20-32%. The National Federation of Nurses Association of the Republic of China (2018) pointed out that from December 2013 to February 2018, 89.76% of the hospitals in Taiwan had difficulty in nursing recruitment and the average vacancy rate was 5.57%. Therefore, some of the hospitals had to reduce the number of beds or wards to cope with the situation. Chang et al. (2010), pointed out that the main reasons for the departure of nursing staff come from the characteristics of the nursing work itself. To improve the nursing manpower problem, the nursing staff's ability should be considered, and appropriate nursing work be arranged accordingly. In addition to improving the job environment and reducing the potential factors that cause turnover intention, the government or hospitals can learn from the United States to promote "Magnet hospitals," and attract excellent caregivers willing to engage in nursing work (Pinkerton, 2008; Westendorf, 2007; Wolf et al., 2008). Hospitals or the authority may follow the practice of Australia, California in the U.S.A. and Japan to reduce the ratio of caregivers to patients (Goo et al., 2007; Kao, 2011; Lu, 2009). Hospitals should also promote nursing care retention strategies, to improve the nursing practice environment (Lu et al., 2008) and conduct career planning so that caregivers within a certain age can switch to units that do not need to have night shifts or long work shifts (Huang & Kuo, 2009) to reduce the turnover rate.

At present, the relevant research on nursing staff turnover at home and abroad is mostly focused on job stress and job burnout (Cai Huina et al., 2014; Huang Baoyuan, 2009; Wu et al., 2012; Zeytinoglu et al., 2006) and working pressure (Zangaro & Soeken, 2007; Yu et al., 2008; Chang et al., 2008). However, in addition to working values and work stress, there are emotional intelligence, social support, job involvement, and turnover intention. The study hopes to explore the issues of the nursing staff's emotional intelligence, social support, job involvement, and turnover intention in different aspects, and to fill the gap of previous work regarding nursing staff. Meanwhile, the differences among different hospital care workers are also discussed in this paper. We hope that the findings of this study will enable the Department of Health and medical institutions to gain a better understanding of the manpower loss of caregivers as a reference for future operations.

2. Literature Review

2.1 Emotional Intelligence

Goleman (1996) divided emotional intelligence into five categories: First is understanding one's emotion. The second is managing emotion properly. The third is motivating oneself. The fourth is recognizing emotions in others, while the last is managing relationships. Knowing one's emotion is the basis of emotional intelligence. Proper management of emotions must be based on the basis of self-awareness, understanding how to self-comfort and dispensing of anxiety and darkness. Motivating oneself is a kind of emotional control that enables people to do things more efficiently. Bar-on (2000) suggested that emotional intelligence is the knowledge and social ability that allows a person to have effective emotional responses in different conditions. The theoretical model consisted of five dimensions: interpersonal components, individual internal components, adaptive components, general mood components, and stress management components. These components were made up of five subcomponents: (1) interpersonal components: empathy, social responsibility, interpersonal relationships, (2) individual internal components: self-awareness, self-confidence, self-respect, self-realization, independence, (3) adaptive components: real test, problem solving, agility, (4) general mood components: happiness, optimism, (5) pressure management components: pressure to withstand, impulse control

2.2 Social Support

Cohen et al. (2000) documented that "social support" in the broad sense refers to any social relationship that may contribute to the course of personal health and happiness. Sarason et al. (1983) argued that the measurement of social support includes two factors; one is the number of people one can rely on, the other is the degree of satisfaction. Individuals' satisfaction with others' social support may be influenced by factors such as whether the individual was able to control environmental sensations and recent experiences. Therefore, social support is a subjective feeling, only when the recipient feels supported and satisfied, can it be considered social support.

2.3 Job Involvement

Lodahl and Kejner (1965) integrated multiple concepts of job involvement into two concepts. The first concept was that work performance affects the extent of one's self-esteem. Then, job involvement comes from the level of

individual self-esteem, which depends on the quality of one's performances. The second concept was the recognition of one's work. Since an individual's work value mainly comes from the early socialization process, lasting in one's self-concept, it's not easy to change, and not easily affected by the organizational environment (Brown, 1996). Robinowitz and Hall (1977) indicated that there was a positive correlation between job involvement and age. This might result from the older a person is, the more mature he or she becomes, and the higher need of economic stability.

Turnover Intention

3. Methodology

3.1 Sample

A pretest of the questionnaire was performed to ensure content validity and reliability within the target context. Thirty pretest questionnaires were distributed to the participants in the training program of the Taiwan Nurses Association. In addition, five experts in the organizational behavior areas and five RNs were invited to assess wording clarity, question-item sequence adequacy, and task relevance. Several minor modifications of the wording and the question-item sequence were made based on the comments collected from these experts.

In this study, the online questionnaires were collected from 390 hospital nurses. The valid questionnaires numbered 370, and thus, the valid percentage was 94.87%. The contents of the questionnaire included the questions of emotional intelligence scale, social support scale, job involvement scale, turnover tendency scale, and nurses basic information; This questionnaire used the Likert five-point scale, which is given by the caregivers and assigned 1 to 5 points based on their opinions from "strongly disagree" to "strongly agree". The majority of the respondents were female (94.1 %), were under 35 years old (84.9%), had an educational level of college or higher (95.7%), and had worked less than 5 years(63.8%), had an average personal income per month of less than NT\$ 50,000 (93.0 %).

3.2 Measurement of the Constructs

The questionnaire contained four parts. The first part was the Emotional Intelligence Questionnaire, the questionnaire developed by Sun(2004), which was according to Goleman's (1996) Emotional Intelligence Theory, included five aspects of understanding their emotions, managing emotions, self-motivation, screening others' emotions and managing interpersonal relationships. The Cronbach's alpha of the questionnaire was 0.870, which has demonstrated its reliability and validity (Sun, 2004).

The second part of the questionnaire measured the respondents' degree of social support. The Social Support Questionnaire is based on the Sarason's (1983) Social Support Definition to develop the Social Network Model Scale, which includes three facets: personal, work, and family. The overall Cronbach's α reaches 0.890 (Sarason, 1983), showing that this scale has good reliability.

The third part of the questionnaire measured the respondents' general attitude toward job involvement. The Job Involvement Scale refers to the questionnaire by Xu et al. (1999) compiled based on the "Job Involvement Model Scale" developed by Robinowitz and Hall (1977), which includes two facets: the importance of job involvement and the importance of job identification. The facet, the overall Cronbach's α reached 0.780 (Xu et al., 1999), showing that the scale has good reliability.

The fourth part of the questionnaire measured the respondents 'turnover intention, including their religious affiliation (Buddhism, Taoism, Christianity, Catholicism, or other). The turnover intention scale is based on the "Departure Disposition Scale" developed by Richard et al. (2001), which includes two facets: separation ideas and separation plans. The overall Cronbach's α reaches 0.90 (Richard et al., 2001) showed that this scale has good reliability.

3.3 Hypothesis and Research Framework

Douglas et al. (1996) pointed out that emotional, social support is that when a person is unhappy, his colleagues or supervisors can listen to his complaints and provide encouragement and comfort to relieve or convert his

personal feelings. Robbins (2006) pointed out that the difference between the average senior supervisor and the excellent executer is up to 90% due to emotional intelligence factors. In addition, emotional intelligence will affect employees, social support, and working efficiency, so companies should focus on emotional intelligence. High emotional intelligence can easily convert negative emotions into positive ones and thus result in better job performance (Lam & Kirby, 2002; Sy et al. 2006; Othman et al., 2008; Singh, 2008). Goleman (1996) suggested that when the person's emotional intelligence is high, one will feel content and get along with others, and could feel the emotional changes of self, full of positive attitude and empathy. He also emphasized that anxiety and the achievement of learning will be affected by emotional intelligence. Argyle (1987) suggested that emotions could be controlled when individuals have a benign interaction with society, so emotional intelligence and social support have a mutually influential relationship. According to the above literature, this study proposes the following hypothesis:

Hypothesis 1: Emotional intelligence has a positive impact on social support.

From the theory of emotional intelligence in the literature, the higher the emotional intelligence, the easier it is to convert the negative emotional behavior into a positive emotional process with less negative feelings, and thus, the employee could have a better work performance (Mayer & Salovey, 1997). Salovey and Mayer (1990) can also be used to prove that when an individual's emotional intelligence is high, one can prioritize and deal with tasks properly. Therefore, according to the above literature, this study proposes the following hypothesis:

Hypothesis 2: Emotional intelligence has a positive impact on job involvement.

Lord (1996) suggested that when employees receive social support at work, they will act and give full consideration to the benefit of the organization as an exchange. As for the work attitude, there will be a higher trust and organizational commitment. Likewise, when the employees feel that they are the important ones in the organizations, they will have a strong sense of organizational recognition. Therefore, the higher the social support, the higher the extent of staff engagement. Aoki et al. (2002) documented that in terms of professionals such as public school teachers, social support would improve their recognition of their schools and job involvement. Zheng Yanli (2007) suggested that in the case of the information industry, there is a positive correlation between job involvement and family support. The higher the self-evaluation and family support, the higher the job involvement is. According to the above literature, this study proposes the following hypothesis:

Hypothesis 3: Social support has a positive impact on job involvement.

Steinhardt et al. (2003) and McGrath et al. (2003) argued that if the employees do not have sufficient support in the workplace, they will be susceptible to greater work pressure. Ray and Miller (1991); Thomas and Ganster (1995) and Iverson et al. (1998) argued that social support is an important resilience mechanism that can significantly reduce the negative impact of stressors. It had the ability to protect individuals against life stress events (Ootim, 2001). Dollard et al. (2000) suggested that social support played an important variable in relation to stress in a psychosocial work environment. According to the above literature, this study proposes the following hypothesis:

Hypothesis 4: Social support has a negative impact on turnover intention.

Rabinowitz and Hall (1977) argued that if the employee's job involvement is higher, the turnover tendency is lower. Hom and Griffeth (1995) analyzed the first three major predictors of turnover intention, job satisfaction, organizational commitment, and job involvement, all of which were relevant to turnover intention. According to the above literature, this study proposes the following hypothesis:

Hypothesis 5: Job involvement has a negative impact on turnover intention.

4. Data Analysis and Results

4.1 Reliability and Validity of Research Constructs

Data analysis was conducted using a two-stage methodology involving a measurement model and a structural model, as recommended by McDonald and Ho (2002). The first step in the data analysis was to assess the construct validity for the ten measurement elements by performing LISREL confirmatory factor analysis. The adequacy of

the measurement model was evaluated according to the criteria of reliability, convergent validity, and discriminant validity. Reliability assesses the extent to which varying approaches construct measurements and yield the same results (Campbell and Fiske 1959), and composite reliability (CR) is used to examine the reliability. As shown in Table 2, all of the CR values were greater than the common acceptance level of 0.60 (Bagozzi and Yi 1988). The convergent validity of the measurement scales was evaluated using two criteria suggested by Jöreskog and Sörbom (1989): (a) all indicator factor loadings should be significant and exceed 0.45, and (b) the average variance extracted (AVE) by each construct should exceed 0.50. All factor loadings were higher than the 0.45 benchmark in this study. As shown in Table 2, most AVEs were greater than 0.5, except those for the social support and turnover intention scales, both of which had AVE values (0.45 and 0.43, respectively) slightly below the required minimum criterion of 0.5. Hatcher (1998) proposed that even if the AVE of one or two of the constructs is less than 0.5, the convergent validity can still be considered acceptable. Therefore, the convergent validity was deemed acceptable in the present study.

Discriminant validity assesses the extent to which a concept and its indicator differ from another concept and its indicators (Bagozzi and Phillips 1991). The discriminant validity of the measures was assessed using the guidelines suggested by Fornell and Larcker (1981); namely, the square root of the AVE for each construct should exceed the correlation between that and any other construct. Table 2 lists the correlation matrix, with the correlations among the constructs and the square root of the AVE on the diagonals. The diagonal values exceeded the inter-construct correlations; hence, the measures met the standard for discriminant validity.

Table 2 Correlations, CR, and AVE among variables

Construct	EI	SS	JI	TI
EI	0.76			
SS	0.43**	0.67		
JI	0.17**	0.21**	0.71	
TI	- 0.29**	- 0.23**	0.10	0.66
CR	0.83	0.61	0.73	0.60
AVE	0.58	0.45	0.51	0.43

Diagonal elements (in bold) are the square root of the average variance extracted (AVE)

Off-diagonal elements are the correlations among latent variables (* $p < 0.05$. ** $p < 0.01$, two-tailed)

CR composite reliability, AVE average variance extracted.

4.2 Model Testing Results

Four separate models were tested to examine the relationships among the three independent variables (emotional intelligence, social support, and job involvement) and the dependent variables (turnover intention). Structural equation modeling was used to test the hypothesized relationships in the research model. For models with a good fit, the Chi-square normalized by degrees of freedom (CMIN/df) should not exceed 3, and the non-normed fit index (NNFI), comparative fit index (CFI), and goodness-of-fit index (GFI) should exceed 0.9 (Bentler 1983, 1988; Browne and Cudeck 1993; Hayduk 1987). The root means square error of approximation (RMSEA) should be less than 0.08 (Jöreskog and Sörbom 1993). For the structural models (see Table 3), χ^2/df was 2.622; the GFI was 0.969; the RMSEA was 0.066; NNFI was 0.929, and the CFI was 0.954. In summary, the overall results suggest that the research model provided an adequate fit to the data.

Table 3 Model fit index summary

Fitness type	Index	Estimates of this study	Recommended standard values	Whether it is standard
Absolute Fit Measurement	CMIN/DF	2.622	<3	Yes
	GFI	0.969	>0.9	Yes
	RMSEA	0.066	<0.08	Yes
Incremental Fit Measurement	NNFI	0.929	>0.9	Yes
	CFI	0.954	>0.9	Yes

GFI goodness-of-fit index, RMSEA root mean square error of approximation, NNFI non-normed fit index; CFI comparative fit index.

From the path coefficients of the revised theoretical structure model in Table 4, the path between emotional intelligence and social support was statistically significant with a positive coefficient ($b = 0.853$; $p < 0.001$). It means emotional intelligence exerts significantly direct influence on social support. Thus, H1 was supported. The path between emotional intelligence and job engagement was statistically significant, with a positive coefficient ($b = 0.946$; $p < 0.001$). It means that emotional intelligence has a significant direct effect on job engagement, that is, the higher emotional intelligence of nurses, the higher job engagement of nursing staff. Hence, H2 was supported. The path between social support and job engagement was statistically significant ($b = 0.496$; $p < 0.05$). It indicates that the higher social support of the nursing staff, the higher the possibility they tend to have high job engagement. Therefore, H3 was supported. From the theoretical structure model in Table 4, the path coefficients between social support and turnover were statistically significant with a negative coefficient ($b = -0.644$; $p < 0.001$). It means that the nursing staff's social support has a direct negative effect on turnover intention. Thus, H4 was supported. The path coefficients between social support and turnover intention were statistically significant ($b = -0.235$; $p < 0.01$). It means the job involvement of nursing staff has a significantly negative impact on turnover intention. Therefore, H5 was supported.

Table 4 Parameter estimation of the modified theoretical model

Relationship of construct	Standardized estimates	Results
Social support ← Emotional intelligence (H1)	0.853***	Supported
Job engagement ← Emotional intelligence (H2)	0.946***	Supported
Job engagement ← Social support (H3)	0.496*	Supported
Turnover intention ← Social support (H4)	-0.644***	Supported
Turnover intention ← Job engagement (H5)	-0.235**	Supported

$P < 0.05^*$, $P < 0.01^{**}$, $P < 0.001^{***}$

Conclusion

Since the problems of chronic fatigue or even "karoshi" (sudden death from overwork) are quite common in Taiwan, the government launched a revised labor law. The issue continues to raise a lot of debate and political wrestling between employers and employees, as well as between different political parties in Taiwan. Some of the problems present themselves in the form of labor shortage, especially in some service-intensive industries, such as in the nursing industry. The problem of insufficient nursing staff mainly comes from a high turnover rate. This study, therefore, aims to explore the emotional intelligence, social support, job involvement and turnover intention of nurses by literature and analyzes the differences of the nurses with different personal factors in the four constructs and the association between them. Finally, we put forward the academic and practical recommendations based on our research findings in the following issues.

First, the empirical evidence shows that emotional intelligence has a significant direct impact on social support and job involvement. This means that when the emotional intelligence of nurses is higher, the social support will increase, and then job involvement will also improve. According to the MANOVA analysis, nurses with different ages and different service years of care-related work have significant differences in emotional self-adjustment, interpersonal relationships, emotional management, and social support. The nurses with higher ages tend to have lower emotional intelligence, social support, and job involvement. Meanwhile, they also are inclined to have higher turnover intention. The fewer years of service in care-related work, the lower the average score of emotional intelligence. The results of this study are the same as those of Lin et al. (2009), who suggested that employees with higher social support will have better emotional intelligence, and employees with better emotional intelligence will be more likely to adapt well.

Second, this study finds that social support has a negative effect on job involvement and turnover intention. Namely, when the social support of the nursing staff is higher, the more willing the nursing staff will be to work

in the hospital, and thus, the turnover rate will be reduced. According to the MANOVA analysis, nurses with different ages and different service years of care-related work have significant differences in social support, as well as job involvement and turnover intention. In different age groups, nursing staff falling within 36-40 years of age, when compared to other age groups, social support is lower, and thus, job involvement is lower, and the turnover tendency is higher. As for different service years in care-related work, employees with less than 1 year (inclusive) of service year have higher social support, and their job involvement is also higher. Our study and Lord (1996) and Lin Zhichun (2009) have the same results. The higher the level of social support, the higher the job involvement.

Third, our evidence shows the job involvement of the nursing staff has a negative impact on turnover intention. According to the MANOVA analysis, nursing staff of different age groups, different service years and different years of care-related work have significant differences in job involvement and turnover tendency, which includes resignation plan and turnover intention. In different age groups, for the nursing staff of 36 years of age and above, the lower job involvement results in, the higher turnover tendency. The job involvement of nurses within 15-20 years of age is lower; the turnover tendency of 25-30 years of age is higher. The results of this study are the same as those of Dai et al. (2012). The higher the degree of job involvement, the more attention the employee will pay to his work. Dai et al. (2012) suggest that when recruiting employees, employers should pay attention to whether employees have the personality traits of job involvement.

Overall, the underlying reason of turnover behavior can be traced back to emotional intelligence, whereas social support and job involvement can be two tiers of mediators. Broadly speaking, the government regulations are also part of social support, which can lead to the job involvement of nursing staff. Then, the turnover intention will also be affected accordingly. These results can provide hospitals with human resource management strategies and serve as a reference for organizational management.

References

- Aoki, K., Katoh, Y., Mimura, H., & Sugaya, T. (2002). Effects of professional commitment and social support on organizational commitment of public special schoolteachers. *Japanese Journal of Counseling Science*, 35(3), 208-218.
- Argyle, M. (1987). *The psychology of Happiness*. London and New York: Routledge.
- Bar-On, R. (2000). Emotional and social intelligence: Insights from the emotional quotient inventory, 363-388.
- Brown, S. P. (1996). A meta-analysis and review of organizational research on job involvement. *Psychological Bulletin*, 120(2), 235-255.
- Chang, H. L., Lu, M. S., & Lin, C. F. (2010). Factors related to new nursing staff turnover rates. *The Journal of Health Sciences*, 12(3), 161-172.
- Cohen, S., Gottlieb, B. H., & Underwood, L. G. (2000). Social relationships and health. In S. Cohen, L. G. Underwood, & B. H. Gottlieb (Eds.), *Social support, measurement and intervention: A guide for health and social scientists*, 3-25.
- Doeglas, D., Suurmeijer, T., Briancon, S., Moum, T., Krol, B., Bjelle, A., Samderman, R., & Heuvel, W. V. D. (1996). "An international study on measuring social support: Interactions and satisfaction", *Social Science & Medicine*, 43(9), 1389-1397.
- Dollard, M. F., Winefield, H. R., Winefield, A. H., & De Jonge, J. (2000). Psychosocial job strain and productivity in human service workers: A test of the demand-control-support model. *Journal of occupational & organizational psychology*, 73(4), 501-511.
- Goleman, D. (1996) Emotional Intelligence-Why it can matter than IQ? What really determines success in life, *Learning*, 3(1), 49-50.
- Goo, Y. S., Lin-Wang, M.Y., & Lu, Y. J. (2007). Report on a visit by the Japanese Association of Caregivers. *Newsletter of Taiwan Union of Nurses Association*, 59, 14-17.
- Hough, E. S., Magnan, M. A., Templin, T., & Gadelrab, H. F. (2005). Social network structure and social support in HIV-Positive inner city mothers. *Journal of the Association of Nurses in AIDS Care*, 16(4), 14-24.
- Huang, M. H., & Kuo, C. L. (2009). Correlation study of career barriers and coping strategies among female nurses. *Journal of Nursing and Healthcare Research*, 5(2), 91-99.
- Iverson, R. D., Olekalns, M., & Erwin, P. J. (1998). Affectivity, organization stressors, and absenteeism: A causal model of burnout and its consequences. *Journal of vocational behavior*, 52(1), 1-23.
- Kao, C. C. (2011). Multi-aspects of nursing manpower in Taiwan. *Cheng Ching Medical Journal*, 7(3), 41-46.

- Lam, L. T., & Kirby, S. L. (2002). "Is emotional intelligence an advantage? An exploration of the impact of emotional and general intelligence on individual performance", *The Journal of Social Psychology*, 142(1), 133-143.
- Lee, R. P. L., Ruan, D., & Lai, G. (2005). Social structure and support networks in Beijing and Hong Kong. *Social Networks*, 27, 249-274.
- Lodahl, T. M., & Kejner, M. (1965). The definition and measurement of job involvement. *Journal of Applied Psychology*, 49 (1), 24-33.
- Lord, V. B., (1996). An impact of community policing: Reported stressors, social support, and strain among police officers in changing police department, *Journal of Criminal Justice*, 24(6), 503-522.
- Lu, M. S. (2009). The issues of nursing manpower. In M. S. Lu (Ed.), *Discussion on professional nursing issues*, Taipei City, Taiwan, ROC: Wunan Book, 113–115.
- Lu, M. S., Lin, C. F., Chen, Y. C., Chang, W. Y., & Kao, C. C. (2008). *Nursing staffing policy counseling project*. Taipei City: Executive Yuan, Taiwan, ROC, Department of Health.
- Mayer, J. D., & Salovey, P. (1997). What is emotional intelligence? In P. Salovey & D. Sluyter (Eds.). *Emotional Development and Emotional Intelligence: Implications for Educators*, 3-31.
- McGrath, A., Reid, N., & Boore, J. (2003). Occupational stress in nursing. *International Journal of Nursing Studies*, 40(5), 555-565.
- Mobely, W. H. (1977). Intermediate linkages in the relationship between jobsatisfaction and employee turnover. *Journal of Applied Psychology*, 62(2), 237-240.
- Ootim, B. (2001). Social support. *Nursing Management*, 7(9), 22-24.
- Othman, A. K., Abdullah, H. S., & Ahmad, J., "Emotional intelligence, emotional labour and work effectiveness in service organization: A proposed model", *The Journal of Business Perspective*, 12(1), 31-42, 2008.
- Pedersen, S. S., Spinder, H., Erdman, R. A. M., & Denollet, J. (2009). Poor perceived social support in implantable cardioverter defibrillator (ICD) patients and their partners: Cross-validation of the multidimensional scale of perceived social support. *Psychosomatics*, 50, 461-467.
- Pinkerton, S. (2008). The magnet view: Pursuing ANCC magnet recognition as a system or individual organization. *Nursing Economic*, 26(5), 323–324.
- Price, J. L. (1977). *The Study of Turnover*, Ames: The Iowa State University Press.
- Rabinowitz, S. & Hall, D. T. (1977). Organizational research on job involvement. *Psychological Bulletin*, 84, 265-288.
- Ray, E. B., & Miller, K. I. (1991). The influence of communication structure and social support on job stress and burnout. *Management Communication Quarterly*, 4(4), 506-527.
- Robbins, S. P. (2006) *Organizational behavior*, 11th ed.
- Robinowitz, S., & Hall, D. T. (1977). Organizational research on job involvement. *Psychological Bulletin*, 84, 265-288.
- Salovey, P., & Mayer, J. D. (1990). Emotional intelligence. *Imagination, Cognition and Personality*, 9(3), 185-211.
- Sarason, I. G., Levine, H. M., Basham, R. B., & Sarason, B. R. (1983). Assessing social support: The social support questionnaire. *Journal of Personality and Social Psychology*, 44, 127-139.
- Singh, K. (2008). "Emotional intelligence and work place effectiveness", *Indian Journal of Industrial Relations*, 44(2), 292-302,
- Steinhardt, M. A., Dolbier, C. L., Gottlieb, N. H., & McCalister, K. T. (2003). The relationship between hardiness, supervisor support, group cohesion, and job stress as predictors of job satisfaction. *Journal of Health Promotion*, 17(6), 382-389.
- Thomas, L. T., & Ganster, C. D. (1995). Impact of family-supportive work variables on work-family conflict and strain: A control perspective. *Journal of applied psychology*, 80(1), 6-15.
- Tonsing, K., Zimet, G. D., & Tse, S. (2012). Assessing social support among South Asians: The multidimensional scale of perceived social support. *Asian Journal of Psychiatry*, 5, 164-168.
- Westendorf, J. J. (2007). Magnet recognition program. *Plastic Surgical Nursing*, 27(2), 102–104.
- Wolf, G., Triolo, P., & Ponte, P. R. (2008). Magnet recognition program: The next generation. *The Journal of Nursing Administration*, 38(4), 200–204.
- Wong, C. S., Wong, Y. T., Hui C., & Law, K. S. (2001). The Significant Role of Chinese Employees' Organizational Commitment: Implications for Managing Employees in Chinese Societies, *Journal of world business*, 36(3), 326-340.
- Wu, S. L., Wu, M. S., Huang, H. C., Liuo, L. S., & Lin, M. H. (2009). Program to reduce the turnover rate of new nursing staff. *T.S.M.H. Medical & Nursing Journal*, 15(3), 165–176.
- Wu, T. Y., Fox, D., Stokes, C., & Adam, C. (2012). Work-related stress and intention to quit in newly graduated nurses. *Nurse Education Today*, 32(6), 669-674.
- Zangaro, G. A., & Soeken, K. L. (2007). A metaanalysis of studies of nurses' job satisfaction. *Research in Nursing & Health*, 30(4), 445-458.

Zeytinoglu, I. U., Denton, D., Davies, S., Baumann, A., Blythe, J., & Boosb, L. (2006). Retaining nurses in their employing hospitals and in the profession: Effects of job preference, unpaid overtime, importance of earnings and stress. *Health Policy*, 79, 57-72.

The Effect of Working Capital Management on the Export Performance of Small and Medium Export Enterprises: Evidence from Export Manufacturing Sector in Sri Lanka

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Abstract

Small and Medium Enterprises (SMEs) are critical for the development of the economy in any country and known as the backbone of industrial development in both developing and developed countries. SMEs play a key role in the economy in terms of their contribution to the national output, employment, and the number of firms operating in the country. Effective management of working capital management is necessary for a firm's survival as well as the success of a business. It is essential to maintain a healthy working capital of Small and Medium Scale Enterprises to keep the solvency and liquidity of SMEs. The problem identified in the research was that, in Sri Lanka, 82% of SMEs are export enterprises which are expected to provide a substantial contribution to the total exports of the country, however, at present, it only contributes approximately 5% of total exports. Therefore, the main objective of the study, was to identify whether there is an effect of working capital management (WCM) practices towards the export performance of the SMEs. The respondents were chosen through a systematic sampling technique, and the responses were analyzed using SPSS version 21 to discover impact of WCM on export performance of the company. The results of the study showed that Receivable management, Inventory management, and Payable management significantly affect export performance while cash management does not have a significant effect. Findings concluded that there is a positive relationship between WCM practices and export performance of SMEs. Hence, in order to enhance the export performance, SMEs should also consider their working capital practices among other requirements.

Keywords: SMEs, WCM, Export Performance, Manufacturing Sector

I. INTRODUCTION

Small and Medium Enterprises are important for the growth of the economy in every country and known as the backbone of industrial development in both developing and developed countries. In Sri Lanka, SMEs have gained a wide recognition as a major source of employment, income generation, poverty alleviation, and regional development. SMEs play a major role in the economies in terms of their contribution to national output, employment, and number of operating in countries. In the Sri Lankan context, Small and Medium Enterprises cover a wide range of sectors such as agriculture, manufacturing, construction, and service sector industries. However, reliable data are available only for the manufacturing sector. Within the manufacturing sector, SMEs

account for about 96% of industrial units 36% of employment and 20% of value addition (Task Force for SME sector program, 2002). Hence, the manufacturing sector has been selected to be the study area of the research.

The role of Small and Medium Scale Enterprises (SMEs) in the world economy has been highly emphasized as the means through which rapid industrialization and other development goals of a nation can be realized. Despite their significance and the increased efforts by governments and other stakeholders to ensure the success of small-scale enterprises, they continue to exhibit high birth rates and high death rates (Hamza, Mutala & Antwi, 2015).

Even though successive governments have taken various steps to develop SMEs since independence in Sri Lanka, the contribution of SMEs to the national economy in Sri Lanka is comparatively low when compared with developed and developing countries in the region (Rathnasiri, 2015).

In both developing and developed countries, exports play a major role in the development of the economy of the country, influencing the economic growth, the balance of payment and employment. Looking at the contribution of SMEs for Sri Lankan exports, in spite of the increased strategic significance of internationalization initiatives for the SMEs, there is still an insufficient level of commitment to adopting global practices among SMEs. In this regard, only 3157 SMEs are registered under the Export Development Board (EDB) as exporters out of more than a million number of establishments.

Furthermore, SME contribution to total exports is around 5% although SMEs account for 82% of registered exporters of the country. Even in Sri Lanka, 82% of SMEs consist of export enterprises and expected to provide a higher contribution to the total exports of the country, but provides only around 5% contribution (Mudalige, 2017). There are many reasons for the downfall or poor growth in exports in many countries. According to past research studies; working capital practices, the financial position of the firm, marketing knowledge and information, technological issues, marketing activities, quality problems, language barriers are a few of the reasons identified (Siringoringo, Tintri & Kowanda, 2009). However, out of all these reasons researchers have highlighted working capital as the main reason for the downfall of exports in many countries.

There are similar research conducted in this research area about of SMEs. Therefore, this study focus on working capital management practices and the export performance. This research spread to cash management practices, inventory management practices, receivable management practices and payable management practices as working capital management practices.

The main objective of the study was to identify whether there is an effect of working capital management practices towards the export performance of the SMEs.

II. LITERATURE REVIEW

Definition of SMEs

Definitions for SMEs differ from country to country based on their level of development. The commonly used yardsticks are; total number of employees, annual turnover, and total investment.

In the Sri Lankan context, the SME policy framework defines SMEs based on the number of employees and annual turnover. The category of Small and Medium-sized Enterprises (SMEs) is made up of enterprises which employ less than 300 employees and which have an annual turnover not exceeding Rs.750 Million. In this context, micro enterprises are also read with SMEs for any policy-related measures (Commerce, 2015).

In Sri Lanka, SMEs account for a major proportion from the total number of industries and business establishments, which is the case with regard to many developing countries. SMEs promote economic growth by import substitution as well as through direct exports, and they mainly supply goods and services to large directly exporting ventures and thereby contribute towards alleviating balance of payment difficulties (Hewaliyanage, 2001).

SMEs account for 80% - 90% of the total number of enterprises in Sri Lanka and contribute 30% in terms of value added and account for 32.7% of the employment from agriculture sector, 26.3% of the employment from Industrial sector, 41% of the employment from Services sector (Task Force for SME sector program, 2002). It proves that SMEs in Sri Lanka contributes to enhance the employment level, per capita income level and reduce the poverty level while developing regional areas of the country. Even though SMEs in Sri Lanka contribute highly to the GDP, their contribution to the total exports is around 5%.

Manufacturing sector

Manufacturing is a wealth-producing or wealth creating sector in the economy, where the service sector tends to be wealth consuming (Friedman, 2006). Most of the third world economies process strong manufacturing base while providing employment opportunities. According to the 2010 United Nations (UN) data, the US is still the largest manufacturer in the world, with a share of 20.2% of the world's manufacturing, closely followed by China at 18.9%. Japan is third with 11.1% of manufacturing and Germany fourth with 6.4%. The top 10 countries in the world contribute 72.3% of the world's manufacturing (Jkwala, 2012).

$\text{Net Working Capital (NWC)} = \text{Current Assets (CA)} - \text{Current Liabilities (CL)} \dots\dots\dots (1)$

Working capital management

Working Capital Management enables firms to finance the difference between short-term assets and liabilities (Harris, 2005). Working Capital consists of managing working capital components; including cash management, inventory, receivables as current assets and bank overdraft and short-term loans as Current Liabilities. Working capital might have a significant impact over financial performance and risk of failure of business,

Working capital management is an attempt to handle the current assets, the current liabilities and the interrelationship that occurs between them. Arnold (2008) mentioned that net working capital or working capital is the difference between current assets and current liabilities. Working capital is outlined in an algebraic expression as follows:

Components of working capital management

Cash management

Cash management determines the level of cash required to run the day to day functions of the firm without a failure. As mentioned by McInaney (2000) cash is not just an element of working capital but it stores value and acts as a medium of exchange providing a linkage between all monetary aspects of the firm.

Inventory management

The main aim of inventory management is to hold a minimum level of stocks concerning the cost. According to the study of working capital management of SMEs which is done by Pell & Wilson (1996), it is emphasized that when managing the working capital in an SME their main focus has to go towards reviewing of stock turnover, stock levels, stock re-order levels and the usage of economic order quantity model. By considering these factors, firms could be able to determine the inventory levels, frequency, and reasonableness of inventory levels and inventory budgets preparation.

Receivable management

Accounts receivables are a mode of attracting customers to increase sales of a business. This is because it allows a customer to consume or use the product without making payment and then to pay the due amount after a specific period (Bagchi & Khamrui, 2012). It is important to manage receivables of a firm as the success of a firm depends on the management of receivables.

Payable management

According to Bizfiling (2015) effective account payable management is crucial, more importantly for small and medium scale businesses to ensure that their payables contribution is positively affected to their cash flows and support to maintain the relationship with the suppliers.

Export performance

The study on the export performance of companies started with the studies of Tookey (1964) who tried to determine the factors related to the success of export firms. According to Cavusgil & Zou (1994) and Katsikeas, Leonidou & Morgan (2000), they have stated that there are two procedures to measure export performance, which are categorized as economic aspect (Financial), and non-economic aspects (non-financial). Economic measures include sales and profits. Whereas non-economic aspects include product and market-related factors. According to the research which is done by Aaby & Slater (1989), emphasized that profit-related measures on export growth and profitability are widely used to measure the performance of exports.

Export performance has been measured by various indicators, including export sales, export growth, export profitability, export market share, attainment of export goals, export intensity, and perceived success among competitors (Zou, Taylor & Osland, 1998).

Statement of problem

According to past research the contribution of small and medium export enterprises in other Asian countries were higher compared to the contribution of small and medium export enterprises in Sri Lanka. Furthermore, out of total number of exporters in Sri Lanka 82% are Small & Medium Enterprises but the contribution to the total exports is only around 5% (Mudalige, 2017). Based on exploratory research conducted, it is stated that in other countries there are many reasons behind the low contribution to exports by Small and Medium Enterprises (Huda, 2013; Ackah & Vuvar, 2010; Yoshino & Taghizadeh-Hesary, 2016).

Among these all reasons, working capital management issue has been highlighted in many research as the main reason for the low contribution to exports. There is an inverse relationship between working capital practices and profitability (Deloof, 2003). It is stated by using correlation and regression analysis, that a significant negative relationship is found between the firm's profitability and its liquidity level (Eljelly, 2004). These research examples depict that working capital management has been the main reason for the low contribution. Therefore, in this research, we aim to find the effect of working capital management on the export performance of small and medium export enterprises in Sri Lanka.

Objective

The aim of this study was to analyze the effect of working capital management practices on Small & Medium export performance.

The main objective was divided into two specific objectives as follows;

- To determine the relationship between working capital management practices & export performance.
- To analyze the effect of each of the identified practices on the export performance of companies.

Conceptualization

Working capital is the proportion which is allocated from the total capital of the company to be employed in the short term operations (Geoffrey & Elliot, 1969). It is the difference between current assets and current liabilities. Under current assets, **Cash management** is defined as the management of a firm's cash to ensure adequate cash to maintain the entity's daily operations (Akinyomi, 2014). **Inventory management** is the vital dimension in the supply chain management as it emphasizes the ability of a firm to fulfill customer needs and wants on time and to allocate quantity into planning cycles (Koste & Malhotra, 1999). **Accounts receivables** are an imperative

component of current assets. As a result of any change in their extent can influence the financial position of a company (Bellouma, 2011). Under current liabilities, **Payables management** involves balancing the benefit to gain from extending credit to customers and to find the optimal level of credit and discounts which will maximize the firm's profit. Figure 1 depicts the relationships that will be studied in this study.

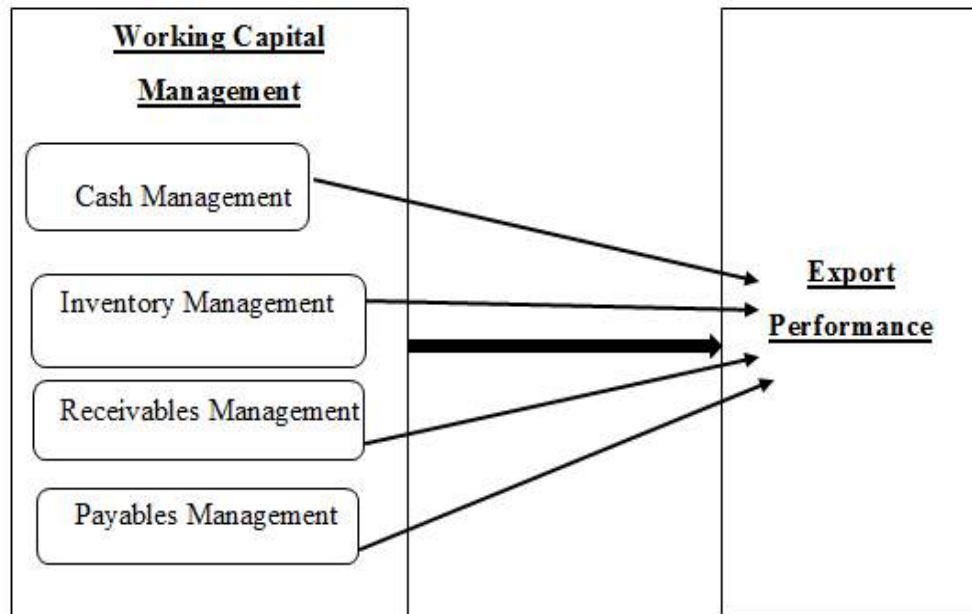


Figure 1: Conceptual Framework

DATA AND METHODOLOGY

Research design

One of the main benefits of the use of deductive research method is it use quantitative data to achieve research objectives. Therefore, in this research, deductive research design was used as this study has a specific aim to achieve, which is to find out whether there is an effect of WCM on export performance of small and medium export enterprises. In the beginning, hypothesis to achieve research objectives were developed and then a structured questionnaire to gather information from export SMEs. When working capital management of SMEs are investigated on the export performance, the export SMEs are the subject and the respondents of this research.

Sampling design

The target of this research was on small and medium export enterprises in Sri Lanka and the target population of export SMEs accounts for 3157 which are registered under the Export Development Board of Sri Lanka. The research was carried out in the manufacturing sector which focuses on the effect of WCM on export performance of export SMEs, a research questionnaire was given to the exporters that have been selected through the systematic sampling technique and those responses are collected to find out the effect of working capital management on the export performance of SMEs related to the manufacturing sector. Sample were selected from framework given by EDB on manufacturing Export SMEs related to different industries which were of 120 firms. This population of 120 enterprises listed and a sample of 60 was selected through systematic Sampling Technique. The sample was not biased as it was directly listed through the framework of the EDB, these firms are into apparel, footwear and leather, gift items and lifestyle, coconut manufacturing and boat building.

To select small and medium export enterprises for the sample following definition was used.

Table 1. Definition
SMEs: Manufacturing Sector

Criteria	Medium	Small	Micro
Annual turnover	Rs. Mn.251-750	Rs. Mn. 16-250	Less than Rs.Mn.15
Number of employees	51-300	11-50	Less than 10

Source: (Task Force for SME sector program, 2002)

Method of data collection

Primary data was gathered using the survey questionnaire method and the questionnaires were administered among selected small and medium export enterprises in the manufacturing sector. The questionnaire was distributed to the sample via e-mail where the responses were collected to the Google drive.

Measurement of variables

The questionnaire, which consists of questions regarding the basics of the company, cash management, Receivable management, Inventory management, Payables management and questions, related to reporting which tested using a likert scale. To obtain the values for central tendency measurements likert scale points are assigned as follows: 1=Never, 2=Rare, 3=Sometimes, 4=often, 5=Always. Taking a clue from the past literature, export performance measurements were assessed on five-point likert scales (Zou, Taylor & Osland, 1998).

Operationalization of variables

Table 2. Operational Chart

Variable	Question number	No. of Sub questions	Sources
Cash management	2	09	(Bandara & Rathnasiri, 2016) (Agyei-Mensah, 2011) (Bellouma, 2011) (Rathnasiri, 2015) (Caballero, et al., 2010) (Rathnasiri, 2015)
Receivable management	3	09	(Bellouma, 2011) (Bandara & Rathnasiri, 2016) (Kubickova & Soucek, 2013) (Nobanee & Abraham, 2015) (Rathnasiri, 2015)
Inventory management	4	10	(Bandara & Rathnasiri, 2016) (Nobanee & Abraham, 2015) (Rathnasiri, 2015)
Payables management	5	11	(Nobanee & Abraham, 2015)

Methodology

In the regression equation, y is always the dependent variable and x is always the independent variable. The following equation was used to mathematically describe a linear regression model;

$$Y_i = a + bX + \epsilon_i \dots \dots \dots (2)$$

Where,

Y = Dependent variable

X = Independent variables

ϵ = The residual error

The slope of the regression line (b) is well-defined as the rise divided by the run. The y intercept (a) is the point on the y axis where the regression line would intercept the y axis. The slope and y intercept is included in the regression equation. The intercept is usually known as a constant, and the slope is defined as the coefficient. An error term is included in the equation as the regression model is not a perfect interpreter. In the regression equation, y is always the dependent variable and x is always the independent variable. When higher the R-squared it is better and the model fit to the data set. ANOVA is also widely used as the statistical technique for test of significance of hypothesis. (Ogee, et al., 2013).

RESULTS AND DISCUSSION

Regression

Table 3. Results of Regression (Model Summary)

Model	R	R Square	Adjusted R Square	Std.The error of the Estimate
1	0.904 ^a	0.818	0.815	0.39346

Note:a=Dependent Variable-Mean of company's Export Performance;b=Predictors:(constant) Mean of working capital management

The independent variables that were studied, explained 81.8% of export performance as represented by the R-squared. Therefore, this depicts that the independent variable contributes 81.8% to export performance, while other variables which are not studied in this research contributes 18.2% to export performance.

Table 4. Anova

ANOVA^a

Model	Sum of Squares	df	Mean Square	F	Sig.
1 Regression	40.324	1	40.324	260.473	.000 ^b
Residual	8.979	58	.155		
Total	49.303	59			

a. Dependent Variable: Mean of company's Export Performance

a. Predictors: (Constant), Mean of Working capital

Note: a=Predictors: (constant) Mean of working capital management

In this case, analyze the relationship between working capital management and export performance. From the ANOVA statistics in table 4, data from the selected sample from the population had a significance level of 99% which shows these data is best for making a conclusion on the population.

Table 5. Regression Statistics

	β	SE	T	Sig
Constant	0.292	0.118	2.477	0.016**
WCM	0.620	0.038	16.139	0.000**

Note: β =Beta; SE=Standard Error; Sig=Significant Value; $R^2=0.818$. The dependent variable is Export Performance of SMEs. * $p<0.05$, ** $p<0.01$

The coefficient of regression of above Table 5 was used to develop the below equation;

$$Y = 0.292 + 0.620WCM \dots \dots \dots (3)$$

Using this model, when one unit of working capital management increases it will lead to a 0.620 increase in export performance.

According to the model, P-value (significance) of working capital management which is less than 0.05 that means alternative hypothesis is accepted which is *H1: There is an effect of working capital management on the export performance of export SME.*

Table 6. Results of Multiple Regression (Model Summary)

Model	R	R Square	Adjusted R Square	Std. The error of the Estimate
1	0.931 ^a	0.867	0.857	0.34522

Note: a=Dependent Variable-Mean of company's Export Performance; b=Predictors:(constant) Mean of cash, Mean of Receivable, Mean of Inventory, Mean of Payable

The four independent variables that were studied, explained 86.7% of export performance as represented by the R-squared. Therefore, this depicts that the four independent variables contribute 86.7% to export performance, while other variables which are not studied in this research contributes 13.3% to export performance.

Table 7. Anova

ANOVA ^a					
Model	Sum of Squares	df	Mean Square	F	Sig.
1 Regression	42.748	4	10.687	89.674	.000 ^b
Residual	6.555	55	.119		
Total	49.303	59			

a. Dependent Variable: Mean of company's Export Performance

b. Predictors: (Constant), Mean of Payable, Mean of cash mgt, Mean of inventory, Mean of Receivable

Note: a=Predictors :(constant) Mean of cash, Mean of Receivable, Mean of Inventory, Mean of Payable

From the ANOVA statistics in table 7 data from the selected sample from the population had a significance level of 99% which shows these data is best for making a conclusion on population. This statistics test gives an F value of 89.674, which shows the overall model is significant.

Table 8. Regression Statistics

	β	SE	T	Sig
Constant	0.009	0.104	2.694	0.009**
CM	0.396	0.207	1.912	0.061*
RM	-1.143	0.297	-3.848	0.000**
IM	0.736	0.245	2.999	0.004**
PM	0.620	0.260	2.384	0.021**

Note: β =Beta; SE=Standard Error; Sig=Significant Value; $R^2=0.867$. The dependent variable is the Export Performance of SMEs. * $p<0.05$, ** $p<0.01$

The coefficient of regression of above Table 8 was used to develop the below equation;

$$Y=0.009 + 0.396CM - 1.143RM + 0.736IM + 0.620PM \dots \dots \dots (4)$$

Using this model, when all four factors (cash management, receivables management, inventory management, and payable management) are constant at zero, export performance was 0.009 in the regression model.

Findings of data analysis revealed that all other independent variables are constant and when one-unit of receivable management increases it will lead to an 1.143 decrease in export performance; when one unit of inventory increases it will lead to an 0.736 increase in export performance; when one unit of payable increases it will lead to an 0.620 increase in export performance.

According to the model, P-value (significance) of cash management is 0.061 which is greater than 0.05 that means alternative hypothesis is rejected which is **H2**: *There is an effect of cash management on the export performance of export SMEs* and all other three variables were significant because their P-value is lower than 0.05, therefore, the following hypothesis was accepted;

H3: *There is an effect of inventory management on the export performance of export SMEs*

H4: *There is an effect of receivables management on the export performance of export SMEs.*

H5: *There is an effect of payables management on the export performance of export SMEs.*

Interpretation of results

The developed regression in this study; working capital management explained 81.8% of the export performance of manufacturing SMEs. According to the past literature, there is an inverse relationship between working capital and profitability (Deloof, 2003). The past literature explained that when the working capital is increasing, the firm's profitability is also decreasing.

Independent variables that were studied in this research (cash management, receivables management, inventory management, and payable management) explained 86.7% of the export performance of manufacturing companies listed in the Export Development Board of Sri Lanka as presented by R-Squared (0.867).

According to Deloof (2003), it depicts that coefficient of the account receivable is negative and highly significant and an increasing number of account receivable days will lead to decrease in operating income by presenting the negative relationship between the operating income and the period taken by the firm to receive account receivable

payments. The findings of this study confirmed the finding of Robinson, Logan & Salem (1986) which argued inadequate inventory management is a major source of SMEs failure due to inadequate inventories to send goods as per the requirements of customer orders. Further, this study is in line with Amoako (2013) who stated, SMEs do not maintain an accurate payable record that leads to delay in supplier payment and if the company could manage payable accurately the efficiency of the company will be increased.

According to the results, there is a positive relationship between working capital management of SMEs and their export performance. Based on the results, export performance can be increased when the SMEs maintaining working capital management properly.

RECOMMENDATION AND CONCLUSION

Conclusion

In considering the results of multiple regression analysis, cash management has a positive but insignificant effect on the export performance of SMEs. Receivables, inventory, and payables have a positive significant effect on the export performance of the selected sample of SMEs.

From this result, the objective of analyzing the effect of each of the identified practices on the export performance of companies is achieved. All four variables of the working capital contribute 86.7% of the export performance when considering WCM as a single variable, working capital management contribute 81.8% (R square) of the export performance of an SME.

Therefore, the conclusion can be made as working capital management of firm's has an effect on their export performance.

Recommendation

According to the results, In order to enhance the export performance of an SME through Working Capital Management Practices. If firms do not review their inventory level, inventory age analysis, and inventory turnover. It can be also advised to have a cash budget that leads to track the cash inflows and cash outflows. SMEs must review banks before going into loans and other credit facilities as it supports the firm to distinguish the different facilities and policies of each bank and identify the suitable bank for their purpose. The SMEs have to keep a track of the debtor age analysis, Receivables turnover and reviewing the overdue debtors by calculating those ratios. In order to have a proper management, the companies should use these ratios.

Apart from what firms have to do, EDB can conduct training programs to SMEs on how to adopt and implement WCM practices on cash management, receivable management, inventory management, and payable management.

References

- Aaby, N. E. & Slater, S. F., 1989. Managerial Influences on Export Performance: A review of the Empirical Literature. *International Marketing Review*, 6(1), pp. 22-30.
- Abel.M, 2008. The Impact of Working Capital Management on Cash Holdings. *A Quantitative Study of Swedish Manufacturing SMEs*, 1(1), p. 84.
- Ackah, J. & Vuvor, S., 2010. The Challenges Faced by Small & Medium Enterprises (SMEs) in Obtaining Credit in Ghana. *Journal of Small Business Management*, 38(3), pp. 55-66.
- Agyei-Mensah, B. K., 2011. Financial Management Practices of Small Firms in Ghana. *African Journal of Business Management*, 5(10), pp. 3781-3793.
- Akinyomi, O., 2014. Effect of Cash Mangement on Profitability of Nigerian Manufacturing firms. *International Journal of Marketing and Technology*, 4(10), pp. 129-140.
- Amoako, G., 2013. Accounting Practices of SMEs: A Case Study of Kumasi Metropolis in Ghana. *International Journal of Business and Management*, 13(8), pp. 73-83.
- Arnold, G., 2008. *Corporate Financial Management*. Harlow: Financial Times Prentice Hall.

- Ayob, A. H., Gudmundsson, S. V. & Yaacob, H. M., 2014. Financial Influences on Export Status of Small and Medium-Sized. *International Journal of Entrepreneurship and Small Business*, 24(3), pp. 433-454.
- Bagchi, B. & Khamrui, B., 2012. *Relationship Between Working Capital Management and Profitability: A Study of Selected Companies in India*, s.l.: Business and Economics Journal.
- Bandara, R. & Rathnasiri, U., 2016. *The working capital management practices of small and medium enterprises in Sri Lanka*. [Online] Available at: <https://www.researchgate.net/publication/311886345> The Working Capital Management Practices of Small and Medium Enterprises SMEs in Sri Lanka [Accessed 17 March 2018].
- Bellouma, M., 2011. The Impact of Working Capital Management on Profitability: The Case of Small and Medium Sized Export Companies in Tunisia. *Management International*, 15(1), pp. 71-88.
- Bizfiling, 2015. *The Relationship Between Accounts Payables and Cash Flow*. [Online] Available at: <https://www.bizfilings.com/toolkit/research-topics/finance/managing-cash-flow/the-relationship-between-accounts-payable-and-cash-flow> [Accessed 20 June 2018].
- Caballero, S., Teruel, P. & Solano, P., 2010. Working capital management in SMEs. *Accounts and finance*, 1(1), pp. 511-527.
- Cavusgil, T. S. & Zou, S., 1994. Marketing Strategy Performance Relationship: An Investigation of the Empirical Link in Export Market Ventures. *Journal of Marketing*, 58(1), pp. 1-12.
- Commerce, M. o. I. a., 2015. *National Policy Framework for Small & Medium Enterprises Development*. s.l.:s.n.
- Deloof, M., 2003. Does working capital management affect profitability of Belgian firms?. *Journal of Business Finance and Accounting*, 30(3,4), pp. 573-587.
- Eljelly, A. M. A., 2004. Liquidity - profitability tradeoff: An empirical investigation in an emerging market. *International Journal of Commerce and Management*, 14(2), pp. 48-61.
- Friedman, M., 2006. *Free Markets and the End of History*. San Fransico: s.n.
- Geoffrey, P. C. & Elliot, B., 1969. *Management of Money and Finance*. New York: Gower Press.
- Hamza, K., Mutala, Z. & Antwi, S. K., 2015. Cash management practices and financial performance of small and medium enterprises (SMEs) in the northern region of Ghana. *International Journal of Economics, Commerce and Management*, 3(7), pp. 456-480.
- Harris, A., 2005. Working Capital Management: Difficult, but Rewarding. *Financial Executive*, 21(4), p. 52.
- Hewaliyanage, R., 2001. *Export Orientation for Small and Medium Enterprises' Policies, Strategies and Programmes*. Tokyo: Asian Productivity Organisation.
- Huda, S. N., 2013. *Export Barriers for SMEs. A Case Study of Bangladeshi Small and Medium Sized Shrimp Exporting Companies to the European Market*. [Online] Available at: <http://www.theseus.fi/handle/10024/53910> [Accessed 24 March 2018].
- Katsikeas, C., Leonidou, L. & Morgan, N., 2000. Firm-level export performance assessment: review evaluation, and development. *Journal of the Academy of Marketing Science*, 28(4), pp. 493-511.
- Koste, L. L. & Malhotra, M. K., 1999. A Theoretical Framework for Analysing the Dimensions of Manufacturing Flexibility. *Journal of Operations Management*, 18(1), pp. 75-93.
- McLaney, E. J., 2000. *Business Finance Theory and Practice*. 5 ed. London: Financial Times Prentice Hall.
- Mudalige, D. M., 2017. *Export Behavior of Small and Medium Scale Enterprises (SMEs) in Sri Lanka: The Role of the Entrepreneur and the Moderation Role of Industry Context*. Colombo, APIIT Business & Technology Conference.
- Ogee, A. et al., 2013. *The Minitab Blog*. [Online] Available at: <http://blog.minitab.com/blog/adventures-in-statistics-2/regression-analysis-how-do-i-interpret-r-squared-and-assess-the-goodness-of-fit> [Accessed 14 11 2018].
- Padachi, K., 2006. Trends in Working Capital Management and Its Impact on Firm's Performance: An Analysis of Mauritian Small and Manufacturing Firms. *International Review of Business Research Papers*, 2(2), pp. 45-58.
- Pell, M. & Wilson, N., 1996. Working Capital and Financial Management Practices in the Small Firm Sector. *International Small Business Journal*, 4(1), pp. 52-68.
- Rathnasiri, U., 2015. The Financial Practices of Small and Medium Enterprises in Sri-Lanka. *Global Journal of Contemporary Research in Accounting, Auditing, and Business Ethics*, 1(2), pp. 374-399.
- Robinson, R. B., Logan, J. E. & Salem, M. Y., 1986. Strategic versus operational planning in small retail firms. *American Journal of Small Business*, 10(3), pp. 7-16.
- Siringoringo, H., Prihandoko, Tintri, D. & Kowanda, A., 2009. Problems Faced By Small and Medium Business. *Delhi Business Review*, 10(2), pp. 49-56.
- Smirat, A. L. & Yousef, B., 2016. Cash Management Practices and Financial Performance of Small and Medium Enterprises (SMEs) in Jordan. *Research Journal of Finance and Accounting*, Volume 7.

- Task Force for SME sector program, 2002. *National Strategy for Small and Medium Enterprise Sector Development in Sri Lanka White Paper*, Colombo: Ministry of Enterprise Development and Investment Promotion.
- Tookey, D. A., 1964. Factors Associated With Success in Exporting. *Journal of Management Studies*, 1(1), pp. 48-66.
- Yoshino, N. & Taghizadeh-Hesary, F., 2016. *Major Challenges Facing Small and Medium-sized Enterprises in Asia and Solutions for Mitigating Them*, Tokyo: ADBI Working Paper Series,
- Zou, S., Taylor, R. C. & Osland, E. G., 1998. The EXPERF Scale: A Cross-National Generalized Export Performance Measure. *Journal of International Marketing*, 6(3), pp. 37-58.

APPENDICES

Regression

Export Performance Vs. WCM

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.904 ^a	.818	.815	.39346

b. Predictors: (Constant), Mean of Working capital

ANOVA^a

Model	Sum of Squares	df	Mean Square	F	Sig.
1 Regression	40.324	1	40.324	260.473	.000 ^b
Residual	8.979	58	.155		
Total	49.303	59			

a. Dependent Variable: Mean of company's Export Performance

c. Predictors: (Constant), Mean of Working capital

Coefficients^a

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
1 (Constant)	.292	.118		2.477	.016
Mean of Working capital	.620	.038	.904	16.139	.000

a. Dependent Variable: Mean of company's Export Performance

Export Performance Vs. Cash, Inventory, Receivable and payable management

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.931 ^a	.867	.857	.34522

a. Predictors: (Constant), Mean of Payable, Mean of cash mgt, Mean of inventory, Mean of Receivable

ANOVA^a

Model	Sum of Squares	df	Mean Square	F	Sig.
1 Regression	42.748	4	10.687	89.674	.000 ^b
Residual	6.555	55	.119		
Total	49.303	59			

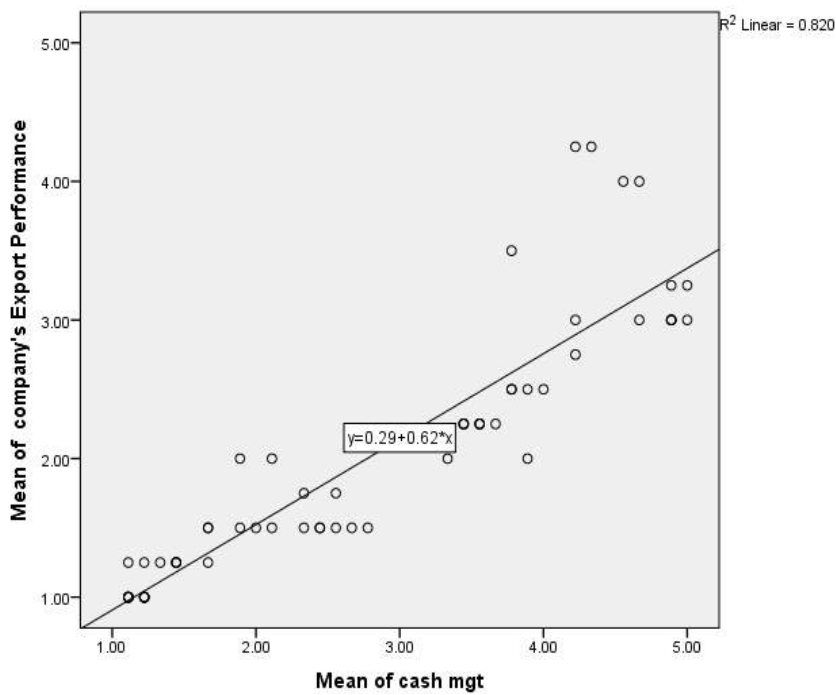
a. Dependent Variable: Mean of company's Export Performance

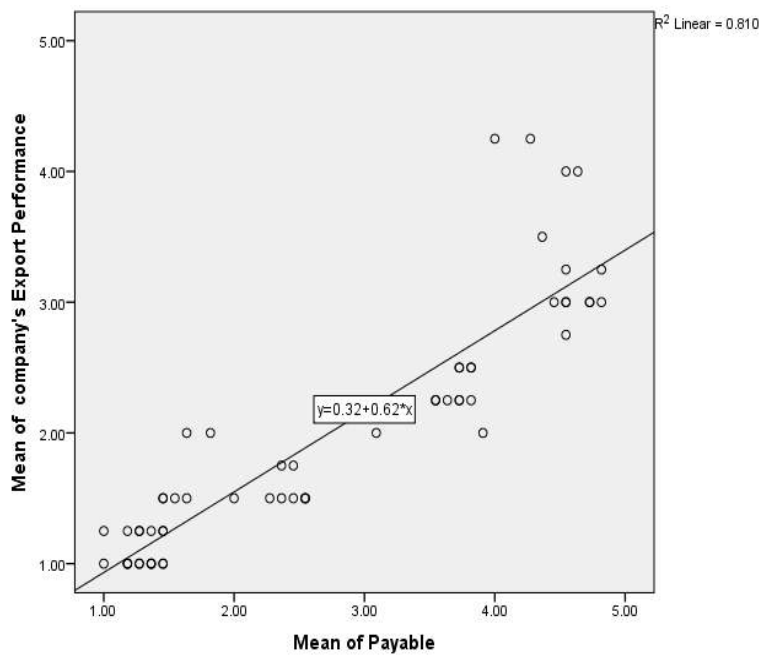
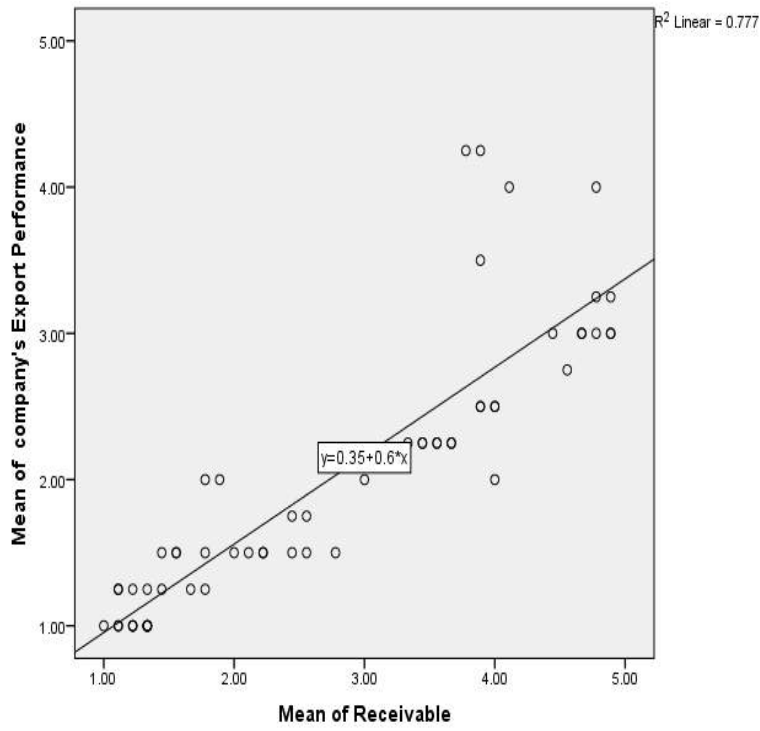
b. Predictors: (Constant), Mean of Payable, Mean of cash mgt, Mean of inventory, Mean of Receivable

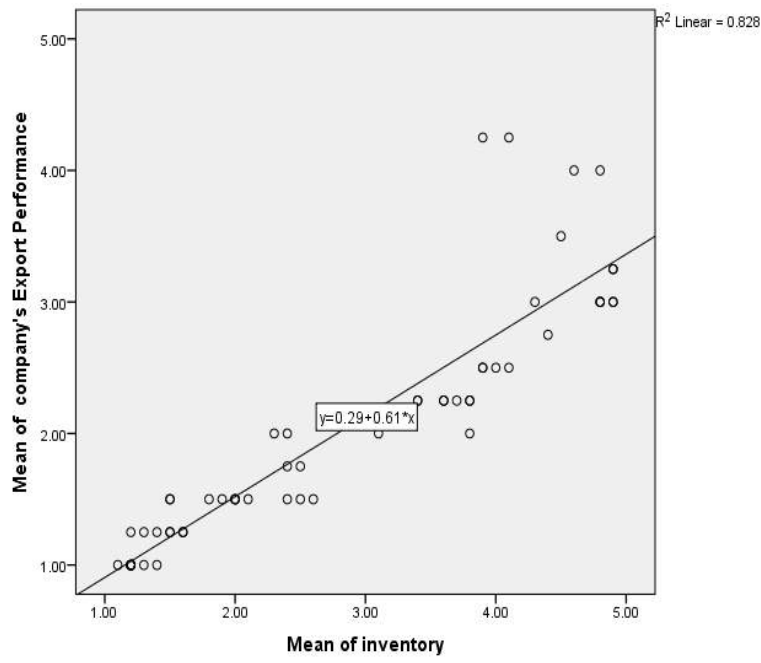
Coefficients^a

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
1 (Constant)	.279	.104		2.694	.009
Mean of cash mgt	.396	.207	.582	1.912	.061
Mean of Receivable	-1.143	.297	-1.665	-3.848	.000
Mean of inventory	.736	.245	1.090	2.999	.004
Mean of Payable	.620	.260	.906	2.384	.021

a. Dependent Variable: Mean of company's Export Performance







Quality of Intellectual Capital Disclosures: The Role of Market Share and Financial Distress in Thai's Agricultural and Resource Sectors

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Abstract

This study aims to examine the factors that influence the quality of intellectual capital disclosure (ICD). This study contributes to research related to ICD by using the value of the market share and financial distress as independent variables, in addition to the level of firm size. This study also tests the ICD in each of its components. Firm size is indicated by the amount of assets owned by the company; while market share is measured by the proportion of company sales in the total sales of one industry. Financial distress is indicated by the Altman-Z score, where the greater the Z-score, the safer the company from the risk of bankruptcy. ICD are more qualified if disclosures are supplemented by numerical and monetary data. The sample used is 50 agricultural and resource sectors companies registered in the Thai Stock Exchange from 2013-2017. This study finds that the quality of HCD is increasing along with the company's high assets. Market share can improve the quality of RCD, but on the other hand, reduce the quality of HCD. The safer the company from the bankruptcy risk, the higher the quality of the HCD. There are a variety of ICD measurements that can be used by subsequent research and are complemented by various other independent variables that can enrich empirical findings in ICD cases.

Keywords: Intellectual Capital Disclosure, Firm Size, Market Share, Financial Distress

1. Introduction

1.1 Introduction

In the current era of knowledge-based economy, intellectual capital (IC) plays an important role in enhancing competitiveness and performance of companies (Lev, 2001; Seetharaman et al., 2002; Massaro et al., 2015). Some studies recognize that IC has become the most important strategic asset in evaluating organizational performance in developing and developed countries (Khalique et al., 2011; Amrizah & Rashidah 2013; Ngah & Ibrahim, 2012, Massaro et al., 2015). Bontis (2001) stated that IC is the main resource that supports company value. More broadly, several studies show that IC significantly influences the company's financial performance and market value; and IC can also be considered as a financial indicator of the company in the future (Tan, et al., 2007; Cabrita & Bontis, 2008; Zeghal & Malooul, 2010; Clarke et al., 2011; Dženopoljac et al., 2016). IC disclosure can reduce errors in indications of bankruptcy or the sustainability of a company that can cause errors in the allocation of company

resources (Cenciarelli et al., 2013). Because IC has the potential to be a competitive advantage and added value for the company, IC is usually expressed through annual reports to stakeholders. This voluntary disclosure is then called Intellectual Capital Disclosure (ICD) (Eddine et al., 2015).

Firm size has been considered the main contingency factor that affects many aspects of organizational structure. The larger the size of the company, the level of complexity of the company will also increase (Donaldson, 2001). Several previous studies related company size to the scale of work performed by employees (Armstrong & Taylor, 2014; Davis & Henrekson, 1999; Pagano & Schivardi, 2003; Winter-Ebmer & Zweimüller, 1999). Davis & Henrekson (1999) found that there was a strong and systematic relationship between firm size and human capital. Large companies are considered capable of paying higher wages, therefore large companies are able to obtain better human capital (Oi & Idson, 1999, Fox & Smeets, 2011; López-Bazo & Motellón, 2011).

In addition to firm size, this study chooses market share to be the second factor that affects the quality of ICD. Eddine et al. (2015) found that company size, profitability, and industry type positively affected ICD. Companies with a dominant market share will tend to maximize profits. Market share is the company's strength in competing in certain industrial sectors. The higher the market share, the more companies are motivated to gain trust from external parties (Khlif and Souissi, 2010). Companies with good reputation and performance will reveal more information than companies whose reputation is relatively lower (Khlif and Souissi, 2010). The third factor that affects the quality of ICD in this study is financial distress. Some studies such as Wruck (1990), Andrade and Kaplan (1998), Whitaker (1999), used the definition of financial distress as an implication of a company's failure to fulfill its obligations. One of the triggers of financial distress is the high use of debt in funding. White et al. (2007) revealed that companies that have high leverage would more often disclose information voluntarily in order to reduce agency costs arising from the debts used. On the other hand, Mehrotra et al. (2017) found that leverage does not have a significant effect on the number of IC disclosures. Driven by the gap in the results of research on the effect of leverage on ICD, this study tries to examine the effect of financial distress on IC disclosure.

This study examines the quality of ICD 50 companies in the agriculture sector and resources listed in Stock Exchange Thailand (SET) in 2013 to 2017. Thailand was appointed as an agricultural country leader in Southeast Asia and incorporated in the IMT-GT or Indonesian Malaysia Thailand Growth Triangle. IMT-GT itself was established in 2013 with the aim of integration ahead of the ASEAN Economic Community (MEA). In accordance with a report from Forbes in 2017, the agricultural and resource sectors have become jobs for more than a third of Thailand's population. This research is expected to be able to reveal the quality of ICD in companies in the main sector industries in ASEAN's largest agricultural country, namely Thailand.

1.2 Literature Review

The legitimacy theory has the concept of a social relationship between the company and stakeholders. The company will voluntarily report its activities if management sees that this is what the people expect. Therefore, companies will be more responsive in their environment (Deegan, 2000). IC disclosure is closely related to this theory, where companies are more likely to express every activity carried out for human capital, structural or internal capital, and relational or external capital because they have a specific purpose. Any content from IC that is disclosed by management voluntarily has the purpose of gaining recognition from stakeholders (Kamath, 2017). The role of intangible assets, such as IC, in the current era of the knowledge economy, is becoming more prominent than tangible assets. More and more specialists support the argument that IC is an important element in achieving performance in an organization (Sydler et al., 2014).

1.3 Hypothesis Development

1.3.1 Firm Size and ICD

Bukh et al. (2005) and Bozzolan et al. (2006) concluded that firm size does not have a significant influence on IC content disclosed. In contrast to the two previous studies, Branco et al. (2011) state that company size is a determining factor in ICD. White et al. (2007); Yau et al. (2009); Ferreira et al. (2012); Utomo and Chariri (2015); and Mehrotra et al. (2017) found that there was a significant positive effect of firm size on the quality of IC disclosure. Singh and Zahn (2008) in their study, also found an influence of firm size on the quality of IC disclosure

in a case study in Australia. Specifically, Davis & Henrekson (1999) stated that there is a significant positive relationship between firm size and HC. Based on some empirical evidence, the first hypothesis in this study is: company size has a positive influence on the quality of ICD.

H1: Company size has a positive influence on the quality of ICD.

1.3.2 Market Share and ICD

Schwalbach (1991) states that market share affects the level of company competitive advantage. Market share is considered capable of being a representation of the number of consumers of a company. The greater the market share of a company, in accordance with the principle of *ceteris paribus*, then the needs of consumers will also be more complex as more and more diverse needs and types of consumers (Anderson et al., 1994; Hauser et al., 1994). Companies will also be increasingly difficult to meet customer needs, including the complexity of maximizing products and services due to diverse consumer demands (Griffin and Hauser, 1993). Thus, it is likely to be more difficult for companies with a larger market share to satisfy all customers because they face greater heterogeneous preferences (Fornell 1992; Griffin and Hauser 1993). Supporting those arguments, directors, management, and researchers still see market share as an important variable in determining customer loyalty, marketing effectiveness, and company performance (Farris et al. (2006); Baker & Sinkula (2005); Stank et al. (2003)). Rego et al. (2013) in their research stated that market share has a significant influence on relation capital as a part of ICD. At the last, this study determines the second hypothesis that market share has a positive affect on the quality of ICD.

H2: Market share has a positive effect on the quality of ICD.

1.3.3 Financial Distress and ICD

Webb and Cohen (2007) stated that companies in the pressure of financial distress pay more attention to the disclosure of information in company reports. According to Lo (2005), financial distress will affect the company's internal management to be more conservative. Be careful of uncertainty in recognizing an economic event so that the company's annual report will provide good benefits to all users of financial statements, including directors, consumers, shareholders, and other stakeholders. Wijantini (2006) revealed that companies that have higher financial distress would disclose more voluntary information in their annual report. Research on the effect of financial distress on ICD quality is still very limited, hence, this study takes financial distress to complement the results of empirical studies regarding factors that influence ICD quality. Therefore, the third hypothesis is that financial distress positively affects the quality of ICD.

H3: Financial distress positively affect the quality of ICD.

1.4 Control Variables

The control variables used in this study are return on assets (ROA) and leverage. Research conducted by Haji and Ghazali (2013) Eddine et al. (2015); Ousama et al. (2012) found that profitability has a significant effect on IC disclosure. Whereas Atan & Rahim (2012); Taliyang et al. (2011) argued that profitability has no significant effect on IC disclosure. Likewise with leverage, there are different results between the research by Ousama et al. (2012); Haji and Ghazali (2013) who found a significant relationship between leverage and quality of IC disclosure with research conducted by Whiting & Woodcock (2011); and Ferreira et al. (2012) which stated that leverage has proven to be insignificant in influencing the quality of IC disclosure.

2. Research Method

2.1 Samples

This study uses purposive sampling because the sample is not taken randomly but selected through certain specified criteria. The following are the criteria used during sample selection: (1). agricultural and resource sector companies that have been listed on the Thailand Stock Exchange (Stock Exchange of Thailand) in 2013-2017. (2). Annual reports on the company's website and Bloomberg data center must be completed for the period 2013-2017 and use English. Of a total of 59 agricultural sector companies and 65 resource sector companies, only 25 companies from the agricultural sector and 25 companies from the resource sector met the criteria for purposive

sampling. Thus the samples used in this study were 25 companies from the agricultural sector and 25 companies from the resource sector registered in SET in 2013-2017. The data used is complete panel data, with a total observation of 250 firm years.

2.2 Variable Measurement

The operational measurement of each variable is as follow:

- a. Intellectual Capital Disclosure (ICD) as the dependent variable. The disclosures of intellectual capital in three components:
 1. Human Capital (26 items). Human capital is the knowledge capital owned by individual employees based on education, experience, attitudes, and personal characteristics practiced in organizational activities. Elements of human capital are generally identified in the form of attitudes, commitment, employee satisfaction, educational qualifications, experience, management team, skills and abilities of employees (Curado et al., 2014; Muhammad and Ismail, 2009).
 2. Structural Capital (22 items). Internal or structural capital can be obtained because the processes and procedures are adopted and run by the organization since business practices began. These processes and procedures include habits, practices, processes, routines, information systems, work cultures, and databases (Curado et al., 2014; Abhayawansa and Azim, 2014). This structural capital can also consist of the culture, capabilities, and processes inherent in a company (Ahangar, 2011).
 3. Relational Capital (19 items). External or relational capital in business is a combination of relationships with customers, suppliers, competitors, government, society, and indirect business-related reputation due to transactions, products and services provided (Curado et al., 2014; Daou et al., 2014).

$$ICD = \Sigma (xHCDi + xSCDi + xRCDi)$$

Where:

$xHCDi$ = the average scores of human capital disclosure of a company

$xSCDi$ = the average scores of internal or structural capital disclosure of a company

$xRCDi$ = the average scores of external or relational capital disclosure of a company

Abeyssekera (2008) formulated an intellectual capital disclosure index using a range of 0 to 3. A score of 0 if not disclosed. Score 1 if expressed only in narrative form. Score 2 if expressed is in numerical form. A score of 3 if expressed is in monetary form, namely Baht (THB).

- b. Firm Size (FSize) as an independent variable is measured by Log Total Assets. Companies that have large total assets certainly have greater resources, so they have the ability to finance IC disclosures (Mehrotra et al., 2017).
- c. Market share is the company's strength in competing in certain industrial sectors. The higher market share supports companies to be more motivated to gain trust from external parties (Rego et al., 2013). The calculation of market share is measured by calculating the company's total sales of the total sales in the industry.
- d. Financial Distress (FDIST) as another independent variable is measured by Altman-Z score. Guimón (2005) and Al-Tamimi (2012) mentioned that ICD implies the companies' competitiveness which are red by the investors; therefore the higher the financial distress probability, the more information regarding the competitiveness should be disclosed in the annual report. Since the sample is part of the manufacturing sector, thus the formula is:

$$Z = 1.2X1 + 1.4X2 + 3.3X3 + 0.6X4 + 1.0X5$$

Where:

X_1 = working capital / total assets

X_2 = retained earnings / total assets

X_3 = earnings before interest and taxes / total assets

X_4 = market value of equity / total liabilities

X_5 = sales / total assets

The safe zone is when $Z > 2.99$; if $1.81 < Z < 2.99$, it is a gray area; and if $Z < 1.81$, it is a distress area

- e. There are two control variables employe in this study. First is profitability, which is measured by return on

assets (ROA). The second is leverage (LEV), which is the composition of total debts on total equity.

2.3 Research Model

This study examines the research model by using panel data multiple regression. Each hypothesis is tested three times for each component of ICD. Thus, the statistical model in this study is:

$$HCD, SCD, RCD_{i,t} = \beta_0 + \beta_1 FSIZE_{i,t} + \beta_2 MSHARE_{i,t} + \beta_3 FDIST_{i,t} + \beta_4 ROA_{i,t} + \beta_5 Lev_{i,t} + e \quad (1)$$

Before answering the hypothesis, the test that needs to be done is to determine the type of data panel to be used. From the fixed estimator effect test, if the p-value is $> 5\%$, then the right model is Ordinary Least Square (OLS). In the Breusch-Pagan test, if the p-value value shows less than 5% , then the right model is a random effect model. The last test is carried out if in the previous two tests shows that the data panel model leads to fixed effects and random effects, therefore a more appropriate model must be chosen. If the p-value of the Hausman test shows a value of less than 5% , then the right panel model is a fixed effect. Conversely, if more than 5% , then the right model is random effect.

3. Results and Discussion

3.1 Descriptive Analysis

High standard deviation (> 3) shows very high diversity. Table 1 shows the highest diversity of data in ROA; and the lowest diversity is in the Market Share. In addition, the average condition of the company in this observation is in the gray zone, because the average Z-score is more than 1.81 but less than 2.99. There is also a period where the company has no debt in funding and the period in which the company suffered losses.

Table 2 shows the average disclosure of each ICD component in criteria 0–3. From 2013–2017 it can be seen that most companies disclose HC, SC, and RC with a score of 1, in other words, the majority of items in the ICD are expressed in narrative form, especially in the SCD indicator. The highest quality of disclosure is in the RCD component, indicating that quite a number of items in the RCD are supported by monetary data. Most disclosures supported by numerical data are on the HCD indicator.

Table 1. Descriptive Statistic

Variabel	MEAN	STD	MIN	MAX
MShare	0.035314	0.0977722	0.0001	0.6066
Altman-Z	2.49761	2.57844	-16.577	14.7631
FSize	12.747162	0.7999686	11.286434	14.969066
Lev	0.9933116	2.5717752	0	38.9372
ROA	6.11924	6.8551972	-34.66	25.63

Tabel 2. The Total Score of ICD

	Score	HCD	SCD	RCD
	0	60.57	47.45	58.94
TOTAL	1	134.20	136.14	96.22
2013 - 2017	2	38.73	34.50	29.33
	3	16.46	31.91	65.44

3.2 Multiple Regression Analysis

Table 3. P-Values of Ordinary Least Square (OLS) and Panel Model Tests

	HCD	SCD	RCD	VIF
Firm Size	0.0003***	0.1437	0.1986	1.599
Market Share	0.0392**	0.6788	0.4327	1.581
Financial Distress	0.0017**	0.7496	0.6488	1.427
Profitability	0.4637	0.1352	0.3486	1.167
Leverage	0.0104**	0.0130**	0.6215	1.150
P-Value (F)	4.50e-06	0.035918	0.237777	
Adjusted R-square	0.111382	0.030197	0.008248	
Heterokedasticity (p-value of <i>chi-square</i>)	0.022128	0.582854	0.0335243	
Fixed Estimator	0.00028772	4.17E-16	1.04E-28	
Breusch-Pagan Test	0.000400313	7.45E-23	6.00E-40	
Hausman Test	0.293286	0.0914816	0.0195999	
Summary	Random Effect	Random Effect	Weighted Least Square	

*p-values < $\alpha = 10\%$; ** p-values < $\alpha = 5\%$; ***p-values < $\alpha = 1\%$

Table 3 shows the test results with the basic model, namely OLS, which will be the basis for the classic assumption test and the determination of the panel model. The Variance Inflation Factor (VIF) value for each variable is at the level of less than 10, and then the variable is free from multicollinearity. The p-value values of the chi-square HCD and RCD models are at levels less than 0.05, indicating that the residuals of the two models contain heterocedasticity. Furthermore, the results of testing the panel model show that the model with the RCD variable depends on the fixed effect panel model, but because it contains heterocedasticity, the panel model testing uses weighted least square.

Table 4. Regression Models

Variabel	HCD	SCD	RCD
Constanta	-0.220591	0.07327	0.84049***
Firm Size	0.0894301***	0.08110	0.01477
Market Share	-0.440334*	-0.207082	0.71209***
Financial Distress	0.0225382***	-0.00190386	0.00151
Profitability	0.000353456***	-0.00230235	-0.000701923
Leverage	-0.000184726***	-0.000198590***	-6.98568e-06
Panel Model	Random	Random	WLS
F-test & Asymptotic test Statistic (p-value)	0.00028772	4.17E-16	1.04E-28
R-Square	13.06%	4.05%	5.48%

*p-values < $\alpha = 10\%$; ** p-values < $\alpha = 5\%$; ***p-values < $\alpha = 1\%$

Hypothesis testing is done by looking at the existence of a partial relationship between the dependent variable and the independent variable. Table 4 shows that all hypotheses are accepted for certain ICD components. In the first hypothesis, FSize has a positive influence on all ICD components, but only has a significant effect on HCD. The more assets the company has, the more HCD items are supported by monetary data. The results of this study are supported by Davis & Henrekson (1999); White et al. (2010); Branco et al. (2011); Ferreira et al. (2012); Utomo and Chariri (2015); and Mehrotra et al. (2017) which states that companies will be better at disclosing items in the ICD when they have adequate resources, because voluntary disclosure also requires costs. Davis and Henrekson (1999) revealed a strong and systematic relationship between firm size and human capital. Large companies are able to pay higher wages, so they are able to get better human capital (Fox & Smeets, 2011; López-Bazo & Motellón, 2011). The HCD index used in this study seeks to express the quality, competence, achievements, and achievements of employees in the company. This research shows that large companies will tend to employ employees with relatively good quality. Indirectly the directors of the company will have the confidence to disclose HC in the annual report because they feel they have a reputation and good quality of employees.

In the second hypothesis, market share has a significant effect on HCD and RCD. However, MShare has a significant negative effect on HCD. Companies that have gained legitimacy from external parties, including customers, are likely to tend to reduce their voluntary disclosure to outsiders, because companies no longer have specific needs to convince the market of its reputation (Guthrie et al., 2004). Furthermore, it is shown that the high and low market share of a company does not affect the disclosure of structural capital information. The results of this study indicate that companies still limit SC disclosure as privacy, which only needs to be disclosed to certain boundaries or criteria. On the other hand, MShare has a significant positive effect on RCD. The RCD index in this study is indirectly related to the market share variable, because some items that need to be disclosed in an RCD are the company's efforts to increase market share. Examples include company relationships with customers, the ability to produce innovations or new products. Evident from Table 5, the index that is best expressed in succession in RCD is the value of the company's shares, profitable contracts, licensing agreements, business collaborations, and financial relations. Companies with a high market share tend to disclose information about market value, contracts, or relationships with interested parties. As a step to maintain strength in the industry, companies tend to disclose information about the company's strength compared to other companies in the same sector both in terms of market value and relations and contracts in the future.

Table 5. Ranking of the Quality of ICD

Human Capital		Structural Capital		Relation Capital	
1	Appreciate employee	1	Achievements	1	Value of the company's shares
2	Expert seniority	2	Information system	2	Profitable contracts
3	Expert teams	3	Corporate governance	3	Licensing agreement
4	Employee training	4	Research and development	4	Business collaborations
5	Training & development	5	Organizational flexibility	5	Financial relations
6	Work experience	6	Technology	6	Market share
7	Personnel	7	Strategy	7	Customers
8	Employee development	8	Organizational learning	8	Goodwill
9	Employee retention	9	Quality	9	Customer service
10	Employee safety and health	10	Organizational & management structure	10	Corporate image and reputation
11	Human resources	11	Intellectual property	11	Customer retention
12	Working environment	12	Innovation	12	Company's name
13	Employee performance	13	Organizational & business expertise	13	Customer appreciation
14	Division qualification	14	Management process	14	Brand development

15	Educational qualifications & management team	15	Network system	15	Brand recognition
16	Employee know-how	16	Management philosophy	16	Customer feedback system
17	Equality issues	17	Copyright	17	Brands
18	Performance and Results from Senior Executives	18	Corporate culture	18	Franchising agreements

Webb, and Cohen (2007) state that companies with poor financial performance will tend to reduce disclosure of information in annual reports with the aim of avoiding bankruptcy. Supporting the research, this study shows a significant positive impact of financial distress on HCD. Companies with Altman-Z scores that are high or closer to safety zones indicate that the company has good financial performance. The company has adequate resources to ensure the welfare of its employees, besides that the company also tends to complete the information in the annual report. This study did not find a significant relationship between financial distress on SCD and RCD. The company's height or low Altman-Z score does not affect SC and RC disclosures. Of the three types of variables tested, SC disclosure is not influenced by any variable. This hypothesis shows that in disclosures related to structural capital, companies tend to have been limited to certain criteria. Related to RC, the Altman-Z score will not affect the disclosure of information related to external parties. Because in essence RC disclosure is a form of corporate transparency to external parties.

Supporting previous research conducted by Taliyang, Latif, & Mustafa (2011), research shows that there is no significant relationship between profitability (ROA) and ICD components. ROA does not have a significant effect on the components of HCD and SCD, and RCD so it can be concluded that the high and low profitability of the company does not affect the high and low quality of ICD in the company's annual report. This study contrasts with the research conducted by Ousama et al. (2012); Haji & Ghazali (2013); and Khelif & Souissi (2010) who stated the influence of profitability on ICD.

Regarding leverage, previous research found that leverage cannot influence the overall components of the ICD (Whiting & Woodcock, 2011; Ferreira et al., 2012). In this study, RCD is the only ICD component that is not influenced by leverage. These results indicate that debtors are more interested in information related to human capital and structural capital, which are the components most closely related to a company's ability to generate profits and cash (Ferreira et al., 2012). This study shows a significant negative relationship between leverage against HCD and SCD. Bakar & Isaac (2017); Ousama et al. (2012); Haji and Ghazali (2013) support the results of this study. The smaller level of leverage indicates that a company is able to operate with its own funds. Companies with good financial performance have the potential to increase HC and SC disclosures.

4. Conclusion

Intellectual capital disclosure is an intangible asset that is considered by stakeholders as an aspect of today's modern economy. The purpose of this study is to determine the relationship between firm size, market share, and financial distress to intellectual capital disclosure. The sample from this study is 50 companies listed in the Thai Stock Exchange. This study finds that HCD components are influenced by firm size, market share, and financial distress. Whereas RCD is only influenced by market share, and SCD is only influenced by the leverage, which is a control variable.

The company is expected to be able to answer the questions of investor needs through an informative annual report. Intellectual capital disclosure is a new requirement as a provision of knowledge for external parties to the company. Presenting informative annual reports through good IC disclosure can be a positive signal for investors in the market. This study finds that the highest quality of ICD is disclosure in the form of narration, which was 49%. In the future, the company is expected to be able to reveal indexes of ICDs more complex in the form of numerical or monetary data. Investors are expected to be able to analyze carefully the signals provided by the company

through ICD disclosures. Informative reports regarding ICD information can be a good signal for investors because companies are more transparent to external parties. ICD quality is expected to be a reference for investors in making decisions before investing. It can be seen that the market share variable is the only variable that affects RCD. This proves that the company's ability to control the market will actually encourage management to disclose its activities related to external parties, even equipped with numerical and monetary data. But the overall informative IC disclosure is able to describe the company's transparent situation. Companies that are transparent in presenting their financial information will make it easier for investors to make investment decisions.

The limitation in this study is the use of secondary data with a scoring method that is limited to the company's annual report. The method in this study is limited to the completeness and language of the company's annual report. Thus it is expected that further research can use the method of using primary resources by conducting interviews or questionnaires to the directors regarding the application of ICDs to complement the qualitative results of the statistical method. The R-Squared values of the three independent variables are HCD 12.86%, SCD 4.2%, and RCD 5.48%. Future studies are expected to expand empirical ICD research by examining the relationship of other variables to the ICD and are expected to be able to obtain greater R-squared. Development of research on the ICD can be done using different time framing, diverse company sectors, and different countries.

References

- Abeyssekera, I. (2008). Intellectual capital disclosure trends: Singapore and Sri Lanka. *Journal of Intellectual Capital*, 9(4), 723-737.
- Abhayawansa, S., & Azim, M. (2014). Corporate reporting of intellectual capital: Evidence from the Bangladeshi pharmaceutical sector. *Asian Review of Accounting*, 22(2), 98-127.
- Ahangar, R. G. (2011). The relationship between intellectual capital and financial performance: An empirical investigation in an Iranian company. *African Journal of Business Management*, 5(1), 88 – 95.
- Al-Tamimi, H.A.H. (2012). The effects of corporate governance on performance and financial distress: the experience of UAE national banks. *Journal of Financial Regulation and Compliance*, 20(2), 169-181.
- Amrizah, K., & Rashidah, A. R. (2013). Intellectual capital profiles: Empirical evidence of Malaysian companies Kamaluddin & Rahman. *International Review of Business Research Papers*, 9(6), 83–101. Retrieved December 18, 2018, from <http://irbrp.com/static/documents/November/2013/6.Amrizah.pdf>
- Anderson, E. W., Fornell C., & Lehmann D. R. (1994). Customer satisfaction, market share, and profitability: Findings from Sweden. *Journal of Marketing*, 58(7), 53–66.
- Andrade, G., & Kaplan, S. N. (1998). How costly is financial (not economic) distress? Evidence from highly leveraged transactions that became distressed. *The Journal of Finance*, 53(5), 1443-1493.
- Armstrong, M. & Taylor, S. (2014). *Armstrong's handbook of human resource management practice*. London: Kogan Page Publishers.
- Atan, R. & Rahim, A. (2012). Corporate reporting of intellectual capital: Evidence from Ace Market of Bursa Malaysia. SHUSER 2012 - 2012 IEEE Symposium on Humanities, Science and Engineering Research. 1021-1026. 10.1109/SHUSER.2012.6268779.
- Baker, W.E., & Sinkula, J.M. (2005). Market orientation and the new product paradox. *Product Innovation Management*, 22(6), 483-502.
- Bontis, N. (2001). Assessing knowledge assets: a review of the models used to measure intellectual capital. *International Journal of Management Reviews*, 3(1), 41-60.
- Bozzolan, S., O'Regan, P., & Ricceri, F. (2006). Intellectual capital disclosure (ICD). *Journal of Human Resource Costing & Accounting*, 10(2), 92–113.
- Branco, M. C., Delgado, C., Sousa, C., & Sá, M. (2011). Intellectual capital disclosure media in Portugal. *Corporate Communications*, 16(1), 38–52.
- Bukh, N.P., Nielsen, C., Gormsen, P., & Mouritsen, J. (2005). Disclosure of information on intellectual capital in Danish IPO prospectuses. *Accounting, Auditing & Accountability Journal*, 18(6), 713–732.
- Cabrita, M. D. R., & Bontis, N. (2008). Intellectual capital and business performance in the Portuguese banking industry. *International Journal of Technology Management*, 43(1-3), 212-237.
- Cenciarelli, V.G, Greco, G & Allegrini, M. (2013). Does intellectual capital help predict bankruptcy? *Journal of Intellectual Capital*, 19(2), 321-337.
- Clarke, M., Seng, D., & Whiting, R. H. (2011). Intellectual capital and firm performance in Australia. *Journal of Intellectual Capital*, 12(4), 505-530.
- Curado, C., Guedes, M.J. and Bontis, N. (2014). The financial crisis of banks (before, during and after): an intellectual Capital perspective. *Knowledge and Process Management*, 21(2), 103-111.

- Daou, Alain, Karuranga, Egide, and Su, Z. (2014). Towards a better understanding of intellectual capital in Mexican SMEs', *Journal of Intellectual Capital*, 15(2), 316-32.
- Davis, S. J., & Henrekson, M. (1999). Explaining national differences in the size and industry distribution employment. *Small Business Economics*, 12(1), 59-83.
- Deegan, C.M. (2000). *Financial Accounting Theory*. Sydney, NSW: McGraw-Hill Book Company.
- Donaldson, L. (2001). *The Contingency Theory of Organizations*. Sage: Thousand Oaks, CA.
- Dženopoljac, V., Janošević, S., & Bontis, N. (2016). Intellectual capital and financial performance in the Serbian ICT industry. *Journal of Intellectual Capital*, 17(2), 373-396.
- Eddine, C. O. H., Abdullah, S. N., Hamid, F. A., & Hossain, D. M. (2015). The determinants of intellectual capital disclosure: A meta-analysis review. *Journal of Asia Business Studies*, 9(3), 232-250.
- Farris, P.W., Bendle, N.T., Pfeifer, P.E., Reibstein, D.J.(2006). Metrics: The definitive guide to measuring marketing performance. Retrieved March 22, 2019, from <http://ptgmedia.pearsoncmg.com/images/9780137058297/samplepages/9780137058297.pdf>.
- Ferreira, A.L., Branco, M.C., Moreira, J.A. (2012). Factors influencing intellectual capital disclosure by Portuguese companies. *International Journal of Accounting and Financial Reporting*, 2, 278-298.
- Forbes. (2017). Best countries for business. *Thailand*. Retrieved January 10, 2019 from <https://www.forbes.com/places/thailand/>
- Fornell, C. (1992). A national customer satisfaction barometer. *Journal of Marketing*, 56 (January), 6-21.
- Fox, J. T., & Smeets, V. (2011). Does input quality drive measured differences in firm productivity? *International Economic Review*, 52(4), 961-989.
- Griffin, A. and Hauser J. R. (1993). The voice of the customer. *Marketing science*, 12 (Winter), 1-25.
- Guimón, J. (2005). Intellectual capital reporting and credit risk analysis. *Journal of Intellectual Capital*, 6(1), 28-42.
- Guthrie, James., Petty, R. and Yongvanich, K. (2004). Using content analysis as a research method to inquire into intellectual capital reporting. *Journal of Intellectual Capital*, 5(2), 282-293.
- Haji, A. A., & Ghazali, N. A. M. (2013). A longitudinal examination of intellectual capital disclosures and corporate governance attributes in Malaysia. *Asian Review of Accounting*, 21(1), 27-52
- Hauser J. R., Simester D. I., & Wernerfelt B. (1994). Customer satisfaction incentives. *Marketing Science*, 13 (Fall), 327-50.
- Kamath, B. (2017). Determinants of intellectual capital disclosure: Evidence from India. *Journal of Financial Reporting and Accounting*, 15(3), 367-391.
- Khalique, M., Shaari, J. A. N., Md. Isa, A. H., & Ageel, A. (2011). Role of intellectual capital on the organizational performance of electrical and electronic SMEs in Pakistan. *International Journal of Business and Management*, 6(9), 253-257. doi:10.5539/ijbm.v6n9p253
- Khlif, H. and Souissi, M. (2010). The determinants of corporate disclosure: A meta-analysis. *International Journal of Accounting & Information Management*, 18(3), 198-219.
- Lev, B. (2001). *Intangibles: Management, measurement, and reporting*. Washington, D.C.: Brookings Institution Press. Retrieved from <http://www.jstor.org/stable/10.7864/j.ctvcj2rf2>
- Lo, E.W.(2005). Pengaruh tingkat kesulitan keuangan terhadap konservatisme akuntansi. Retrieved March 25, 2019, from: <https://smartaccounting.files.wordpress.com/2011/03/kakpm-25.pdf>.
- López-Bazo, E., & Motellón, E. (2011). *Human capital and regional wage gaps*. *Regional Studies*, 46(10), 1347-1365.
- Massaro, M., Dumay, J., & Bagnoli, C. (2015). Where there is a will there is a way: IC, strategic intent, diversification and firm performance. *Journal of Intellectual Capital*, 16(34), 90-517.
- Mehrotra, V., Malhotra, A. K., & Pant, R. (2017). Intellectual capital disclosure by the Indian corporate sector. *Global Business Review*, 19(2), 1-17.
- Muhammad, N.M.N. and Ismail, M.K.A. (2009). Intellectual capital efficiency and firm's performance: Study on Malaysian financial sectors. *International Journal of Economics and Finance*, 1(2), 206-212.
- Ngah, R., & Ibrahim, A. R. (2012). The relationship of intellectual capital, innovation and organizational performance: A preliminary study in Malaysian SMEs. *9th World Congress of the Academy for Global Business Advancement (AGBA)*, 9(1), 593-596.
- Oi, W. Y., & Ison, T. L. (1999). Firm size and wages. *Handbook of Labor Economics*, 3, 2165 -2214.
- Ousama, A.A., Fatima, A., Hafiz-Majdi, A. (2012). Determinants of intellectual capital reporting: Evidence from annual reports of Malaysian listed companies. *Journal of Accounting in Emerging Economies*, 2(2), 119-139.
- Pagano, P., & Schivardi, F. (2003). Firm size distribution and growth. *The Scandinavian Journal of Economics*, 105(2), 255-274.
- Rego, L. L., Morgan, N. A., & Fornell, C. (2013). Rexamining the market share-customer satisfaction relationship. *Journal of Marketing*, 77(5), 1-20.
- Schwalbach, J. (1991). Profitability and market share: A reflection on the functional relationship. *Strategic Management Journal*, 12(4), 299-306.

- Seetharaman, A., Helmi B. Z. S. H., & Saravanan, A. S. (2002). Intellectual capital accounting and reporting in the knowledge economy. *Journal of Intellectual Capital*, 3(2), 128-148.
- Singh, I., & Van der Zahn, M. (2008). Determinants of intellectual capital disclosure in prospectuses of initial public offerings. *Accounting and Business Research*, 38(5), 409-431.
- Stank, T.P., Goldsby, T.J., Vickery, S.K., & Savitskie, K. (2003). Logistics service performance: Estimating its influence on market share. *Journal of Business Logistics*, 24(1), 27–55.
- Sydler, R., Haeffliger, S., & Pruksa, R. (2014). Measuring intellectual capital with financial figures: Can we predict firm profitability? *European Management Journal*, 32(2), 244–259.
- Tan, P. H., Plowman, D., & Hancock, P. (2007). Intellectual capital and financial returns of companies. *Journal of Intellectual Capital*, 8(1), 76-95.
- Taliyang, S. M., Latif, R. A., dan Mustafa, N. H. (2011). The determinants of intellectual capital disclosure among Malaysian listed companies. *International Journal of Management and Marketing Research*, 4(3), 25–33
- Utomo, A. I., & Chariri, A. (2015). Faktor-faktor yang mempengaruhi pengungkapan modal intelektual dan dampaknya terhadap nilai perusahaan. *Simposium Nasional Akuntansi XVIII*.
- Webb, L. H., & Cohen, J. R. (2007). The association between disclosure, distress, and failure. *Journal of Business Ethics*, 75, 301–314.
- Whitaker, R. B. (1999). The early stages of financial distress. *Journal of Economics and Finance*, 23(2), 123-132.
- White G., Lee., A., & Tower, G. (2007). Drivers of voluntary intellectual capital disclosure in listed biotechnology companies. *Journal of Intellectual Capital*, 8(3): 517-537.
- Whiting, R. H., & Woodcock, J. (2011). Firm characteristics and intellectual capital disclosure by Australian companies. *Journal of Human Resource Costing & Accounting*, 15(2), 102–126.
- Winter-Ebmer, R., & Zweimüller, J. (1999). Firm-size wage differentials in Switzerland: Evidence from job-changers. *American Economic Review*, 89, 89-93
- Wijantini (2006). Voluntary disclosure in the annual reports of financially distressed companies in Indonesia. *Gadjah Mada International Journal of Business*, 8(3), 343-365.
- Wruck, K. H. (1990). Financial distress, reorganization, and organizational efficiency. *Journal of Financial Economics*, 27(2), 419-444.
- Yau, F.S., Chun, L.S., & Balaraman, R. (2009). Intellectual capital reporting and corporate characteristic of public-listed companies in Malaysia. *Journal of Financial Reporting & Accounting*, 7(1), 17-35.
- Zeghal, D., & Maaloul, A. (2010). Analysing value added as an indicator of intellectual capital and its consequences on company performance. *Journal of Intellectual Capital*, 11(1), 39– 60.

Notes

Note 1. Multiple Regression Formula

Efficiency of Lebanese and Arab Gulf Financial Markets

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Abstract

Various studies have been made to test the efficiency of market in Lebanon and Arab Gulf States (AGS) theoretically and empirically, focusing mainly on building a model using the conventional finance. The purpose of this paper is to test the efficiency of AGS financial markets as well as the Lebanese one based on stationary method; furthermore it explores the reasons behind the non-efficiency in case it exists. However, to realize this objective, this paper overviews the different methods behind testing efficiency in order to choose and use the most common one, furthermore it studies also the Volatility using ARCH and GARCH and the Financial Characteristics behind each market, which leads to either enhance or reduce market efficiency so far. Findings prove that Lebanese, Abu Dhabi, Qatar, and Kuwait markets tend to be efficient in its weak form whereas Dubai, Saudi Arabia and Amman markets are non-efficient based on the average monthly data series and financial characteristics of the market over a specific period of time.

Keywords: Weak Form Market Efficiency, Volatility, Market Capitalization, Traded Volume, Unit Root Test, Random Walk Theory.

1. Introduction

Market Efficiency has been linked to many features in different domains. However, finance has been especially interested in “Informational efficiency”. Where market efficiency is considered as the moderate concept of perfect market, that’s to say rational way of thinking is widely spread between investors during investment decision process leading to efficiency in the financial markets.

Fama (1965) the founder of market efficiency theory, defines the efficient market as being a market where “prices fully reflect all known information in a way that even uninformed investors exchanging a diversified portfolio at the tableau of given prices by the market will obtain a rate of return as generous as that achieved by the experts”. In other terms, a market is efficient when the intrinsic value of the stocks reveals correctly the information. Fama’s definition of market efficiency has been largely supported by theoreticians (Malkiel, 1992).

Three main categories of the market can be considered (weak form efficiency, Semi strong form efficiency where all the publically information is considered in addition to some insider information, and the strong form efficiency where all public and private information are revealed in stock prices). Weak form efficiency market is the most important form followed by researchers, as the historical data and path of the stock is the main key behind predicting its future prices (Fama, 1970). Samuelson (1965) have stated that ,when future prices of securities in the market are being randomly assigned and not based on the historical trend of the stocks; the market is efficient in its weak form. In other terms, the market is efficient in the weak form when prices follow a random Walk process.

A large body of research, using econometric test including unit root analysis, and variance ratio frame work, suggests that Developed markets are being efficient in weak form (Choudhry, 1994; Chan and Pan, 1997; linowski, 2005; Maria, 2007; shiller and radikoko, 2014); whereas emerging markets tend to be non- efficient (Pant and Bishnoi, 2002; Smith, 2007; Vigg et al, 2008).

However, when market is efficient it usually attracts various investors to channel big amount of funds into numerous profitable projects enhancing economic growth. As results, efficiency is positively related to economic growth (King and Levine,1993; Pagano,1993; loayza and beck,2000;Equakun,2005).On the other hand, when markets tends to be “inefficient”, speculators are attracted to it ,as a result market fluctuations control all over, hence volatility increases and financial bubble is constituted (Ewah et al,2009).

The purpose of this paper is to investigate the efficiency of Arab Gulf State financial markets as well as Lebanese financial market .Furthermore this research investigates the financial characteristics for each market impacting efficiency, to realize this objective this paper overviews the main methods for testing efficiency, in addition to that this paper studies the Volatility and Financial Characteristics behind each market impacting its efficiency. The paper is organized as follows: Section 2 presents the related literature background. Section 3 overviews Market efficiency and the random walk model. Section 4 investigates the available methods for testing efficiency. Section 5 analyzes market Volatility. Section 6 presents efficiency test results and results analyses for Lebanese and Arab Gulf States financial markets, ending up with general conclusion in section 7.

2. Market efficiency in the literature

Wide researches analyze the market efficiency and its relation to economic growth for developed and emerging countries. However Lebanese and AGS financial market studies are limited as a result this study aims to bridge the presented gap.

Market efficiency has been examined mainly by the mid of 1970's by the famous Eugene Fama, who explained that capital market efficiency, means that the stock prices reflects fully and correctly all relevant information which implies that stock prices are responding to all the information set coming from sudden economic and political conditions by adjusting prices. Otherwise, many developed researches have appeared. Chan, Gup and Pan (1997) tested the weak form market efficiency for numerous international stock indices, collecting 384 monthly observations from 1962-1992. Using serial correlation and Run tests, they proved that weak form market efficiency exists clearly in all the studied markets. However, Choudhry (1994) has tended to analyze the weak form efficiency market for seven members of the OECD organization using co-integration test for monthly stock indices from 1953-1989. Results have confirmed the presence of efficiency in these seven countries. However, Portuguese stock markets has been analyzed over the period of 1993-2008 using serial correlation test for daily, weekly and monthly returns, where Portuguese stock market has been moving toward random walk (Maria,2007).

Subsequently, large literature has been considered on the other side for emerging markets based on various theoretical and empirical linkages. Mohammad Omran (2006) and Suzanne v. Farrar (2006) have studied the efficiency of Egypt, Jordan, morocco, turkey markets using variance ratio and auto correlation. Their research provides a limited support for week form efficiency in Middle Eastern emerging markets. However, Smith (2007) has tested the weak form market efficiency for five stocks in the middle east, using multiple variance ratio test, where it appeared that Lebanese and Jordan stock markets tends to be efficient in its weak form and follows random

walk ; whereas Kuwait and Oman doesn't appear to follow the random walk hypothesis. Nevertheless, Rengasamy Elango and Mohamad Hussein (2007) have studied the efficiency in Dubai, Saudi Arabia, Abu Dhabi, Qatar, Kuwait, Oman and Bahrein covering the period 2001- 2006 by utilizing the run test, KS test, auto-correlation in order to analyze the daily stock index return of these markets where large variations in return has appeared over the assigned period, indicating that the markets are not efficient in the weak form. furthermore; Batool Asiri (2008) and Rakain Gupta (2007) studies the presence of weak form efficiency in the Indian financial market over the period 1990-2006 based on monthly Data series ,using Autocorrelation and unit root test (phillips-perron, ADF and KPSS) where it appeared that the Indian market is not a weak form efficient one. However, obtaining different results for the same market in different studies doesn't mean that there exists contradiction in findings, but on the other side this difference may be due to the type of the used data over a certain period of time while applying different tests.

Unlike most of the existing literature that have been studying the efficiency in the middle eastern markets; this paper goes through an overview to investigate the different methods for testing efficiency in Lebanon and AGS financial markets in order to use the most convenient one to our study; However Volatility and financial characteristics of these markets will be taken into account in order to support the results obtained. All tests are carried out with E-views.

3. Market Efficiency and random walk Model

The term of random walk model has appeared in the beginning by Jules Regnault, (1863) and has begun to be extensively investigated and tested by Louis Bachelier, (1964). However, the period around 1990's new thoughts have been considered regarding behavioral Finance that was known as being the modern theory, where it started contradicting the Random walk theory, by focusing on the impacts of investors' behaviors. Some of the authors that denied the random walk in their articles were (Lo and MacKinley, 1999; Lo, Mamaynski and Wang, 2000). One from the most important models for testing the behaviors of the stock prices was the "Random walk model"; as TheRandomwalkhypothesisconsiders that futurechangesofprices cannot beanticipated. However, an increase of prices in a particular day does not mean an increase or diminish within the day after. Moreover in a random walk Market the series of stock market prices changes are independent, and the efficiency idea is based mainly on no excessive profit ; that means the series of stock market prices changes are independent, thus Historical data of prices can't be used to predict the future (Brealey et al, 2005).

In 2004, Cuthbertson and Nietzsche have tended to define random walk with a drift (δ) where the individual Stochastic series X_t behaves as:

$$X_t = \delta + X_{t-1} + \varepsilon_{t+1} / \varepsilon_{t+1} \sim iid(0, \sigma_\varepsilon^2) \quad (1)$$

Where the "Drift" can be considered as the weighted average of the probabilities of each price of the stock.

4. Methods for testing Market Efficiency

From the definition of efficiency, various statistical tests can be done in order to know whether Lebanese and Arab Gulf state markets are considered efficient or not, by analyzing the average monthly database regarding stock market indices.

A. Testing efficiency using Random Walk test

Cooray and Wiskremasingue (2005) used the unit root test in order to test for weak form efficiency in different countries (India, Sri-lanka, Bangladesh) where they found that these markets are efficient. Moreover, Smith (2006) has used the same method to to test for efficiency in its weak form through European countries, where it has recorded a great support for Random walk.

The most famous Random walk tests for Stationarity in the time series data are:

- Augmented Dickey fuller-ADF, Phillips-Perron test with $Y_t = \mu + \alpha t - 1 + \epsilon_t$ (2) and Zivot- Andrews tests were used in order to test for the same null hypothesis which is:
H0: Unit root is presented in the Data series understudy.
- Whereas KPSS test $Y_t = \xi_t + r_t + \epsilon_t$ where $r_t = r_{t-1} + u_t$ (3) tests for the null hypothesis which indicates that :
H0: No unit root or Stationarity in the time series understudy.

The results are decided based on the “Rule of thumb” that’s to say if the calculated value statistic is greater than the critical value ; Null hypothesis will be rejected thus stationarity exists for ADF and PP tests and vice versa for KPSS.

B. Testing efficiency using Serial correlation (auto correlation)

Serial Correlation test has been used in order to examine the linear dependency of lagged price changes of returns especially in USA (jarrett, 2008). However, Butter and Malaikhe (1992) have adopted serial correlation test for Kuwait and Saudi markets, where it appeared that weak form efficiency is not supported in these markets. Allahyani (2009) used also serial correlation and Run test to examine the weak form efficiency for Tehran stock exchange (TSE) using weekly data over the period 1999-2005, where no existence for weak form efficiency market appeared.

Serial correlation has been one from the most used Statistical tests to explore weak form efficiency of the market, where it tends to measure the dependence of a variable on its past values, that’s to say measuring the relationship between the current stock price and its previous value; Statistically, the hypothesis of weak form efficiency should be rejected if stock returns (price changes) are serially correlated (r_k is significantly different from zero) (Taylor, 2014).

$$\rho_k = \frac{\sum_{t=k+1}^n (r_t - \bar{r})(r_{t-k} - \bar{r})}{\sum_{t=1}^n (r_t - \bar{r})^2} \quad (4)$$

Where r_k is the serial correlation coefficient of daily returns of lag k ; n is the number of observations; r_t is the stock return over period t ; r_{t-k} is the stock return over period $t-k$; \bar{r} is the mean of stock returns, and k is the lag of the period. r_t is measured as follows:

$$\epsilon_t = \frac{p_t - p_{t-1}}{p_{t-1}} = \ln p_t - \ln p_{t-1} \quad (5)$$

Where, r_t is the index of stock market in the period t , and r_{t-1} is the index of stock market in the period $t-1$. This test is frequently performed to test the joint hypothesis that all the r_k , up to certain lags, are simultaneously equal to zero, instead of testing the statistical significance of any individual autocorrelation coefficient (Gujarati, 2003).

C. Testing efficiency using Co-integration

Co-integration is an econometric technique for testing the correlation between non-stationary time series variables. If two or more series are themselves non-stationary, but a linear combination of them is stationary, then the series are said to be co-integrated and a long run relationship exists, thus weak form market efficiency appears to take place and prices in turn reflects fully and correctly the available information which leads to an increase in the economic growth so far.

Two time series X_t and Y_t are co integrated when there exists a number α_1 in the linear equation:

$$y_t = \alpha_1 x_t + v_t \quad (6) \quad \text{such that } V_t \text{ is a stationary process.}$$

“Linear relationships involving integrated nonstationary time series are meaningful only if the time series are co integrated. There are various definitions of co integration; as originally proposed by Engle and Granger. A co integrating relationship between two or more time series each having unit roots (I(1)) is defined to exist if there is a linear combination that is stationary, i.e., I(0)” (Edward Herranz, 2017).

D. Testing efficiency using Run Test

“The run test, as a non-parametric test used to detect the frequency of changes in the direction of a time series. Runs test is a strong test for randomness in examining serial dependence in asset price movements.

Runs are defined as the number of sequences of consecutive positive and non-positive (negative or zero) returns. When the expected number of runs is significantly different from the observed number of runs, the test rejects the null hypothesis that returns are random (Gu and Finnerty, 2002). To perform this test, the number of actual runs (R) is compared with the expected runs (m)

$$m = \frac{N(N+1) - \sum_{i=1}^3 n_i^2}{N} \quad (7)$$

Where, N is the number of observations (daily returns), i is the sign of +, -, or 0, and n_i is the number of observations in each run.

Then, the standard normal Z-statistic is used to test whether the actual number of runs is consistent with the random walk hypothesis which means that weak form efficient market exists. The standard normal Z- statistic is calculated as follows (Taylor, 2014):

$$Z = \frac{R - m \pm 0.5}{\sigma_m} \sim N(0,1) \quad (8)$$

“Where R is the actual number of runs, and 0.5 is continuity adjustment. When the actual number of runs exceed (fall below) the expected runs, the result will be a positive (negative) Z value. A positive (negative) Z value indicates negative (positive) serial correlation in the return series” (Abraham, Seyyed and Alsakran, 2002).

E. Chosen Method

This paper tests for weak form market efficiency in Lebanon and Arab Gulf States by adopting the most commonly and famous method, which is the “Random Walk model” including the ADF, Phillips-Perron and KPSS tests to investigate the presence or the absence for a unit root in the assigned data series.

5. Volatility measure and formation

After testing for Stationarity of return series, estimating equation 1 and 2, regarding the Volatility of the market would be necessary. Volatility can be defined as a statistical measure of the dispersion of returns for a given market index or security. It can be measured by variance or standard deviation between returns from that same market index or security. When the volatility is higher, the security becomes riskier. A high volatility market is a market where prices tend to change a lot over relatively a short time. The volatility is associated with the risk, uncertainty and unexpected. In other terms, volatility can be referred to the amount of uncertainty or risk about the size of changes in the value of security. It is considered as the difference between market price and economic

fundamentals that rationally justify the value of the assets concerned. The beta is a measure of volatility of a portfolio or a security in comparison to the market as a whole.

Volatility measure of index series is based on the returns of the data ($R_t = \log p_t - \log p_{t-1}$). Generalized Autoregressive Conditional Heteroscedasticity (GARCH) formulation which has been first suggested by Bollersley (1986) and has become popular, specially, due to its explanatory power for dependence in volatility tests if the variance of returns is stationary and whether index eventually return back to the mean value. It tests then an equation specification for the mean of the return series (9) and an equation for the conditional variance (10) of the returns:

$$R_t = \log p_t - \log p_{t-1} = c + \varepsilon_t \quad (9)$$

$$\sigma^2_t = \omega + \alpha \varepsilon^2_{t-1} + \beta \sigma^2_{t-1} \quad (10)$$

Where $\varepsilon_t \sim N(0, \sigma^2_t)$ and $\sigma^2_t = E(\varepsilon^2_t)$.

This specification is often interpreted in a financial context, when an agent trader predicts variance of this period by forming a weighted average of a long term average (the constant), the forecasted variance from last period (the ARCH term: α), and information about volatility observed in the previous period (the GARCH term: β). If the asset return was unexpectedly large in either the upward or downward direction, then the trader will increase the estimate of the variance for the next period.

6. Data Background

6.1. Data Source

The Data used in the proceeding part for the empirical study has been based on “Average monthly market indices” for Lebanon, Dubai, Abu Dhabi, Saudi Arabia, Kuwait, Amman and Qatar covering different periods of time, assigned exclusively for each country through its section. However the used data has been collected from the market’s site of each one, in addition for “Gulfbase.com”.

A. Lebanese Financial market characteristics

“Beirut stock Exchange (BSE) is the second oldest stock market in the region, as it was established in 1920 by a decree of French commissioner. Initially, trading was restricted to gold and foreign currencies. In the early 30s, trading was expanded to encompass shares of private companies set up under the French mandate to operate and manage some public services and sectors (railways, communications, post...). It was then tantamount to privatization. Some of these corporate securities and shares were listed on both BSE and Bourse de Paris at the same time.”

However, “Beirut Stock Exchange incorporates three types of markets:

- The official market: For companies incorporated for more than three years with a capital equivalent to USD three million at least, having distributed a minimum of 25 per cent of their share capital to the public and such percentage (25 per cent) being held by 50 shareholders at least.
- The junior market: For newly established companies with a capital equivalent to USD one million at least, having distributed a minimum of 25 per cent of their share capital to the public and such percentage (25 per cent) being held by 50 shareholders at least.
- Over the Counter market: For Lebanese companies with a capital equivalent to USD 100.000 at least. The shares of such companies are traded without being listed on the Beirut Stock Exchange”.

Time series Data was collected from Beirut stock exchange (bse.com.lb) regarding average monthly market index over the period January 1997 till December 2017, testing for market efficiency and volatility

A.1. Stationarity Test Results

The presence of a unit root in the Lebanese market Index series is confirmed by the Augmented Dickey Fuller (ADF); Phillips-Perron and KPSS tests. The results of these tests are presented in table 1 indicating that taking the first differences, the Lebanese market Index series become stationary. In other terms, the series is integrated of order 1 (I (1)). The return series R_t is therefore stationary since $p < 5\%$.

Table 1: ADF, Phillips-Perron and KPSS test results for Lebanese monthly market Index series in log, from January 1997, to December 2017.

ADF test	Log (p)
Probability Calculated ADF in levels	0.1437
Probability Calculated ADF in first differences	0.0000
Phillips-Perron test	Log (p)
Probability in level	0.1339
Probability in first differences	0.0000
KPSS test	Log (p)
Probability in level	0.201
Probability in first differences	0.07

Source: Calculated by the author using Eviews.

A.2. Volatility test results and Financial Characteristics

Equation (11) represents GARCH (1, 1) model estimations for equation (10). The values in parentheses represent the coefficient probabilities.

$$\sigma_t^2 = 4.56E+12 + 0.1900\varepsilon_t^2 + 0.37416 \sigma_{t-1}^2 \quad (11)$$

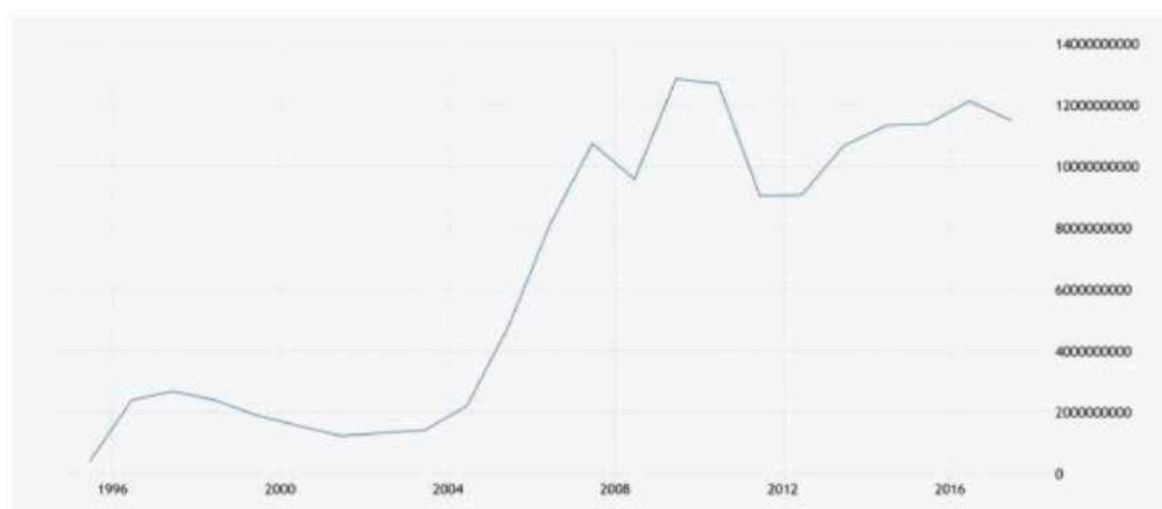
(0.606) (0.649) (0.8013)

According to probability values in equation (11), the ARCH and GARCH coefficients (α and β) are not significant since their respective probability is greater than 5%. The sum of ARCH and GARCH ($\alpha + \beta$) is 0.564, indicating that the Lebanese market volatility shocks are respectively low; however to insure more this point of view, studying the Lebanese market size in addition to the traded volume would be necessary.

A.3 Results Analyses

Graph 1 represent the Market Capitalization of the Lebanese Financial market from 1996 till 2018 .However, researches relate the persistence of low volatility and efficiency in the financial market (Andrew, 1997).

Graph 1: Beirut Stock exchange average yearly market capitalization (equities and funds) from 1996 to 2018.



Source: Calculated by the author based on Data for average yearly market capitalization collected from WORLD BANK/TRADINGECONOMICS.COM

Graph 1 shows that the Lebanese market capitalization Index acquires an upward trend; as there were no fluctuations from 1996 till 2018. However, a minimum of 1,000,000,000 USD recorded in 1996 to reach a peak of 13,000,000,000 USD in 2010 then it dropped down to reach almost 11,000,000,000 USD in 2018. Moreover, the total market capitalization has recorded 24.44% of the GDP lately according to BSE financial report, as it may be considered as a small size market; Furthermore, to investigate more in the Lebanese stock market, we can notice that the stocks traded represent a total value only 1.82% of the GDP, which is a very low percentage (BSE.com.lb). Therefore, the market efficiency of the Lebanese market is affected by the low level of volatility, in addition to the low level of traded volume (Nahlehb, 2010) which may return to many reasons related to the Lebanese investor; as the lack of transparency in the obtained results and reports that fears him, and other psychological reasons that are set below behavioral biases in finance.

B. Arab Gulf States

B.1. Stationarity Test results (Summary)

Table 3: ADF, Phillips-Perron and KPSS test results for Arab Gulf states monthly market Index series in log

	Dubai	Abu Dhabi	Kuwait	Qatar	Amman	Saudi Arabia
ADF test	Log (p)	Log (P)	Log (p)	Log (p)	Log (p)	Log (p)
Probability Calculated ADF in levels	0.0025	0.1785	0.2295	0.1114	0.0107	0.0232
Probability Calculated ADF in first differences	0.0000	0.0002	0.0266	0.0006		
Phillips-Perron test	Log (p)	Log (P)	Log (p)	Log (p)	Log (p)	Log (p)
Probability in level	0.0458	0.2095	0.7186	0.1107	0.0001	0.0243
Probability in first differences	0.0000	0.0003	0.001	0.0009		
KPSS test	Log (p)	Log (p)	Log (p)	Log (p)	Log (p)	Log (p)
Probability in level	0.0201	0.4177	0.4915	0.3565	0.0410	0.074
Probability in first differences		0.0421	0.0115	0.050		

Source: Calculated by the author using Eviews.

B.2. Volatility Test Results

Table 4: Volatility Test results For Arab Gulf States

	α	β	P_{α}	P_{β}	$\alpha+\beta$	Decision	Significance
Dubai	0.185131	1.22313	0.0415	0.0037	1.4081	Strongly Volatile	Significant
Abu Dhabi	0.0390	0.763	0.976	0.7861	0.802	Volatile	Not Sig
Kuwait	0.1069	0.634	0.050	0.012	0.7409	Volatile	sig
Saudi Arabia	0.4939	1.449	0.0356	0.029	1.942	Strongly volatile	Sig
Qatar	0.564	1.0002	0.0494	0.0452	1.566	Strongly Volatile	sig
Amman	0.9722	0.00075	0.2202	0.9075	0.479	weakly volatile	Not sig

Source: Calculated by the author using Eviews.

B.3. Dubai Financial market-DFM

In 2000 Dubai financial market has born as a public institution. Referring to Dubai financial market (www.dfm.ae), and in order to test for market efficiency using Unit Root Test before proceeding in the work, Dubai market index was collected starting from 2004 reaching 2018 order to test for market efficiency.

B.3.1. Test Results

As it appears in table 3, $p=0.0025$ that's to say less than 0.05 which means it's significant, thus H_0 is rejected and Dubai data series appears to be stationary at level, and weak form market efficiency is obtained; Phillips-perron also confirmed the same results.

However, Equation (12) represents GARCH (1, 1) model estimations for equation (10). The values in parentheses represent the coefficient probabilities.

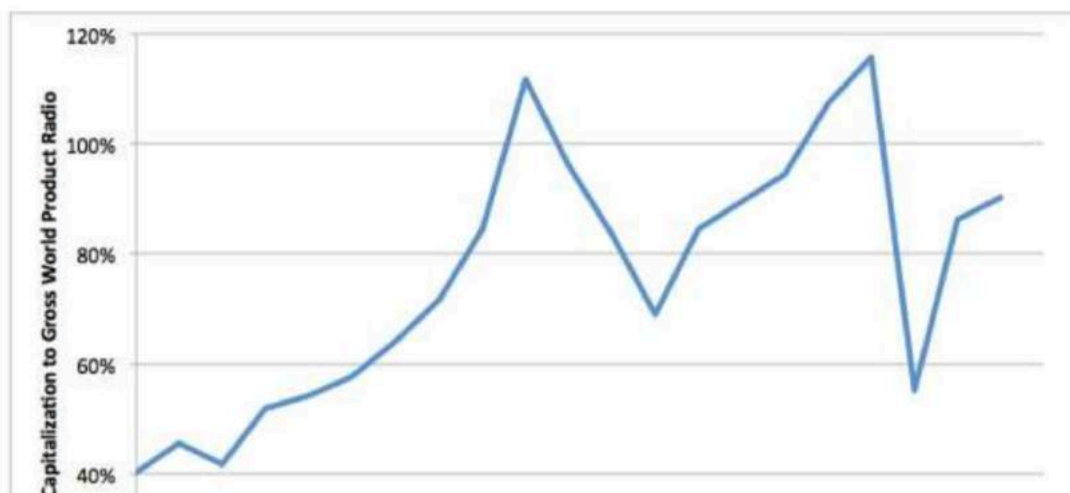
$$\sigma^2_t = 2.0931 + 0.185131 \varepsilon^2_{t-1} + 1.22313 \sigma^2_{t-1} \quad (12)$$

(0.9368) (0.0415) (0.0037)

B.3.2. Result analysis

According to probability values in equation (12), the ARCH and GARCH coefficients (α and β) are significant since their respective probability is less than 5%. The sum of ARCH and GARCH ($\alpha + \beta$) is 1.4081, indicating that the volatility shocks are strongly persistent. The figure below shows clearly the huge volatility in Dubai's market.

Figure 3: Dubai average yearly market capitalization from 1995 to 2011.



Source: Calculated by the author based on Data for average yearly market capitalization collected from www.dfm.ae

Nevertheless, to go deeply in the analysis of Dubai financial market, it can be seen that the value of market capitalization was about 308 billion U.S. dollar during 2017 according to data presented on (www.dfm.ae). However, referring to the figure 3, we can see that Dubai's market capitalization swings between 40 billion U.S. dollar as a minimum in 1995 to reach its peak 120 billion U.S. dollar in 2007, thus it can be said that Dubai acquires a big size financial market in addition to its traded volume that increased from 4,149 million \$ (2003) to 66,066 million \$ (2008) (table 4).

B.4. Abu Dhabi (ADX)/ UAE's index

On 15 November, 2000; Abu Dhabi securities exchange (ADX) was established; Average monthly Data regarding the variation of market index was collected covering 14 years (2004 till 2018), in order to test the efficiency of the market.

B.4.1. Test Results

Running the Augmented Dickey-Fuller test statistics, Phillips-Perron and KPSS using E views, results were obtained in table 3.

Since $p > 0.05$ ($=0.1785$) in ADF and ($p=0.2095$) in Phillips-Perron test, thus the series tends to be not stationary at level, thus the test is rerun at first difference to obtain $p < 0.05$ ($=0.0002$ and 0.0003) respectively, thus the series appears to be integrated of order 1; $I(1)$ which means that the series become stationary.

Equation (13) represents GARCH (1, 1) model estimations for equation (10). The values in parentheses represent the coefficient probabilities.

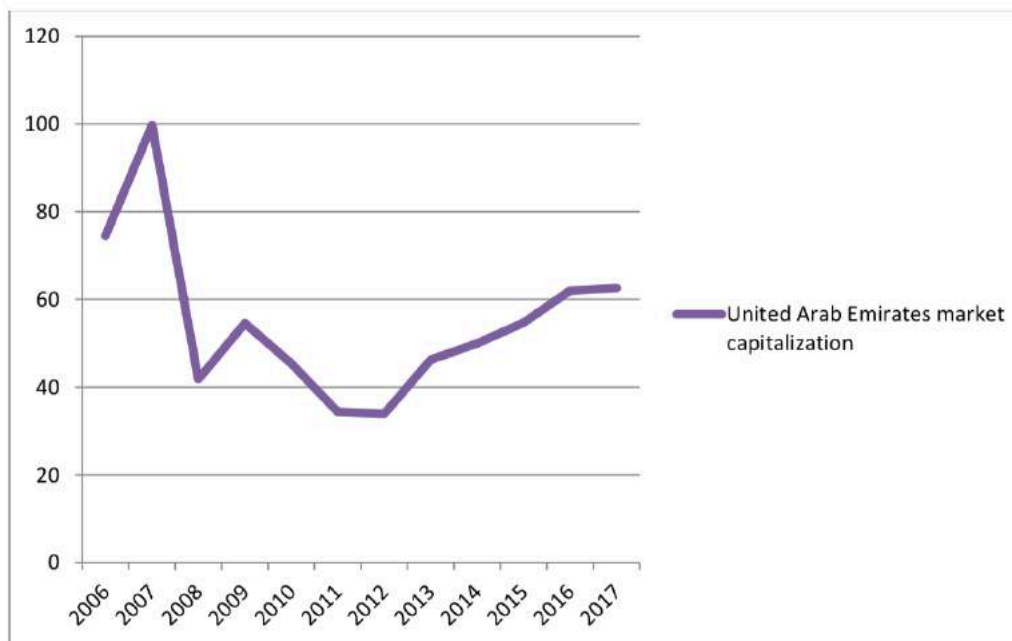
$$\sigma_t^2 = 2.5760 + 0.0390\varepsilon_{t-1}^2 + 0.763\sigma_{t-1}^2 \quad (13)$$

(0.889) (0.976) (0.7861)

B.4.2. Results Analysis

According to probability values in equation (13), the ARCH and GARCH coefficients (α and β) are not significant since their respective probability is more than 5%. The sum of ARCH and GARCH ($\alpha + \beta$) is 0.802; indicating that the volatility shocks are weekly persistent.

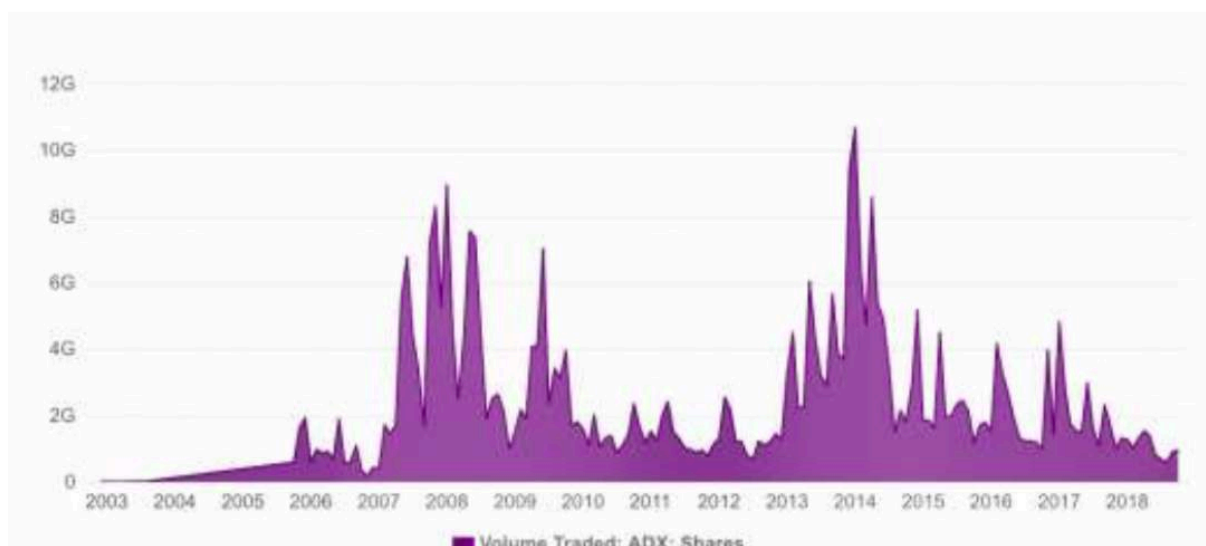
Figure 4: United Arab Emirates average yearly Market Capitalization from 2006-2017



Source: Calculated by the author based on Data for average yearly market capitalization collected from WWW.CEICDATA.COM/CEIC data

It can be graphically noted (figure 4) that Abu Dhabi market capitalization Index swings in times. In 2006, Abu Dhabi's market capitalization was approximately 80 billion U.S, and then it fluctuated during the years between 99.723 billion U.S to reach 62.592 billion U.S at 2017 which can be considered as an acceptable sized market. Furthermore; moving to the Traded Volume as we can notice graphically (figure 5) that Abu Dhabi's yearly average traded volume swings between 652 units in 2003 to records around 48,347 unit in 2008 (table 4) until it reaches 1,707,451,632 units .

Figure 5: ADX Volume traded (Shares) from 2003 to 2018



Source: Calculated by the author based on Data for traded volume of ADX collected from WWW.CEICDATA.COM/CEIC data

B.5. Kuwait financial market

Referring to the National bank of Kuwait (www.cbk.gov.kw) (S.A.K.P) Data; that was established at 30, June, 1969; average monthly market price index was studied covering 14 years, from 2004 till 2018 to test for market efficiency.

B.5.1. Test results

As it appears in (table 1); $p > 0.05$ at level thus the series tends to be non-Stationary; as a result it has been studied on the first difference level to obtain $p = 0.02 < 0.05$ in ADF TEST and 0.001 in PHILLIPS- PERRON TEST ,thus the series tends to be integrated at first difference (I(1)).

Equation (14) represents GARCH (1, 1) model estimations for equation (10). The values in parentheses represent the coefficient probabilities.

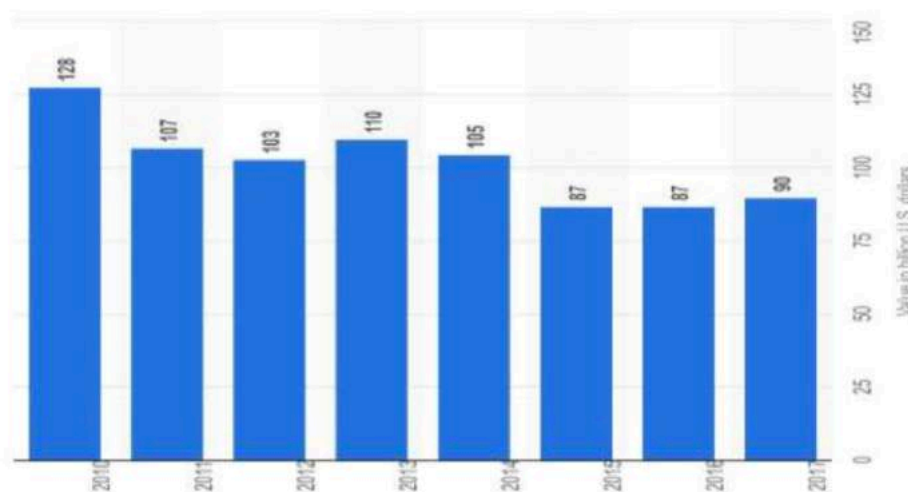
$$\sigma^2_t = 4.1472 + 0.1069\epsilon^2_{t-1} + 0.634\sigma^2_{t-1} \quad (14)$$

(0.1185) (0.050) (0.012)

B.5.2. Results Analysis

According to probability values in equation (14), the ARCH and GARCH coefficients (α and β) are significant since their respective probability is less than 5%. The sum of ARCH and GARCH ($\alpha + \beta$) is 0.7409, indicating that the volatility shocks are persistent.

Figure 6: Kuwait average yearly market capitalization from 2010 till 2017



Source: Calculated by the author based on Data for average yearly market capitalization collected from www.cbk.gov.kw

It can be graphically noted (figure 6) that the Kuwait market capitalization swings in time from 126 billion U.S in 2010 to record 90 billion U.S in 2017; which indicates that the size of Kuwait market can be considered almost big with respect to other markets. However referring to Kuwait financial report, we can see that the average yearly traded volume reached 1,485,068,937 units; however referring to table 4 we can see that the shares traded increased from 48,766 million in 2003 to 75,820 million in 2018 .Hence, Kuwait financial market can be considered as Volatile and almost a big size market in comparison with other similar markets.

B.6. Saudi stock exchange

Average monthly Data for Saudi stock market indices were collected for 15 years from 2003 till 2018 in order to test for weak form market efficiency in Saudi stock financial market.

B.6.1. Test Results

As presented in the table (3), Augmented Dickey-Fuller test was done with H_0 : Saudi stock exchange market has a unit root; as it appears in (table 1) $p=0.0232$ with ADF test and 0.0243 in PHILLIPS- PERRON TEST which is (< 0.05), thus it can be said that the null hypothesis is rejected and Saudi data series tends to be Stationary.

Equation (15) represents GARCH (1, 1) model estimations for equation (10). The values in parentheses represent the coefficient probabilities.

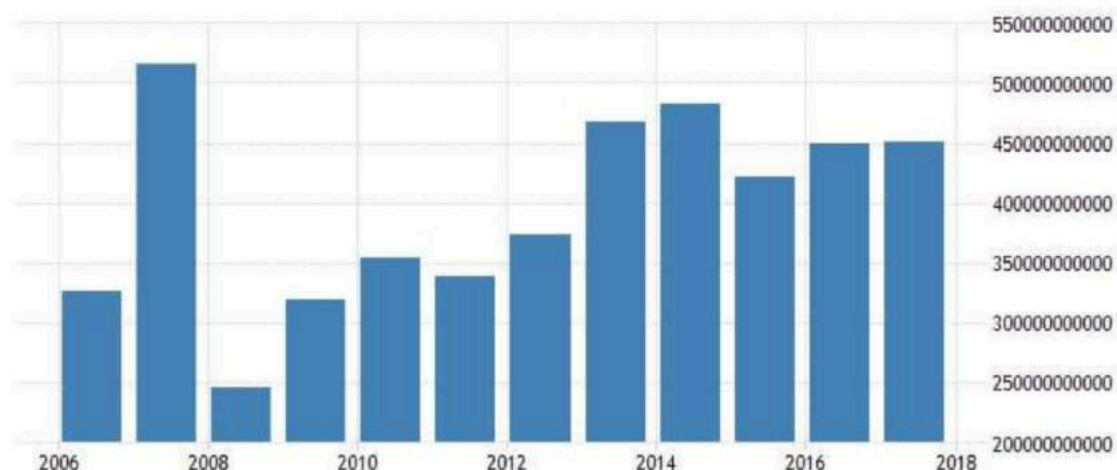
$$\sigma^2_t = 5.1801 + 0.4939\epsilon^2_{t-1} + 1.449\sigma^2_{t-1} \quad (15)$$

(0.042) (0.0356) (0.029)

B.6.2. Results Analysis

According to probability values in equation (15), the ARCH and GARCH coefficients (α and β) are significant since their respective probability is less than 5%. The sum of ARCH and GARCH ($\alpha + \beta$) is 1.942, indicating that the volatility shocks are strongly persistent.

Figure 7: Saudi average market capitalization from 2006 to 2018



Source: Calculated by the author based on Data for average yearly market capitalization collected from WORLD BANK/TRADINGECONOMICS.COM

Figure7 shows a wide variation for Saudi market capitalization, as it fluctuates from 330 billion U.S. in 2006 to reach its peak in 2008 with 530 billion U.S to reach around 450 billion U.S. in 2018. thus Saudi Arabia financial market can be considered as strongly volatile and large sized market with around an average of 109,410,453 unit as a yearly traded volume ,However referring to table 4 it can be clearly noticed that Saudi traded shares has increased from 5,531 million in 2003 to 54,442 million shares in 2008 therefore Saudi financial market is considered as a highly volatile and risky market.

B.7. Qatar Financial market

Based on the data obtained from (WWW.QE.COM.QA) that was established and started operating in 1997, and become one from the pioneer stock markets in the Gulf region. Average monthly Market indices were collected from 2006 till 2018 to test for market efficiency in its weak form.

B.7.1. Test results

Based on table (3), it can be seen that $p=0.1114 > 0.05$ (ADF TEST) and $p=0.1107$ (PHILLIPS- PERRON TEST) thus the series is not Stationary at level; thus we tended to make the first difference where $p=0.0006$ was obtained (< 0.05) and $p=0.0009$ with PHILLIPS-PERRON, thus the series tends to be integrated of level one (I (1)).

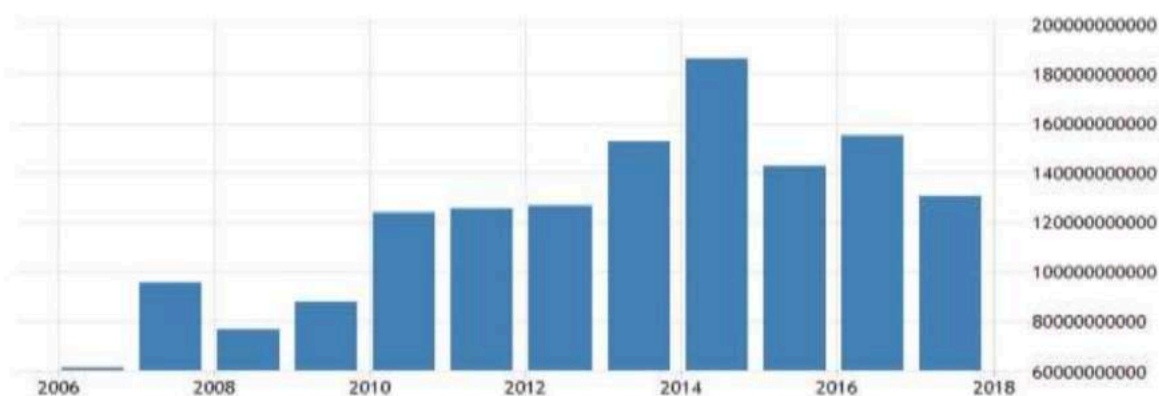
Equation (16) represents GARCH (1, 1) model estimations for equation (10). The values in parentheses represent the coefficient probabilities.

$$\sigma_t^2 = 3.064 + 0.564\epsilon_{t-1}^2 + 1.0002\sigma_{t-1}^2 \quad (16)$$

(0.607) (0.0494) (0.04520)

According to probability values in equation (16), the ARCH and GARCH coefficients (α and β) are significant since their respective probability is less than 5%. The sum of ARCH and GARCH ($\alpha + \beta$) is 1.566, indicating that the volatility shocks are strongly persistent.

Figure 8: Qatar average yearly market capitalization over the period 2006-2018



Source: Calculated by the author based on Data for average yearly market capitalization collected from WORLD BANK/TRADINGECONOMICS.COM

Based on figure 8; it can be seen that the size of Qatar's financial market varied between 62 billion U.S in 2006 to reach its peak of 185 billion U.S. in 2015, then it have declined to record 130 billion U.S. in 2018 with around 3,665,829 units as a yearly traded volume average. Nevertheless, from table 4 it can be noticed that in 2003 Qatar's yearly traded shares are 68 million to reach 3400 million shares in 2008.

B.8. Amman stock exchange

Amman stock exchange (ASE) average monthly Data that is used mainly to measure the performance in terms of return was collected for 11 years from 2007 till 2018 in order to test for market efficiency in the weak form.

B.8.1. Test results

As presented in table (3), it appears that $p=0.0107 < 0.05$ (ADF TEST) and $p=0.0001$ (PHILLIPS- PERRON TEST) thus H_0 is rejected, series is stationary and the market is efficient in its week form at the first level.

However, Equation (17) represents GARCH (1, 1) model estimations for equation (10). The values in parentheses represent the coefficient probabilities.

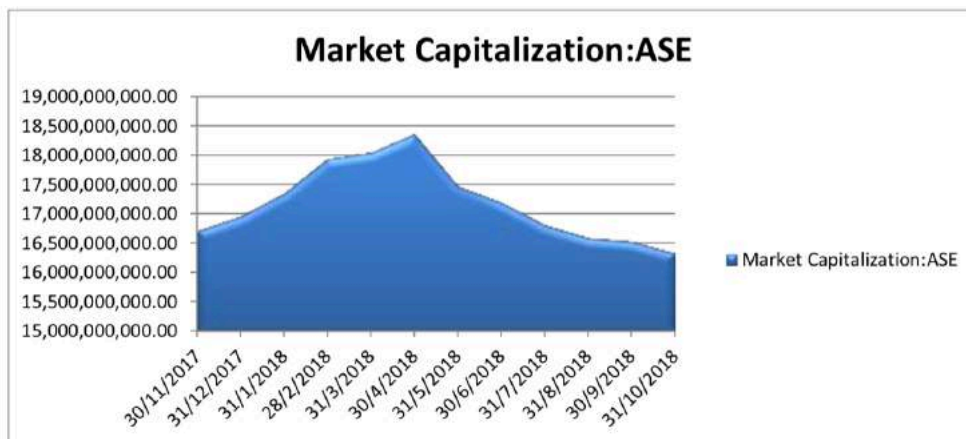
$$\sigma_t^2 = 3.1361 + 0.9722\epsilon_{t-1}^2 + 0.00075\sigma_{t-1}^2 \quad (17)$$

(0.7119) (0.2202) (0.9075)

B.8.2- Results Analysis

According to probability values in equation (17), the ARCH and GARCH coefficients (α and β) are not significant since their respective probability is greater than 5%. The sum of ARCH and GARCH ($\alpha + \beta$) is 0.479, indicating the absence of the volatility shocks

Figure 9: Amman stock exchange average monthly market capitalization during 2017-2018.



Source: Calculated by the author based on Data for average monthly market capitalization collected from WWW.CEICDATA.COM/Amman stock exchange

It can be graphically noted (figure 9) that Amman stock exchange varied between 16.5 million U.S at the end of 2017 to reach its peak of 18.369 million at April 2018 then it has decreased dramatically to reach 16.328 million at the end of 2018. In addition to that its average traded volume that has recorded 31,944 units in 2018 as it has increased from 276 million traded shares in 2003 to reach 3,881 million shares in 2008 (table 4).

Nevertheless, It can be said that although Amman has appeared as an efficient weak form market (at level) but this doesn't mean that it acquires all the conditions of efficient market; but on the other side its low market capitalization and low traded volume has been the reason behind; however this may be related to many reasons that might be considered under investor's behavioral biases which may be an indicator for many other psychological factors that would be contributing so far in these results.

Table 4: Arab Stock market development over the period 2003-2008

Country	Value Traded (\$ million)		Shares Traded (million)		Market capitalization (\$ million)			Number of listed companies		
	2003	2008	2003	2008	2003	%GDP	2008	%GDP	2003	2008
Abu Dhabi	3,336	61,280	652	48,347	55,519	67	61,887	22	30	65
Jordan	2,598	27,079	997	5,112	10,967	107	35,984	184	161	243
Bahrain	255	1,905	368	1,480	9,701	100	19,954	101	44	50
Morocco	2,211	14,231	35	222	11,556	26	63,420	70	52	80
Qatar	1,646	41,250	68	3,400	40,435	113	76,656	65	28	43
Dubai	11,628	69,880	4,149	66,066	35,109	42	65,217	24	13	65
Egypt	4,423	65,167	1,180	21,072	27,909	32	83,185	52	967	444
Kuwait	53,300	116,023	48,766	75,820	61,311	124	113,527	71	108	204
Oman	1,224	8,034	276	3,881	6,615	23	15,643	28	141	127
Saudi Arabia	158,568	483,122	5,531	54,442	157,164	73	246,809	46	70	127
Tunisia	152	1,425	13	148	2,194	10	6,381	15	45	53
AMEX	563,433	561,602	17,508	na	96,120	0.8	132,367	0.9	557	486

Source: WORLDBANK/TRADINGECONOMICS.COM

7. Conclusion

This paper presented the different methods to test efficiency of Lebanese and AGS financial markets in weak form, in addition to their financial characteristics which either enhances or reduces efficiency; nevertheless it investigates also the market volatility for the proceeding countries.

The overall results proved to show that Lebanon, Abu Dhabi, Qatar, Kuwait series data are integrated of order 1 (I (1)) thus they tend to be efficient in their weak form, whereas Dubai, Saudi and Amman are non- weak form efficient markets. However these results have been investigated deeply through analyzing their financial characteristics (market capitalization and traded volume) and Volatility for each of the above markets.

However, in our cases efficiency of the market doesn't necessary mean that historical data and path of the stocks are the main key behind predicting its future prices; but on the other side another components have entered in order to get a clear view regarding the efficiency of the market ,as "market capitalization" and "Traded Volume" that have been seen as the keystones in the analysis of Lebanon and Arab Gulf states markets; which has left us with other reasons that might lie behind the limited investing behavior of the traders, where Irrational way of thinking and behaving might be controlling which can be explained through lack of transparency in certain markets.

Nevertheless, the psychological part of the investor during decision making can't be denied, as it plays a big role during investment decisions where Irrationality is being spread all over leading to wrong behaviors so far, that can definitely leads to wrong decisions and big losses. Thus it can be insured that other factors are being contributing during decision making process and can be explained through behavioral biases and hidden under behavioral finance concepts.

References

- Abraham, A., J. Fazal and A. Sulaiman (2002), "Testing the Random Walk Behavior and Efficiency of the Gulf Stock Markets", the Financial Review, Vol. 37, pp. 469-480.
- Andersen, T. G., Bollerslev, T., Diebold, F., and Labys, P, (2003), "Modeling and forecasting realized volatility", *Econometrica*, 71, 579-625.
- Abdmoulah. W (2010), "Testing the evolving efficiency of Arab stock markets", *International review of Financial Analysis*, 17, 25-34.
- Bashir, Taqadus, Ilyas, M., and Furrukh, A. (2011), "Testing the Weak-Form Efficiency of Pakistani Stock Markets — An Empirical Study in Banking Sector", *European Journal of Economics, Finance and Administrative Sciences*, Vol. 31, pp. 160-175.
- Butler, K. C. & Malaikah, S. J. (1992). "Efficiency and inefficiency in thinly traded stock markets: Kuwait and Saudi Arabia". *Journal of Banking and Finance*, 16(1), 197–210.
- Choi I. "Almost All About Unit Roots". New York:Cambridge University Press; 2010.
- Cooray, A. & Wickremasinghe, G. (2005). "The efficiency of emerging stock markets: Empirical evidence from the South Asian region". Discussion Paper, University of Tasmania.
- Engle RF, Granger CWJ. "Co-integration and error-correction:representation, estimation, and testing". *Econometrica* 1987, 55:251–276.
- Fadaeenejad, E. (1994). "Weak-form test of the capital market efficiency and Tehran Stock Exchange". *Financial Researches*, 2(5), 6-26.
- Fama, E.F. "Efficient Capital Markets: A Review of Theory and Empirical Work". *The Journal of Finance* 25, 2 (1970), 383–417.
- Guidi, F., Gupta, R. & Maheshwari, S. (2010). "Weak form market efficiency and calendar anomalies for Eastern Europe equity markets". MPRA Paper No. 21984. Online at <http://mpa.ub.unimuenchen.de/21984/>
- Gupta, R., and Basu, P. K. (2007), "Weak Form Efficiency in Indian Stock Markets", *IBER Journal*, Vol.6, No.3, pp. 57-64.
- Hassan, Shah and Abdullah (2007), "Testing of Random Walks and Efficiency in an Emerging Market", *The Business Review, Cambridge*, Vol. 9, pp. 271-280.
- Hirshleifer, D., Hsu, P. H., Li, D, (2013). "Innovative efficiency and stock returns", *Journal of Financial Economics*, Vol. 107, pp. 632–654.
- Hsu, D. A, (1984), "The Behavior of Stock Returns: Is it Stationary or evolution?", *Journal of Financial and Quantitative Analysis*, vol. 19, no, 1, pp11-28.

- Jarrett, J. E. (2008). "Random walk, capital market efficiency and predicting stock returns for Hong Kong Exchanges and clearing limited". *Management Research News*, 31(2),142–148.
- Lee J, Strazicich MC. "Break point estimation and spurious rejections with endogenous unit root tests". *Rev Econ Stat* (2001), 63:535–558.
- Lo, Andrew W., ed. (1997), "Market Efficiency: Stock Market Behavior" in *Theory and Practice*: Edward Elgar Publishing, LTD, London.
- Malkiel, B.G (2003). "The efficient market hypothesis and its critics". *The Journal of Economic Perspectives*, 17(1): 59-82. Retrieved from www.princeton.edu/ceps/workingpapers/91malkiel.pdf.
- Narayan, P.K. & Smyth. R. (2005). "Are OECD stock prices characterized by a random walk? Evidence from sequential-trend break and panel data models". *Applied Financial Economics*, 15(8), 547– 556.
- Oskooe, S. A. P. (2011), "The Random Walk Hypothesis in Emerging Stock Market-Evidence from Nonlinear Fourier Unit Root Test", *Proceedings of the World Congress on Engineering*, Vol. 1, pp. 1-5.
- Patterson K. "A Primer for Unit Root Testing". Basingstoke: Palgrave Macmillan; (2010).
- Phillips, P. and Patel, N.R., Radadia N. and Dhawan, J., (2012). "An Empirical Study on Weak-Form of Market Efficiency of Selected Asian Stock Markets." *Journal of Applied Finance and Banking*, 2(2), pp. 99-148.
- Samuelson, Paul (1965). "Proof that properly anticipated prices fluctuate randomly". *Industrial Management Review*.6:41-49
- Smith, G, (2004), "Random Walks in Middle East Stock Markets", Working Paper, University of London.
- Smith G., (2007), "Random Walks in Middle Eastern stock markets", *Applied Financial Economics*, 17 (7). pp. 587-596.
- Thomas, A.E. and Kumar, M.C.D., (2010), "Empirical Evidence on Weak Form Efficiency of Indian Stock Market", *ASBM Journal of Management*, 3(1), pp. 89-100.
- Wolfers, J. and Zitzewitz, E. "Prediction markets". *The Journal of Economic Perspectives* 18, 2 (2004), 107–126.
- Worthington, A. C., and Higgs, H. (2006), "Evaluating Financial Development in Emerging Capital Markets with Efficiency Benchmarks", *Journal of Economic Development*, Vol. 31, Issue 1, pp. 17-44.
- Zaubia, K. A. and Nahlehb, M. A. (2010), "Financial Market Efficiency: Empirical Evidence from some Middle East and North Africa Countries (MENA)", *International Research Journal of Finance and Economics*, Vol. 49, pp. 173-184.

The Effect of Tunisian Cyclical Fiscal Policy on Economic Volatility: Understanding the Role of Institutional Quality

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Abstract

The recent decades have been marked by major instabilities that have increased the sensitivity of Tunisian business cycles to internal and external shocks. The economists must take this structural problem into account in their current decisions. Therefore, most institutional reforms were made in response to those instabilities after the Tunisian revolution. In addition, several fiscal indicators are partly intended to stabilize Tunisian economic fluctuations and avoid excessive government deficits. The influence of fiscal policy can be examined by distinguishing between cyclical and discretionary policies. Accordingly, it is interesting to investigate the impact of institutional quality on Tunisian fiscal policy conduct. This paper measures the effect of cyclical fiscal policy on Tunisian volatility. It analyzes the role of four fiscal indicators such as total government expenditure, administrative expenditure, capital expenditure, and loan expenditure. In addition, this paper tests the role of institutional variables on the stabilizing effect of fiscal policy. Indeed, the results are significant, and a tendency to apply a cyclical fiscal policy proved to be possible to reduce Tunisian volatility. Tunisia's experience is likely to be of interest to other developing countries.

Keywords: Instabilities, Institutional Reforms, Fiscal policy, Volatility, Tunisian Economy, Cyclical Component, Fiscal Indicators

JEL: E6, E62, O1

I. Introduction

The new prudential rules, aimed at reducing the fiscal deficit, require the sustainability of fiscal policy and its ability to reduce economic volatility. The role of fiscal policy is examined in terms of discretionary or cyclical changes. The discretionary fiscal policy is a change in government spending or taxes, but the cyclical fiscal policy is provided by the automatic stabilizers and is acting through lower revenues and higher public spending.

Substantial empirical evidence investigates the reacts of fiscal policy to the cycle. Leigh and Stehn (2009) show that discretionary fiscal easing occurs during economic recoveries in the G7 countries. Furthermore, Auerbach (2009) shows both the expenditure and revenue side reacted strongly counter-cyclically between 1984 and 2009 and that spending responded stronger than revenues. By contrast, the automatic stabilizers are found to react more

strongly to the cycle in the euro area than in the United States. Similar results based on an instrumental variable approach are reported in Lee and Sung (2007), which find that government spending is strongly counter-cyclical in most OECD economies. In addition, Ilzetzki and Vegh (2008) argue that developing countries pursue pro-cyclical fiscal policies while developed OECD countries are less pro-cyclical or a-cyclical by employing instrumental variables. As well, Fatas and Mihov (2012) demonstrate that the discretionary fiscal policy tends to be counter-cyclical in developed countries, but pro-cyclical in developing countries. More recently, Egert (2014) analyses the fiscal policy reaction to the cycle in OECD countries during the last 30 years. The paper examines the reactions of fiscal policy according to the size of the public debt and the public balances and the position in the cycle while introducing different sets of control variables. In addition, Alisdair McKay and Ricardo Reis (2016) measure the effect of automatic stabilizers on the dynamics of the U.S business cycle. They find that tax-and-transfer programs that affect inequality and social insurance can have a larger effect on aggregate volatility. The stabilizers have a more important role when monetary policy is constrained by the zero lower bound, and they affect welfare significantly through the provision of social insurance. On the other hand, some studies have shown the significant contribution of institutions and electoral rules in explaining the evolution of budget expenditures and deficits. For instance, an empirical study of OECD countries during the period 1980-2002, examined the significant role of several institutional factors on fiscal cyclicality, namely, the systems and electoral cycles, the type of fiscal rule adopted, the degree of the tax burden and the rigidities of public spending. Similar results were found by Fatas and Mihov (2005). The author indicates that fiscal policy is constrained by institutional rules and restrictions that affect the elasticity of public spending. In addition, the author shows that countries with significant institutional constraints have difficulties in implementing changes in discretionary policy. As well, Kondo and Svec (2009) propose an original model of competition for effective political power between majority and opposition coalitions in the case of the French departments. The results show that the per capita social expenditures in the French departments depend on the effective political power of the majority.

Although research on the impact of fiscal policy on macroeconomic volatility and economic growth is growing, the role of institutional quality on the stabilizing role of fiscal policy is largely ignored. Furthermore, institutional quality has recently got increasing attention from researchers in explaining the differences in economic developments and macroeconomic performance across countries. Among the others, Talvi and Vegh (2005) mentioned that the difference in fiscal policy between countries is explained by the significant role of political institutions and economic structures. Indeed, with very low institutional structure, both cyclical and discretionary policy further increase macroeconomic volatility and reduce economic growth. It is, therefore, an imperative need to investigate the impact of institutional quality on fiscal policy conduct. Acemoglu et al. (2003) and Easterly (2005) show that once institutions are included in the regression, macroeconomic policies do not have a significant effect on growth. In addition, the IMF study on developed and emerging countries between 1970 and 2007 shows that the counter-cyclical effect of fiscal policies has been relatively weak. The institutional context seems to be the main explanatory factor. Discretionary policies require decision-making processes, which delays their implementation and often prevents the adoption of targeted measures. Similarly, Badinger (2012) examined the causal effect of cyclical fiscal policy on output volatility, in a sample of 88 countries during the period 1960 to 2004. By integrating the variables reflecting the political and institutional activities, the main objective of the Badinger (2012) study is to highlight the crucial role of cyclical fiscal policy and its transmission channels by considering its effect on volatility and economic growth. Badinger (2012) found that cyclical fiscal policy has a destabilizing effect on the economy and increases the volatility of output in the same way as discretionary fiscal policy.

This paper calculates the extent to which fiscal policy stabilises output volatility in Tunisia following institutional changes. For the scope of the analysis, we use high-frequency data (quarterly) in the period 1993 to 2017. As the purpose of this paper is to test the role of four cyclical fiscal indicators, such as, total government expenditure (CYC1), administrative expenditure (CYC2), capital expenditure (CYC3) and loans (CYC4), it is absolutely necessary to determine them first. So, in order to determine those components, we use a dynamic linear model (the state-space model) estimated by the Kalman filter and manipulated by the R software.

The remaining part of the paper is organized as follows. Section 2 deals with the determination of the cyclical and discretionary components of fiscal policy. Section 3 presents the empirical approach and results for determining

the impact of institutional variables on cyclical fiscal policy. Section 4 provides evidence on the relationship between cyclical fiscal policy and the output volatility. Section 5 concludes.

II. The Identification of Fiscal Policy Components

Following Fatas and Mihov (2003), we measure the cyclical components using the elasticity of each fiscal indicators (total government expenditure, administrative expenditure, capital expenditure, and loans) compared to real GDP growth. On the other hand, we follow Blanchard and Perotti (2002) and Alesina and Bayoumi (1996) while measuring the discretionary component as the residuals.

The majority of previous studies have adopted cross-sectional data by selecting a fairly large sample of countries. Our contribution in this work is to adopt a time series for a single country like Tunisia during the quarterly period from 1993 to 2017. We use a dynamic linear model (the state-space model) estimated by the Kalman filter and manipulated by the R software. All variables are logarithmic and are adjusted by the "X-13-ARIMA-SEATS" seasonal adjustment program (Zaric (2018)).

The model is presented as follows:

$$\Delta \ln G_t = \alpha_t + \chi_t \Delta \ln Y_t + \varepsilon_t \quad (1)$$

$$\chi_t = \theta \chi_{t-1} + \eta_t \quad (2)$$

Where,

- G: Fiscal indicators.
- Y: Real gross domestic product
- χ_t : Cyclical fiscal policy noted as "CYC."
- $\varepsilon_{i,t}$: Discretionary fiscal policy noted as "DISCR."

We construct four models for our fiscal policy:

- (CYC1 and DISCR1): we use the total government expenditure as a dependent variable;
- (CYC2 and DISCR2): we use the administrative expenditure as the dependent variable;
- (CYC3 and DISCR3): we use the capital expenditure as the dependent variable;
- (CYC4 and DISCR4): we use the loan expenditure as the dependent variable.

The models are estimated by the maximum likelihood estimation (MLE), and the results are presented in the appendix (Table 6)

In order to be able to reach a conclusion regarding the cyclicity of fiscal policy, we test the existence of the correlation between the cyclical components of the real GDP and fiscal policy. The results are presented in Table 1.

	Correlation coefficient		
	maximum	minimum	
Cyclical government expenditure	-0.11	0.87	-7.75
Cyclical administrative expenditure	-0.04	1.12	-8.76
Cyclical capital expenditure	-0.16	-0.50	-5.80
Cyclical loan expenditure	0.06	1.27	-9.69

Table 1: Summary Statistics of the Tunisian Cyclical Fiscal Policy

As we can figure from the Table 1, the Tunisian economy is characterised by a negative correlation with total expenditure, administrative expenditure, and capital expenditure. However, the correlation coefficient is lower than -0.2, that states for a weak countercyclical fiscal policy. On the other side, the results present a positive correlation coefficient with loan expenditure, that stands for a procyclical fiscal policy. The analysis also results

present correlation coefficients lower than 0.1. The procyclicality can be explained by the fact that, during the recession, the Tunisian economy is not able to contract loans, or they can borrow at higher interest rates.

Indeed, there are evidence that the quality of institutions in the Tunisian economy affects the fiscal policy and plays a crucial role in the pro-cyclicality or acyclicality of fiscal policy.

III. The Effect of Institutional Variables on Cyclical fiscal Policy

To establish the link between cyclical fiscal policy and the institutional quality, we use the following model. This is a regression estimated by applying weighted ordinary least squares (WLS) method.

As weights, we use the inverse of the variance of cyclicality.

$$\ln CYC_t = \alpha + \lambda P_t + \delta X_t + \varepsilon_t \quad (3)$$

$$P_t = [NELEC_t, POLCON_t, MAJ_t, PRES_t] \quad (4)$$

$$X_t = [OPEN_t, GDPPC_t, TOT_t, RINV_t, GSIZE_t] \quad (5)$$

The four reported measures of political institutions are :

- POLCON: A measure of political constraints that is a continuous variable (from 0 to 1) of the number of veto points extended in the decision-making process. It's the extent to which a change in the preferences of any one actor may lead to a change in government policy (Henisz (2017)).
- NELEC: The average number of elections (Keefer (2017) database).
- MAJ: A dummy variable for the electoral system. It takes value 1 for the majoritarian system, and 0 for the proportional system (Keefer (2017) database).
- PRES: A dummy variable for the political system. It takes value 1 for presidential systems and 0 for parliamentary systems (Keefer (2017) database).

We use a set of control variables to allow for more reliable causal inferences:

- OPEN: The opening ratio;
- GDPPC: The level of development, measured by the logarithm of real GDP per capita;
- TOT: The terms of trade;
- RINV: The investment ratio;
- GSIZE : The size of the government.

The size of government variable differs according to the fiscal policy indicator. We propose four different measures:

- GSIZET : The total expenditure;
- ADMINGSIZET: The administrative expenditure;
- CAPGSIZET: The capital expenditure;
- LOANGSIZET: The loans.

In addition, to better understand the role of institutional quality, we propose to distinguish between its effect on the cyclical policy and that on the discretionary policy. To do this, we estimate another model by defining the dependent variable as a discretionary component (DISCR). The model is presented as follows:

$$\ln DISCR_t = \alpha + \lambda P_t + \delta X_t + \varepsilon_t \quad (6)$$

$$P_t = [NELEC_t, POLCON_t, MAJ_t, PRES_t] \quad (7)$$

$$X_t = [OPEN_t, GDPPC_t, TOT_t, RINV_t, GSIZE_t] \quad (8)$$

	CYC1	DISCR1
Intercept	-1.8479 (1.6385)	2.4401 (2.6891)
POLCON	0.3136 (0.4533)	1.1661 (0.7439)
MAJ	0.9413** (0.3597)	0.9390 (0.5904)
NELEC	-0.0254 (0.0758)	-0.1634 (0.1243)
PRES	0.4490 (0.3106)	-0.0063 (0.5097)
RINV	6.3994 (10.2704)	4.2839 (16.8559)
OPEN	-1.6982** (0.7513)	2.1512* (1.2330)
GDPPC	-0.8478 (4.1327)	-4.9995 (6.7827)
TOT	3.1995* (1.7659)	-8.3563*** (2.8983)
GSIZET	6.9920 (5.4583)	-17.2727* (8.9583)
R ²	0.3737	0.2022
Adj. R ²	0.3096	0.1206
Num. obs.	98	98
RMSE	1.7691	2.9035

*** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$

Table 2: The Impact of Institutional Variables on Cyclical Fiscal Policy in Tunisia

The analysis of the first regression between the total public expenditure and the institutional variables (Table 2) shows that only the electoral system (majoritarian or proportional) is significant. We try to see, following the introduction of the majoritarian variable (MAJ), whether the electoral system contributes to excessive changes in fiscal policy. There is evidence that the degree of decentralization or the concentration of power in the budgetary institutions can lead to excessive deficits, as documented in Poterba (1994), and Von Hagen and Harden (1995). Persson and Tabellini (2001) argue that majoritarian regimes should be associated with more volatile discretionary policy and more pronounced electoral cycles. On the other hand, Alesina and Bayoumi (1996) argue that proportional systems lead to coalitions and fiscal deadlocks which delay stabilizations. This implies that proportional systems will be associated with larger measured volatility of policy due to non-adjustment to shocks. The positive coefficient of the majoritarian variable lends mild support to the claim that electoral system contributes to the elasticity of total public expenditure. In addition, the positive sign asserts that the electoral system does not seem to create more volatility in discretionary fiscal policy.

To better explain the role of institutional quality on fiscal policy, we move to measure its effect on the other fiscal indicators. The following table (Table 3) reports the results of the regressions.

The significant and positive coefficient of the majoritarian variable indicates that the electoral system no longer contributes to the discretionary volatility of public capital expenditure. For the other indicators, the coefficient is not significant.

	CYC2	DISCR2	CYC3	DISCR3	CYC4	DISCR4
Intercept	-5.0584*** (1.8777)	2.1552 (2.2899)	1.8584 (1.5479)	4.6562** (1.9089)	4.8254*** (0.8490)	-0.8121 (1.1559)
POLCON	0.6727 (0.5852)	1.4429** (0.7136)	1.9458*** (0.6064)	-0.7273 (0.7478)	-0.2213 (0.5400)	1.2427* (0.7352)
MAJ	0.3167 (0.4476)	0.5005 (0.5459)	-0.0930 (0.3888)	0.9325* (0.4795)	0.1115 (0.3161)	0.6959 (0.4304)
NELEC	0.1795* (0.0999)	0.0234 (0.1218)	-0.1633 (0.1020)	-0.3232** (0.1258)	-0.0014 (0.0880)	-0.1446 (0.1199)
PRES	1.6477*** (0.5031)	-0.2749 (0.6136)	0.4952* (0.2867)	0.1587 (0.3535)	-0.9288*** (0.2738)	1.0964*** (0.3728)
RINV	39.7951*** (13.0582)	7.1270 (15.9253)	-26.3300* (13.9731)	15.7725 (17.2322)	2.1650 (11.7064)	6.4415 (15.9389)
OPEN	-2.6728*** (0.9958)	1.8101 (1.2145)	-2.2816** (1.0368)	-0.8023 (1.2787)	-4.6294*** (0.8702)	0.8758 (1.1848)
GDPPC	-0.7236 (4.9356)	-3.2749 (6.0193)	-3.5735 (5.4532)	-13.3978** (6.7251)	13.7152*** (4.2790)	-1.9160 (5.8261)
TOT	6.9181*** (2.2999)	-10.9527*** (2.8049)	1.4020 (2.3211)	-0.7040 (2.8625)	1.4930 (2.0708)	3.0886 (2.8195)
ADMINGSIZET	27.1836*** (8.6426)	-20.5129* (10.5401)				
CAPGSIZET			-34.8170** (15.5115)	-60.2490*** (19.1294)		
LOANGSIZET					-52.7569** (24.1216)	-165.0900*** (32.8429)
R ²	0.4736	0.2649	0.3882	0.1919	0.4045	0.2783
Adj. R ²	0.4197	0.1897	0.3257	0.1093	0.3436	0.2045
Num. obs.	98	98	98	98	98	98
RMSE	1.7493	2.1334	5.2115	6.4271	0.7093	0.9658

***p < 0.01, **p < 0.05, *p < 0.1

Table 3: The Impact of Institutional Variables on Cyclical Fiscal Policy Components in Tunisia

The POLCON variable is introduced in the regression to capture the limits faced by governments in the implementation of economic policies. The presence of these constraints reduces the use of discretionary fiscal policy and favors the use of automatic stabilizers. Persson and Tabellini (2001) show that countries with more constrained governments should also experience less volatility in the discretionary policy.

Therefore, we observe a positive and significant effect of the POLCON variable. Indeed, the political constraints reduce the discretionary volatility of administrative and loan expenditure and contribute to the elasticity of capital expenditure in the Tunisian economy.

It should be emphasized that we introduce NELEC variable in order to control for the obvious possibility that fiscal policy is driven by the electoral cycle and also to determine the importance of accountability of politicians. Interestingly the number of elections has a negative and significant coefficient in the regression of discretionary capital expenditure, which is consistent with the view that elections hold politicians accountable in reducing the volatility in discretionary capital expenditure. On the other side, the variable contributes to the elasticity of administrative expenditure.

Finally, we introduce the PRES variable to test the effect of presidential system on fiscal policy. Persson and Tabellini (2001) imply that presidential regimes must be associated with a more volatile discretionary policy. The results of the presidential regimes are significant. We observe a positive and significant effect of PRES variable on the volatility of discretionary loan expenditure. Nevertheless, the variable shows a positive effect on administrative and capital cyclical expenditure and a negative effect on cyclical loan expenditure.

Knowing that fiscal policy does have an implication to economic growth, it is of great importance to analyze, in what follows, the effect of cyclical fiscal policy on Tunisian economic volatility.

IV. The effect of cyclical fiscal policy on economic volatility

We follow Badinger (2012), and we include the cyclical fiscal policy (CYC) as an explanatory variable. The dependent variable is the volatility of output and is defined by the standard deviation of the real GDP per capita growth rate. We use the logarithmic specification to avoid predicted negative values for the standard deviation of output growth.

Our study is based on two methods. In the first, we use the weighted ordinary least squares with control variables (WLS). The problem with this regression is the possibility of reverse causality of cyclical policy to output. Indeed, to deal with this problem, we use the two-stage least squares: with control variables and instruments (TSLS). The list of instruments includes the four institutional characteristics (POLCON, PRES, MAJ, and NELEC) and variables capturing the social characteristics of the country. We adopt, then, instrumental variables as mentioned by Badinger (2008) and Fatas and Mihov (2003), namely the logarithm of the population (POP) and the rate of urbanization (URBAN).

	WLS1	WLS2	WLS3	WLS4
Intercept	0.0242*** (0.0020)	0.0182*** (0.0016)	0.0243*** (0.0036)	0.0157*** (0.0022)
CYC1	-0.0005 (0.0003)			
CYC2		-0.0006** (0.0002)		
CYC3			0.0004 (0.0003)	
CYC4				0.0007** (0.0003)
OPEN	-0.0033 (0.0021)	-0.0037 (0.0024)	-0.0085*** (0.0023)	-0.0074*** (0.0025)
RINV	-0.0752** (0.0304)	-0.0747** (0.0349)	-0.0426 (0.0363)	-0.0724** (0.0351)
TOT	-0.0034 (0.0052)	-0.0002 (0.0060)	-0.0069 (0.0057)	0.0019 (0.0064)
GDPPC	0.0601*** (0.0117)	0.0715*** (0.0122)	0.0602*** (0.0140)	0.0671*** (0.0136)
GSIZET	-0.0511*** (0.0087)			
ADMINGSIZET		-0.0362*** (0.0092)		
CAPGSIZET			-0.1137*** (0.0379)	
LOANGSIZET				-0.1121 (0.0707)
R ²	0.5488	0.4810	0.4280	0.4098
Adj. R ²	0.5191	0.4468	0.3903	0.3709
Num. obs.	98	98	98	98
RMSE	0.0055	0.0045	0.0137	0.0022

*** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$

Table 4: The Impact of Cyclical Fiscal Policy on Tunisian Volatility (WLS)

The model is represented as follows:

$$\ln\sigma_t^y = \gamma_0 + \gamma_1 \ln CYC_t + x_t \delta + \mu_t \quad (9)$$

$$X_t = [OPEN_t, GDPPC_t, TOT_t, RINV_t, GSIZE_t] \quad (10)$$

The results obtained by the weighted ordinary least squares method (WLS) are summarized in the following table (Table 4).

There is no discernible effect of cyclical government expenditure on economic volatility. We observe an insignificant negative coefficient. Nevertheless, the cyclical administrative expenditure affect significantly the Tunisian economic volatility. The negative effect is reinforced by introducing the control variables (more precisely ADMINGSIZET). Therefore, we can rule in the idea that the government size contributes to the stabilizing role of cyclical fiscal policy. On the other hand, we observe a positive and significant coefficient of cyclical loan expenditure, which shows its destabilizing effect.

On the same, the introduction of institutional variables in the regression by using the two-stage least squares method (Table 5), indicates a negative coefficient of cyclical government expenditure and particularly of cyclical administrative expenditure. It seems that cyclical fiscal policy tends to lower the output volatility. This result is statistically significant.

Therefore, the improvement of institutional quality in Tunisia accentuates the stabilizing role of cyclical fiscal policy. Furthermore, it is recommended to focus on the cyclical administrative expenditure as a fiscal automatic stabilizer. However, we must take into account that, both cyclical capital and loan expenditures further increases Tunisian output volatility.

	TSL1	TSL2	TSL3	TSL4
Intercept	0.0215*** (0.0024)	0.0166*** (0.0015)	0.0130*** (0.0028)	0.0092*** (0.0005)
CYC1	-0.0009** (0.0004)			
CYC2		-0.0009*** (0.0003)		
CYC3			0.0013*** (0.0004)	
CYC4				0.0006 (0.0005)
GDPPC	-0.0527*** (0.0094)			
GSIZET	0.0058 (0.0186)	0.0215 (0.0199)	0.0405* (0.0215)	0.0165 (0.0215)
ADMINGSIZET		-0.0452*** (0.0089)		
CAPGSIZET			-0.0174 (0.0448)	
LOANGSIZET				0.0494 (0.0851)
eq1: R ²	0.3965	0.3539	0.2508	0.1936
eq1: Adj. R ²	0.3772	0.3332	0.2269	0.1679
Num. obs. (total)	98	98	98	98

*** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$

Table 5: The Impact of Cyclical Fiscal Policy on Tunisian Volatility (TSL)

V. Conclusion

This paper measures the effect of cyclical fiscal policy on Tunisian volatility. It analyzes the role of four fiscal indicators such as total government expenditure, administrative expenditure, capital expenditure, and loan expenditure. In addition, this paper tests the role of institutional variables on the stabilizing effect of fiscal policy. It seems absolutely necessary to use these fiscal indicators to investigate the effect of fiscal implicit rules and constraints on the evolution of government expenditure and to demonstrate the extent to which this fiscal policy is effective.

The main finding is that the political constraints reduce the discretionary volatility of administrative and loan expenditure, and contribute to the elasticity of capital expenditure in the Tunisian economy. Moreover, the results show that the electoral system contributes to the elasticity of total public expenditure and no longer contributes to the discretionary volatility of public capital expenditure. Interestingly the number of elections hold politicians accountable in reducing the volatility in discretionary capital expenditure. Finally, we observe that the presidential system seems to affect public expenditures and deficits.

Subsequently, we analyze the effect of cyclical fiscal policy on volatility. Our study, on quarterly data, contradicts the ideas of Badinger (2012) and gives a significant vision on the role of the automatic stabilizers in the reduction of the aggressive volatility for the Tunisian economy during the period (1993-2017). Furthermore, it is recommended to focus on the cyclical administrative expenditure as a fiscal automatic stabilizer. However, we must take into account that, both cyclical capital and loan expenditures further increases Tunisian output volatility. The study contributes to the literature on two fronts. First, the study sheds lights on the impacts of institutional reforms on cyclical government expenditure and more precisely on administrative, capital, and loan expenditure. Second, the study investigates the role of institutional quality on the stabilizing role of cyclical fiscal policy. Our findings are important due to the fact that policy makers can use the recognized fiscal policy indicators accordingly, to enhance the desired direction of the needed fiscal policy to stabilize the Tunisian economy. This will be better applied following the improvement of institutional quality.

References

- Acemoglu, D., Johnson, S., Robinson, J., and Thaicharoen, Y. (2003). Institutional causes, macroeconomic symptoms: volatility, crises, and growth. *Journal of Monetary Economics*, 50(1):49–123.
- Alesina, A., and Bayoumi, T. (1996). The costs and benefits of fiscal rules: Evidence from u.s. states. NBER Working Papers 5614, National Bureau of Economic Research, Inc.
- Alisdair.Mckay and Ricardo.Reis (2016). The role of automatic stabilizers in the us business cycle. *Econometrica*, 84(1):141194.
- Auerbach, A. J. (2009). Implementing the new fiscal policy activism. *American Economic Review*, 99(2).
- Badinger, H. (2008). Cyclical fiscal policy, output volatility, and economic growth. *SSRN eLibrary*.
- Badinger, H. (2012). Cyclical expenditure policy, output volatility and economic growth. *Applied Economics*, 44(7):835–851.
- Blanchard, O. and Perotti, R. (2002). An empirical characterization of the dynamic effects of changes in government spending and taxes on output. *forthcoming, Quarterly Journal of Economics*.
- Easterly, W. (2005). National policies and economic growth: A reappraisal. In Aghion, P. and Durlauf, S., editors, *Handbook of Economic Growth*, volume 1 of *Handbook of Economic Growth*, chapter 15, pages 1015–1059. Elsevier.
- Egert, B. (2014). Fiscal policy reaction to the cycle in the oecd: pro- or counter-cyclical? *Mondes en dloppement*, 3(167):35–52.
- Fatas, A. and Mihov, I. (2003). The case for restricting fiscal policy discretion. *The Quarterly Journal of Economics*, 118(4):1419–1447.
- Fatas, A. and Mihov, I. (2005). Policy volatility, institutions and economic growth. CEPR Discussion Papers 5388, C.E.P.R. Discussion Papers.
- Fatas, A. and Mihov, I. (2012). Fiscal policy as a stabilization tool. *The B.E. Journal of Macroeconomics, De Gruyter*, 12(3):1–68.
- Henisz, W. (2017). Polcon codebook. <http://www.databanks.sitehosting.net>.
- Ilzetki, E. and Vegh, C. A. (2008). Procyclical fiscal policy in developing countries: Truth or fiction? Working Paper 14191, National Bureau of Economic Research.
- Keefer, P. (2017). Database of political institutions 2017. World Bank.
- Kondo, A. and Svec, J. (2009). Fiscal policy cyclicalilty and growth within the u.s. states. Working Papers 0911, College of the Holy Cross, Department of Economics.
- Lee, Y. and Sung, T. (2007). Fiscal policy, business cycles and economic stabilisation: Evidence from industrialised and developing countries. *Fiscal studies*, 28:437–462.
- Leigh, D. and Stehn, S. J. (2009). Fiscal and monetary policy during downturns: Evidence from the g7. *International Monetary Fund WP/09/50IMF Working Paper*.
- Persson, T. and Tabellini, G. (2001). Political institutions and policy outcomes: What are the stylized facts? CEPR Discussion Papers 2872, C.E.P.R. Discussion Papers.
- Poterba, J. (1994). State responses to fiscal crises: The effects of budgetary institutions. *Journal of Political Economy*, 102.
- Talvi, E. and Vegh, C. (2005). Tax base variability and procyclical fiscal policy in developing countries. *Journal of Development Economics*, 78(1):156–190.
- Von Hagen, J. and Harden, I. (1995). Budget processes and commitment to fiscal discipline. *European Economic Review*, 39:771–79.
- Zaric, S. (2018). Cyclic characteristics of macroeconomic variables in serbia. *Industrija*, Vol.46(No.1).

Table

Table 6: Appendix: The Cyclical and Discretionary Components of Fiscal Policy

	CYC1	DISCR1	CYC2	DISCR2	CYC3	DISCR3	CYC4	DISCR4
1	-7.75	-0.00	-8.76	-0.00	-4.31	-0.00	-9.69	-0.00
2	0.87	0.00	1.12	0.00	-2.16	-0.00	1.27	0.00
3	0.30	-0.23	0.55	-0.30	-4.22	0.02	0.71	-0.02
4	0.18	0.52	0.43	0.68	-3.29	0.08	0.59	0.04
5	0.06	0.11	0.38	0.07	-2.11	0.08	0.22	0.03
6	-0.04	0.11	0.32	0.10	-1.83	0.04	-0.10	0.02
7	-0.01	-0.13	0.36	-0.24	-1.66	0.14	-0.13	0.01
8	-0.32	0.26	0.08	0.35	-1.35	0.07	-0.72	0.02
9	-0.46	-0.21	-0.15	-0.52	-3.21	0.69	-2.72	-0.05
10	-0.55	-0.17	-0.34	-0.42	-1.44	0.58	-1.67	-0.04
11	-0.81	-0.26	-0.77	-0.49	-1.01	0.27	-0.84	-0.03
12	-0.81	0.01	-0.78	-0.18	-0.99	0.25	-0.79	-0.04
13	-0.98	-0.11	-0.48	0.24	-1.51	-0.98	-0.34	0.11
14	-1.02	-0.04	-0.39	0.16	-0.83	-0.67	0.09	0.06
15	-1.10	-0.09	-0.39	-0.01	-0.61	-0.40	0.24	0.04
16	-1.05	0.12	-0.31	0.37	-0.50	-0.62	0.33	0.08
17	-1.05	-0.00	-0.46	0.44	-0.79	-0.70	0.73	-0.16
18	-1.03	-0.04	-0.54	0.27	-0.91	-0.31	0.89	-0.13
19	-0.98	-0.16	-0.55	0.02	-0.86	0.22	1.00	-0.16
20	-1.01	0.07	-0.68	0.32	-0.85	0.02	1.05	-0.06
21	-0.96	0.41	-0.71	-0.39	-1.02	1.56	1.12	0.26
22	-0.90	0.37	-0.77	-0.39	-1.24	1.42	1.18	0.24
23	-0.85	0.20	-0.93	-0.49	-1.68	1.19	1.24	0.17
24	-0.82	0.48	-0.94	-0.15	-1.73	0.55	1.26	0.31
25	-0.77	-0.39	-0.97	0.16	-1.98	-1.13	1.27	-0.08
26	-0.74	-0.37	-0.99	0.13	-2.24	-0.99	1.27	-0.09
27	-0.75	-0.53	-0.99	-0.03	-2.15	-0.81	1.27	-0.16
28	-0.59	0.81	-0.62	1.32	-2.14	-0.02	1.23	-0.19
29	-0.39	0.57	-0.43	0.41	-2.48	1.41	1.13	-0.24
30	-0.19	-1.16	-0.16	-1.37	-2.12	-0.40	1.12	0.03
31	-0.18	0.05	-0.19	-0.15	-1.51	0.90	1.05	-0.21
32	-0.40	0.82	-0.39	0.64	-1.43	-0.11	0.94	0.18
33	-0.48	0.44	-0.57	0.80	-1.21	-0.72	0.87	0.22
34	-0.49	-1.64	-0.57	-1.32	-1.25	-1.94	0.87	0.02
35	-0.58	0.35	-0.79	0.60	-1.07	-0.56	0.79	0.22
36	-0.60	0.25	-0.87	0.54	-1.02	-0.75	0.79	0.11
37	-0.61	-0.02	-0.91	-0.07	-0.99	0.07	0.69	-0.13
38	-0.63	-0.37	-0.97	-0.66	-0.97	0.39	0.70	0.05
39	-0.60	-0.17	-0.78	-0.60	-1.09	0.60	0.65	0.16
40	-0.48	0.61	-0.65	0.43	-0.95	0.67	0.65	0.00
41	-0.48	-0.33	-0.65	-0.04	-0.94	0.08	0.64	-0.44
42	-0.41	-0.40	-0.59	-0.24	-1.05	0.49	0.73	-0.34
43	-0.43	-0.48	-0.60	-0.20	-1.06	-0.18	0.70	-0.44
44	-0.21	0.94	-0.21	1.26	-0.86	0.72	0.52	-0.47
45	-0.30	0.44	-0.31	0.43	-0.75	-0.49	0.27	0.52
46	-0.39	-0.40	-0.41	-0.40	-0.94	-0.84	0.42	0.31
47	-0.38	0.38	-0.40	0.39	-0.95	-0.83	0.42	0.40
48	-0.83	1.07	-0.94	1.02	-1.01	0.15	-0.07	0.55
49	-1.87	-1.67	-2.86	-1.77	-1.40	-0.96	-0.40	-0.28
50	-1.94	0.33	-2.91	0.08	-1.51	0.98	-0.35	-0.14
51	-1.95	-0.85	-2.95	-1.06	-1.51	-0.04	-0.35	-0.17
52	-2.00	0.28	-3.01	0.09	-1.58	1.01	-0.33	-0.13
53	-2.24	0.26	-2.89	-0.04	-1.50	-0.25	-0.74	0.66
54	-2.02	0.73	-2.54	0.55	-1.50	-0.02	-0.57	0.62
55	-1.76	0.67	-2.14	0.51	-1.58	-0.43	-0.38	0.63
56	-1.56	0.24	-1.95	0.12	-1.71	-0.27	-0.06	0.60
57	-0.99	-0.93	-1.75	-0.15	-1.77	0.10	0.57	-1.53
58	-1.04	-0.16	-1.25	0.88	-1.47	0.90	0.23	-1.57
59	-1.04	0.00	-1.16	0.81	-1.43	0.66	0.18	-1.43
60	-0.99	0.74	-1.02	1.43	-1.36	1.44	0.14	-1.34
61	-1.01	-0.17	-1.44	-2.25	-1.32	0.47	0.27	2.44
62	-1.43	0.68	-0.71	-1.11	-2.08	1.26	-1.51	2.45
63	-1.38	-0.10	-0.29	-1.52	-1.99	-0.14	-0.72	2.30
64	-1.00	1.04	-0.49	-1.05	-1.72	0.58	-1.47	2.39
65	-1.47	-2.98	-0.59	-1.00	-2.19	-2.30	-2.04	-3.23
66	-3.00	-2.12	-0.75	-0.51	-4.95	-1.48	-0.01	-3.09
67	-2.68	-1.42	-0.94	0.83	-2.82	-1.26	-0.90	-2.95
68	-2.34	-1.35	-0.99	0.71	-2.67	-0.78	-1.29	-2.84
69	-2.16	3.22	-1.94	2.74	-3.44	0.97	-0.64	2.12
70	-1.78	2.51	-0.99	1.60	-2.40	0.88	-2.12	2.04
71	-1.15	2.33	-2.42	1.81	-4.28	0.82	-0.14	1.93
72	-0.43	1.03	-0.80	0.98	-1.84	0.64	0.85	1.58
73	-0.93	1.20	-1.14	0.56	-2.17	0.26	0.85	-0.01
74	-2.41	-3.26	-4.55	-2.84	-3.23	-1.12	0.47	-1.33
75	-1.82	-1.18	-2.33	-1.14	-2.72	-0.68	0.58	-0.69
76	-1.72	-0.73	-2.17	-0.52	-2.62	-0.62	0.59	-0.83
77	-1.60	1.41	-1.92	1.60	-2.78	-1.09	0.62	1.00
78	-1.78	0.44	-2.33	0.49	-2.10	-1.56	0.55	1.14
79	-1.49	0.71	-1.68	0.84	-2.57	-1.04	0.62	0.86
80	-1.24	0.36	-1.26	0.43	-5.80	-0.74	0.72	0.70
81	-1.08	-0.34	-0.76	-1.08	-1.77	1.90	0.75	-0.23
82	-1.08	-0.71	-0.76	-1.50	-1.79	2.90	0.75	-0.47
83	-0.97	-2.09	-0.61	-2.84	-1.70	1.59	0.75	-0.45
84	-0.97	-0.22	-0.61	-1.00	-1.72	2.37	0.75	-0.40
85	-1.05	-0.72	-0.62	-0.12	-1.51	-1.72	0.74	-0.51
86	-1.09	-0.88	-0.63	-0.21	-1.46	-1.88	0.74	-0.47
87	-1.25	0.56	-1.01	1.37	-1.87	-1.62	0.75	-0.30
88	-1.56	-0.31	-0.93	0.09	-1.39	-0.65	0.67	-0.61
89	-1.98	1.07	-1.09	0.75	-1.21	1.08	0.65	0.54
90	-2.02	1.01	-1.09	0.54	-1.18	2.01	0.64	0.44
91	-2.13	0.17	-1.04	-0.19	-1.06	0.86	0.62	0.47
92	-1.34	1.91	-2.44	1.80	-0.65	1.44	0.56	0.60
93	-1.45	0.19	-4.71	0.56	-0.58	-0.40	0.50	-0.53
94	-1.69	0.80	-2.22	1.35	-0.57	-0.14	0.49	-0.39
95	-1.72	0.09	-1.90	0.58	-0.50	-1.35	0.48	-0.38
96	-1.11	0.57	-1.15	1.54	-1.27	-1.91	0.48	-0.02
97	-0.80	-1.68	-0.73	-2.16	-1.12	-0.84	0.49	0.08
98	-0.62	-1.52	-0.49	-1.90	-1.09	-0.26	0.49	0.13
99	-0.40	-1.37	-0.21	-1.63	-1.03	-0.32	0.50	0.11

The Incremental Value of Islamic Social Reporting: Evidence from Companies Listed in Jakarta Islamic Index

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Abstract

The purpose of this study is to investigate the value relevance of Islamic social reporting disclosures in influencing the firm value. Islamic Social Reporting (ISR) is a Corporate Social Responsibility (CSR) reporting model for sharia-based institutions. Indonesia has not required ISR as a mandatory disclosure to sharia-based companies. This study was designed using causal research and analysed using multiple regression analysis. The sample of this research is companies listed in the Jakarta Islamic Index (JII) from 2014–2017. The result shows while ISR is still voluntary disclosure in Indonesia, and there are no standards for governing implementation, ISR does have incremental value in affecting firm value. The implications are significant for sharia-based companies in implementing ISR.

Keywords: Debt to Equity Ratio, Firm Size, Islamic Social Reporting, Return On Asset

1. Introduction

This study was conducted to examine the effect of incremental Islamic Social Reporting (ISR) and financial factors on firm value. In the public corporation, the company's value reflected in the share price traded on the stock exchange. So if the higher the stock price, the higher the wealth of shareholders (Mishra & Modi, 2016). Jakarta Islamic Index (JII) is one of the stock indexes in the Indonesia Stock Exchange (IDX), which calculates the share price for the type of stocks that meet the standards of Shariah. JII refers to the 30 Islamic stocks that have qualified are set by the National Sharia Board-Indonesian Ulema Council (DSN-MUI). Value companies featured in the JII in the last four years tends to decline, as seen in the chart below.

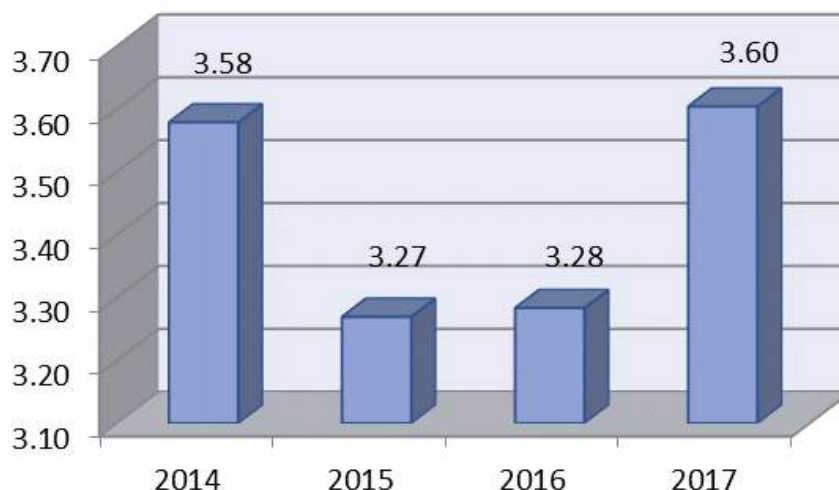


Figure 1: The trend of firm value
Source: data processed (2018)

The above data illustrates the value of the company at JII stock index from 2014 to 2017. Based on the data presented above, the relative firm value increased per year, but in 2015, the company's value declined significantly from 3.56 to 3.21. This decline was continued until 2016. It is interesting to study the factors that affect the firm value and whether the ISR contains additional information that will also affect the firm value.

Currently, the concept of CSR is not only growing in the conventional economy but also thrive on Islamic economic sectors. It's getting a lot of companies that apply the concept of Islamic in its business activity under the law and Sharia. And corporate responsibility is one aspect of the highlights to conform to the principles of Islam. Mir, Hassan, & Hassan, (2016) state that the values of Islam brought by Prophet Muhammad can serve as the basis of corporate social responsibility as well as on a conventional company. El-Halaby and Hussainey (2015) concluded that Islamic values have relevant relationships and have contributed to the concept of CSR that has been developed at this time.

The conceptual framework of ISR was first conceived by Haniffa (2002). The ISR in Islam must disclose matters related to the principles of Sharia and avoid from transactions contrary to the principles of Islamic law, while an opposite transaction with Islamic principles, such as transaction containing interest (riba), persecution (Zul), games of chance or speculation (maysir) and excessive uncertainty (gharar). And should reveal the social aspects, such as the endowment (waqf), interest-free loan(qardhul hasan), charity (sadaqah), and disclosure of worship in a corporate environment. CSR disclosure in Indonesia is still voluntary and nearly largely based on the standards disclosure contained in the Global Reporting Initiative (GRI) Index. The measurement is considered inappropriate for the sharia-based company because the company discloses information that proves the company is operating in accordance with Islamic law. Users GRI does not describe Islamic principles, such as disclosure of liberation effort from elements of usury, hazard, and uncertainty (gharar), and other illicit transactions.

Profitability is the ratio used to measure a company's ability to generate profits from other normal activities (C. Doktoralina and Apollo, 2019). Leverage is a financial ratio used to measure how much the company is financed by debt and ability to repay the finance, both long term, and short term. Profitability is important because companies generally aim to make a profit, while the debt has a good or bad influence for the company (Kartikasari and Merianti, 2016).

Research on the factors that affect the value of the company has been carried out by previous researchers but still shows the inconsistency of results. Suffah and Riduwan, (2016) state profitability, leverage, and dividend policy have a positive effect on corporate value, while the size of the company does not affect the value of the company. Novari & Lestari, (2016) disclose the size of the company and significant positive effect on firm value, leverage does not significantly influence the company's value, and profitability and significant positive effect on firm

value. While Suwardika and Mustanda (2017) prove the profitability leverage and positive effect on the value of companies, growth companies have a negative relationship.

Sartono (2001) suggested that the company have attention to the environmental impact of their operational activities. The purpose environmental impact of to the notice is companies will not face difficulties on the products because "boycott actions" by the community (as a form of protest) which then have an impact on decreasing the value of the company. The CSR is also a phenomenon and strategies used by companies to accommodate the needs of their stakeholders. The government supports the liability of companies doing business in the area or activities associated with the natural resources to carry out their responsibilities to the environment. The government support was stated in Law Number 40 of 2007 concerning Limited Liability Companies article 74. Therefore, this study is essential to strengthen the confidence of stakeholders on the importance of ISR disclosure for institutions whose activities are based on sharia to enhance shareholder value further.

2. Literature Review and Hypotheses

2.1 Theoretical Studies

Stakeholder theory said that the company is not the only entity that operates for its own account but must provide benefits to stakeholders (shareholders, creditors, customers, suppliers, analysts, and others). Thus the company's presence is strongly influenced by the support provided by the stakeholders to the company (Chariri & Ghozali, 2007). Stakeholder strategy not only financially, but also in social performance carried out by the company. The ISR is a strategy undertaken by the company in the disclosure of the company's activities to satisfy the desires of stakeholders

Dowling & Pfeffer, (1975) revealed that legitimacy is an important thing for the organization, the limits outlined in the social norms and values, as well as a reaction to these restrictions, encourage the importance of organizational behaviour analysis by looking at the environment. The theory of legitimacy in the general form provides an important view of the practice of corporate social disclosure.

In the financial theory of capital markets, stock prices in the market referred to the concept of enterprise value (Naufal, 2014). Dianawati & Fuadati (2016) describe Firm Value (Rated companies) are willing to pay the price which prospective investors if the company will be sold. Meanwhile, according to Ramadan (2015), the value of the company is aimed at stock price. Then if the higher price of the stock market, the higher the wealth of shareholders.

One approach to measuring the value of the company is Price to Book Value (PBV) ratio. The PBV describes how much the market values the book value of a company's stock. The higher the PBV ratio, the market believes in the prospect of the company. The PBV also shows how far a company is able to create company value relative to the amount of capital invested. In companies whose business is running well, generally this ratio reaches above one, this shows that the stock market value is greater than the value of the book. The formula used to measure the PBV is as follows:

$$PBV = \frac{\text{Market price per share}}{\text{Book value per share}}$$

2.1 Profitability

The profitability ratio consists of two types of ratios that show profitability in relation to sales and ratios that show profitability in relation to investment. Together, this ratio will show the overall operational effectiveness of the company (Van Horne and Wachowicz, 2013). According to Hermanto & Agung (2015) is a profitability ratio that measures the effectiveness of management shown by the profit generated in sales and investment companies. Return on Assets (ROA). This ratio measures the rate of return from the sale or all of the existing assets. ROA selected because it describes the efficiency of the funds used in the company and is commonly used to view the performance of profitability. ROA is also sometimes referred to as Return on Investment (ROI). C. M. Doktoralina, Anggraini, Safira, & Melzatia (2018) states that companies with high ROA tend not to disclose

sustainability reports. Previous research conducted by Suffah and Riduwan (2016) stated that profitability has a positive direction toward company value. The study identified that the higher the value of profitability, the higher the value of the company.

H₁: Profitability is positively correlated with firm value

2.2 Leverage

Debt to Equity Ratio is the ratio used to assess the debt for equity. This ratio is chosen because it is useful to know the amount of funds provided the borrower (creditors) with the owner of the company and is commonly used to highlight the performance of the company. Loan funds are intended for long-term debt and current debt. The research conducted by Suffah and Riduwan (2016) shows that capital structure (leverage) has a positive effect on firm value, this is caused by the use of company assets which are largely financed with debt effectively. The effective use of debt will generate profits, which will ultimately have an impact on the value of the company.

H₂: Leverage is positively correlated with firm value

2.3 Islamic Social Reporting (ISR)

Haniffa, (2002) explained that if the ISR will be needed by the Muslim community with the aim to reveal accountability to God and the wider community in order to obtain information that helps them meet their spiritual needs. In this study, the authors used an index ISR developed by (Othman and Thani, 2010). There are six themes of disclosure, in which five other themes is the theme expressed by Haniffa (2002), and the other theme is the theme developed by (Othman and Thani, 2010).

Disclosure of ISR is Financing and Investment Themes; Themes Products/Services; Employees Scene; Society Scene; Environmental themes and the theme of corporate governance. ISR index in this study was determined by the method of content analysis at the company's annual report. ISR indices used in this study only about 42 items, due to differences in regulations between research (Othman and Thani, 2010) conducted in Malaysia and Indonesia. So the biggest score is 42, and the smallest is 0 for each company in each year. Islamic Social Reporting Indexed of Companies (ISRI) great value if it achieves 100% disclosure.

$$ISRI_j = \frac{\sum X_{ij}}{n}$$

Information:

ISRI_j = Islamic Social Reporting Indexed of Companies j

$\sum X_{ij}$ = number of items/indicators expressed firm j

n = Total items/indicators disclosures (42 items)

Haniffa (2002) states how important ISR disclosure is to show corporate accountability to the public. Muslim stakeholders expect to get information as a facility provided by the company to them in decision making. ISR disclosure aims to build a good corporate image in the community. Previous research conducted by Cahya, Nuruddin, and Ikhsan (2017) states that the disclosure of ISR has a positive and significant effect on firm value. Iskandar and Efita (2016) prove that CSR disclosure has a positive effect on firm value. Through ISR disclosure, the public will give a positive appreciation along with the increase in the company's stock price.

H₃: ISR is positively correlated with firm value

2.4 Firm Size

Research conducted by Novari and Lestari (2016) states that company size has a significant influence on firm value. Inchausti (1997) found that large companies may have potential conflicts between management and the stakeholders.

H₄: Firm size is positively correlated with firm value

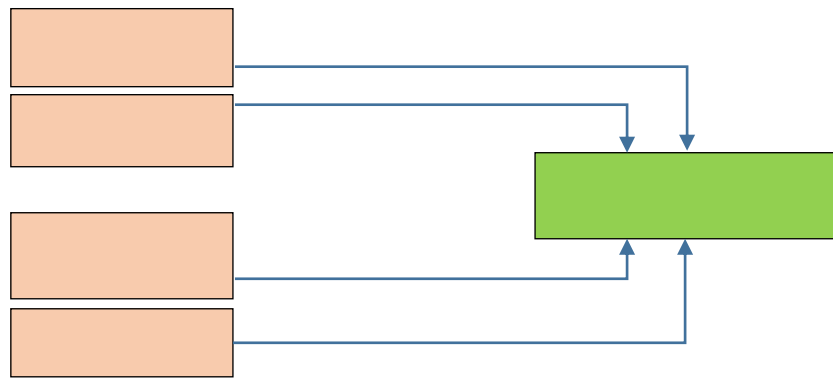


Figure 1. Research Model

3. Method

This study will test the incremental value of ISR after testing the information content of the general performance ratios and company size. First, the study will examine the correlation of each profitability, Leverage, firm size, and ISR to find out how each variable influences investor decisions reflected in the value of the company. Then to test the value of the information content, the ISR will be compared with the information content of the previous three variables.

This study uses two testing methods. First, do the correlation test, then the second test compares the R^2 value of each regression model to see the level of information content contained in each variable. The research model was formed as follows:

Regression model 1: $PBV = a + b_1ROA + b_2DER + e$

Regression Model 2: $PBV = a + b_1ROA + b_2DER + b_3SIZE + e$

Regression Model 3: $PBV = a + b_1ROA + b_2DER + b_3SIZE + b_4ISR + e$

Before the two test methods were carried out, the classical assumption test was carried out in this study consisting of a normality test, multicollinearity test, heteroscedasticity test, and autocorrelation test as a regression test requirement.

4. Results and Discussion

4.1 Descriptive Statistics

Table 1: Descriptive Statistics

	N Statistic	Minimum Statistic	Maximum Statistic	Mean Statistic	Std. Deviation Statistic
PBV	52	.377	82.451	7.50394	16.8451
ROA	52	.010	.439	.11115	.092605
Leverage	52	.022	2.655	.78225	.745842
Size		15.980	19.500	17.46952	.968617
ISR	52	.581	.0860	.68198	.075145

Source: Data Processed

Table 1, shows the average value of PBV is 7.503 which means that the market price of the company's share was 7.5 times higher from the book value of the share, the sample company has a high share value. The average value of ROA was 11.11% shows the ability of the company to generate profits of 11.11% of the total assets it has. The average DER was 78.23%, indicating that corporate financing from loans was 78.23% of total equity. While the average value of the ISR of the sample companies is 0.67825 or equal to 68.19% of the 43 items of the disclosure, this means that the average company sample reveals as many as 29 ISR disclosure items. This amount represents more than half of the disclosure items disclosed by the sample companies.

4.2 Classic Assumption Test

After a normality test, the results show that the data is not normally distributed, then the data is transformed into the Log. After the data is transformed, the data has been normally distributed. Based on the results of the classic assumption test, the data proved to fulfill the free assumption of multicollinearity and heteroscedasticity, but positive autocorrelation was found for all regression models.

4.3 Correlation between Operational Variables

Table 2 shows that ROA, DER, and ISR are positively correlated with PBV. Based on the correlation test results, it is proven that H_1 is accepted, for DER and ISR information (H_2 and H_4) the correlation is positive but not significant, so H_2 and H_4 are not accepted. This study is not consistent with the results of Pratama and Wiksuana, (2016); Suffah and Riduwan, (2016); Suwardika and Mustanda, (2017) which states that leverage has a significant effect on firm value. However, the results of this study are consistent with the results of the Novari and Lestari (2016) study. And according to the Jakarta Islamic interest-based total debt index compared to total equity, not more than 82% (interest-based debt compared to total equity, not more than 45%: 55%). So that companies in carrying out their activities rely more on their own capital than debt. ISR does not significantly correlate with firm value because ISR disclosure is still voluntary, and there is no prescribed disclosure standard.

Table 2: Pearson Correlation

		PBV	ROA	DER	SIZE	ISR
PBV	Pearson Correlation	1	.832**	.246	-.283*	.245
	Sig. (2-tailed)		.000	.079	.042	.080
ROA	Pearson Correlation	.832**	1	-.013	-.277*	.135
	Sig. (2-tailed)	.000		.927	.047	.339
DER	Pearson Correlation	.246	-.013	1	.171	.203
	Sig. (2-tailed)	.079	.927		.226	.148
SIZE	Pearson Correlation	-.283*	-.277*	.171	1	.241
	Sig. (2-tailed)	.042	.047	.226		.085
ISR	Pearson Correlation	.245	.135	.203	.241	1
	Sig. (2-tailed)	.080	.339	.148	.085	

Source: Data Processed

Meanwhile, firm size is negatively correlated with firm value, so H_3 is not accepted. This shows that the larger the size of the company, the smaller the value of the company. Risk-averse Investors see large companies tend to have more complex problems than small companies; therefore, conservative investors prefer to invest in small companies to avoid higher investment risks. The results of this study are not consistent with prior research, Pratiwi, Yudiaatmaja, and Suwendra, (2016); Suwardika and Mustanda, (2017) stated that company size has a positive and significant effect on firm value.

4.4 Regression Test with Comparison of R^2 values

In order to test the information content of the variables ROA, DER, SIZE, and ISR, a regression test is performed by comparing the value of R^2 from the three previously formed regression models. R^2 is a measure to find out how much the ability of the independent variable to explain the dependent variable. The greater the R^2 , the greater the influence of the independent variables on the dependent variable.

Regression model 1: $PBV = a + b_1ROA + b_2DER + e$

Regression Model 2: $PBV = a + b_1ROA + b_2DER + b_3SIZE + e$

Regression Model 3: $PBV = a + b_1ROA + b_2DER + b_3SIZE + b_4ISR + e$.

Table 3: ISR Information Content Test Results

	Model 1	Model 2	Model 3
F stat	76.754	53.083	41.953
Sig.	.000	.000	.000
R square	.758	.768	.781
Adjusted R square	.748	.754	.763

Source: Data Processed

The research model can be said to be good at predicting company value, and this can be seen from the significance value of 0.000. From table 3, it can be seen in regression model 1 that the contribution of the effect of ROA and DER on PBV together is 74.8%. From the results of this test, it can also be proven that there is an increase in the value of R^2 seen from the adjusted R^2 in the regression model 2 of 0.6% to 75.4% after the SIZE variable is entered. Based on the results of the adjusted R^2 test value in the regression model 3, the value increases again by 0.9% to 76.3%. Then hypothesis 4 can be accepted, meaning ISR is able to provide value-added financial statement information content that will affect the value of the company, even though the increase in value is very small.

5. Conclusion and Suggestion

The results of the study based on regression tests into three models prove that Islamic Social Reporting has incremental value information content when ISR becomes part of financial reporting. In other words, the results of the study indicate the value relevance of Islamic Social Reporting disclosure as part of financial reporting. The future research can then use a comparative method to compare the incremental value of ISR between sharia-based companies and public companies or replace the analysis unit on a larger scale, such as the Indonesian Syariah Stock Index (ISSI).

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References

- Cahya, B. T., Nuruddin, A., & Ikhsan, A. (2017). Islamic Social Reporting: From the Perspectives of Corporate Governance Strength, Media Exposure and the Characteristics of Sharia Based Companies in Indonesia and its Impact On Firm Value. *IOSR Journal Of Humanities And Social Science (IOSR-JHSS)*, 22(5), 71–78.
- Chariri, A., & Ghozali, I. (2007). *Teori Akuntansi* (Edisi Ketu). Semarang, Jawa Tengah, Indonesia: Badan Penerbit Universitas Diponegoro.
- Dianawati, C. P., & Fuadati, S. R. (2016). Pengaruh CSR dan GCG Terhadap Nilai Perusahaan: Profitabilitas Sebagai Variabel Intervening. *Jurnal Ilmu Dan Riset Manajemen*, 5(1), 1–18.
- Doktoralina, C., & Apollo, A. (2019). The contribution of strategic management accounting in supply chain outcomes and logistic firm profitability. *Uncertain Supply Chain Management*, 7(2), 145–156.
- Doktoralina, C. M., Anggraini, D., Safira, & Melzatia, S. (2018). The Importance of Sustainability Reports In Non-Financial Companies. *Jurnal Akuntansi*, 22(3), 368–384. <https://doi.org/http://dx.doi.org/10.24912/ja.v22i3.394>
- Dowling, J., & Pfeffer, J. (1975). Organizational legitimacy: Social values and organizational behavior. *Pacific Sociological Review*, 18(1), 122–136.
- El-Halaby, S., & Hussainey, K. (2015). The determinants of social accountability disclosure: Evidence from Islamic banks around the world. *International Journal of Business*, 20(3), 202–223.
- Haniffa, R. (2002). Social reporting disclosure: an Islamic perspective. *Indonesian Management & Accounting Research*, 1(2), 128–146.
- Hermanto, B., & Agung, M. (2015). *Analisa Laporan Keuangan*. Jakarta: Lentera Ilmu Cendekia.
- Inchausti, B. G. (1997). The influence of company characteristics and accounting regulation on information disclosed by Spanish firms. *European Accounting Review*, 6(1), 45–68.
- Iskandar, D., & Efita, F. (2016). The Effect of Carbon Emissions Disclosure and Corporate Social Responsibility

- on the Firm Value with Environmental Performance as Variable Control. *Research Journal of Finance and Accounting*, 7(9), 122–130.
- Kartikasari, D., & Merianti, M. (2016). The effect of leverage and firm size to profitability of public manufacturing companies in Indonesia. *International Journal of Economics and Financial Issues*, 6(2), 409–413.
- Mir, U. R., Hassan, S. M., & Hassan, S. S. (2016). Islamic perspective of corporate social responsibility. *Al-Adwa*, 31, 77–90.
- Mishra, S., & Modi, S. B. (2016). Corporate social responsibility and shareholder wealth: The role of marketing capability. *Journal of Marketing*, 80(1), 26–46.
- Naufal, H. (2014). *Manajemen Keuangan: Berbasis Balanced Scorecard: Pendekatan Teori, Kasus, dan Riset Bisnis*. Jakarta: Bumi Aksara.
- Novari, P. M., & Lestari, P. V. (2016). Pengaruh Ukuran Perusahaan, Leverage, Dan Profitabilitas Terhadap Nilai Perusahaan Pada Sektor Properti Dan Real Estate. *E-Jurnal Manajemen*, 5(9).
- Othman, R., & Thani, A. (2010). Islamic social reporting of listed companies in Malaysia. *International Business & Economics Research Journal*, 9(4), 135–144.
- Pratama, I. G. B. A., & Wiksuana, I. G. B. (2016). Pengaruh ukuran perusahaan dan leverage terhadap nilai perusahaan dengan profitabilitas sebagai variabel mediasi. *E-Jurnal Manajemen*, 5(2).
- Pratiwi, N. P. Y., Yudiaatmaja, F., & Suwendra, I. W. (2016). Pengaruh struktur modal dan ukuran perusahaan terhadap nilai perusahaan. *Jurnal Jurusan Manajemen*, 4(1).
- Ramadan, I. Z. (2015). Leverage and the Jordanian firms' value: empirical evidence. *International Journal of Economics and Finance*, 7(4), 75–81.
- Sartono, A. (2001). *Manajemen Keuangan Teori dan Aplikasi* (Edisi Keem). Yogyakarta, Indonesia: BPFE, Yogyakarta.
- Suffah, R., & Riduwan, A. (2016). Pengaruh profitabilitas, leverage, ukuran perusahaan dan kebijakan dividen pada nilai perusahaan. *Jurnal Ilmu Dan Riset Akuntansi*, 5(2), 1–17.
- Suwardika, I. N. A., & Mustanda, I. K. (2017). Pengaruh Leverage, Ukuran Perusahaan, Pertumbuhan Perusahaan, Dan Profitabilitas Terhadap Nilai Perusahaan Pada Perusahaan Properti. *E-Jurnal Manajemen*, 6(3), 1248–1277.
- Van Horne, J. C., & Wachowicz, J. M. (2013). *Prinsip-Prinsip Manajemen Keuangan* (Edisi Ketu). Salemba Empat.

A Study on the Role of Guangdong-Hong Kong-Macao Greater Bay Area Based on the Belt and Road Initiative

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Abstract

China's Belt and Road Initiative aims at enhancing economic connectivity and cooperation between China and neighboring countries, and promote common prosperity. Guangdong is one of the leading economic regions of mainland China. Based on the guidance of the national policy, Guangdong-Hong Kong-Macao Greater Bay Area plays its role in the construction of the Belt and Road with its strong economic foundation, unique geographical location, complete infrastructure and industrial base, convenient transportation, and global financial center status. From the perspective of the dominant competitive advantage index, this paper analyzes the competition and trade cooperation in Guangdong-Hong Kong-Macao Greater Bay Area on the basis of the Belt and Road Initiative. In addition, this paper summarizes the current situation of investment and finances of Guangdong-Hong Kong-Macao Greater Bay Area in Belt and Road Initiative and presents strategies on how to play the role of the Guangdong-Hong Kong-Macao Greater Bay Area in the Belt and Road Initiative.

Keywords: The Belt and Road Initiative, Guangdong-Hong Kong-Macao Greater Bay Area, Dominant Competitive Advantage Index

1. Introduction

In September and October 2013, President Xi proposed the Belt and Road (B&R for short), with the hope that through the construction of the "Silk Road Economic Belt" and the "Maritime Silk Road", China and surrounding countries and regions will be able to pursue common prosperity and contribute more to the global economy (Jingtong et al., 2016).

Guangdong, Hong Kong and Macao are pioneers of China's reform and opening up. Guangdong, Hong Kong and Macao have created miracles of economic growth, and the economy has grown rapidly in the past 40 years. On the occasion of the 20th anniversary of the return of Hong Kong, China government has put forward a development plan for the Guangdong-Hong Kong-Macao Greater Bay Area city cluster. The construction of the Guangdong-Hong Kong-Macao Greater Bay Area is of practical significance. Firstly, it can give a fresh impetus to China's economic growth. Secondly, taking advantage of its strong economic strength, great innovation capability and good geographical location, the Guangdong-Hong Kong-Macao Greater Bay Area would be able to serve as a strategic hub in the construction of B&R (Keqiang, 2017).

Based on the theory of international sub-regional economic cooperation and economic growth-pole, this study constructs the relative evaluation index based on the modified Balassa's dominant comparative advantage index, and calculates the trade relations index between Guangdong, Hong Kong and Macao and the countries along the routes. Combining the comparative advantages and resources in different areas of the country, it suggests integrating the resources of the Guangdong-Hong Kong-Macao Greater Bay Area and giving full play to the area in the construction of the B&R.

2. Literature Review

2.1 Theoretical basis and strategic implication of B&R

In 1993, the Asian Development Bank pointed out that "Sub-regional cooperation are well-planned cross-border contiguous economic zones of multiple countries." B&R is naturally such a cross-border economic zone. In recent years, this kind of regional cooperation has rapidly boosted due to the influence of economic globalization and regional economic integration. In terms of academic concept, cross-border regional economic cooperation refers to a number of countries in the border areas of cross-border economic men or legal persons, based on the principle of equality and mutual benefit, and carrying out a wide variety of factors of production flow for the long period of economic collaboration activities. Its essence is to promote the free flow of production factors in the cross-border sub region within certain limits, which can then result in the effective allocation of resources and the improvement of production efficiency (Sisi, 2014).

Based on the above theory, the B&R Initiative focuses on the development of economic cooperation between China and its neighboring countries. The bilateral cooperation will promote cooperation on multilateral issues and then promote international cooperation, which means that the cooperation gained in a unit will be needed and popularized in a whole area.

From an economic perspective, Nadege (2015), an economist from the National Bureau of Asian Research (NBR), is mainly responsible for analyzing the economic relationships between China and the countries along the B&R. She interpreted that the strategy will promote the export of China's excessive output. Ziming (2014) mentioned that the B&R Initiative has three functions: first, to reduce foreign exchange reserves through foreign investment; second, to mitigate excessive capacity in the infrastructure sector; and third, to promote RMB's internationalization. Another important goal of the B&R Initiative is to alleviate the imbalance in economic development between the eastern and western regions of China. The Chinese economy is mainly concentrated in coastal provinces and cities. Through the B&R Initiative, it is possible to expand the opening-up of the western China and promote economic development on the western frontier.

From the perspective of Sino-America Gaming, some think tanks in the United States regard the B&R Initiative as a strategy of China's countermeasure against the United States' return to the Asia-Pacific region, and some even compare it to the "Marshall Plan." However, many scholars do not agree to compare with both. Ling (2015) mentions that the "Marshall Plan" is the postwar U.S. aid plan for Western Europe, mainly a political and security strategy, with the aim of forming a political and military alliance in the West that has a strong sense of Cold War ideology; while the B&R Initiative follows the principle of wide consultation, joint contribution and shared benefits, which is open and inclusive rather than exclusive, focusing on connectivity, cooperation and mutual benefit.

From the perspective of Sino-EU relations, Yiwei (2015) stressed that the key issue of the strategy lies in the connection between China and Europe, because both the land-based Silk Road Economic Belt and the Maritime Silk Road are heading to Europe, and both are aimed in linking the two major markets of power and civilization.

From the perspective of the “neighboring grate”, Professor Yunling (2015) advocates that the essence of the B&R Initiative is the building of a community of common destiny. There are two key points for its construction; the first point is cooperation and development, and to build an open platform of cooperation. It is important to promote a series of connected projects to benefit the countries along the B&R and finally achieve common prosperity; the second point is to foster cooperation with sustainable security and to address disputes in the spirit of justice, in order to reduce the risk of conflicts.

In short, the connotation of the B&R Initiative is to advocate a new concept of development, a new concept of security and a new concept of civilization by virtue of the spirit of mutual benefit and win-win cooperation promoted by the Silk Road and Treasure Voyages, aiming to form a community of common destiny and common prosperity without restrictions on regions, form and countries.

2.2 Guangdong-Hong Kong-Macao Greater Bay Area and economic growth pole

Since the states proposed the strategy of the Guangdong-Hong Kong-Macao Greater Bay Area, many scholars have studied the problem of building the Guangdong-Hong Kong-Macao Greater Bay Area. As a specific geographical unit, the bay area exists in the coastal zone, which usually includes one or several adjacent bays and bays with coastlines facing inland depressions, as well as coastal areas composed of land regions adjacent to bays or bays and adjacent islands (Green paper, 2016). On the contrary, the bay area economy refers to a regional economic pattern formed by the development based on the port city and the coastal city and bay hinterland area (Ni, 2017).

The Guangdong-Hong Kong-Macao Greater Bay Area is a bay area and an Urban Cluster. The urban agglomeration refers to the collection of several cities and towns with different sizes, different functions, and independent but closely related to each other in a certain region. This concept originated from the concept of Megalopolis proposed by the French geographer J. Gottmann (1957). Gottman cites the phenomenon of the continuous metropolitan area in the northeast of the United States as an example, and generalizes the relevant features of the metropolitan area: good geographical location and natural conditions such as middle latitude area and plain area; located in coastal areas, along major rivers and major railway lines. A larger city is an international port city or an international metropolis. It plays a central role in the national economy and an important role in the international economy, forming a banded spatial structure and a dense network structure; a population of over 25 million, a population density of over 250 people/square kilometers; and an industrial structure dominated by the tertiary industry.

The greater bay area and city cluster of the world are the growth poles of the national and regional economies. The concept of a growth pole was first presented by the French economist F. Perroux (1955). He pointed out that growth does not occur everywhere at the same time. It appears at different intensities first at some growth points or poles, then spreads through different channels and has different final impacts on the entire economy. G. Myrdal has systematically elaborated on the "growth pole" theory and its echo effect and diffusion effect, and pointed out that the diffusion effect refers to the capital, technology, talent and other factors of production through a series of transmission mechanisms from the process of constant shift to hinterland of divergent growth pole region, radiation and driving the development of hinterland region, in order to realize the overall development of region. The echo effect refers to the fact that the growth pole region will attract net population inflow, capital inflow and other factor resource inflow from the hinterland area, thereby accelerating its own development and reducing its hinterland development speed. The growth pole effect is a comprehensive effect of diffusion and echo effect (Shenglei, 2018).

Compared with world-class bay area economy, the Guangdong-Hong Kong-Macao Greater Bay Area has the following advantages: firstly, the Guangdong-Hong Kong-Macao Greater Bay Area has a large economic aggregate, good location conditions and a high degree of openness, as well as having the basic conditions for

building a world-class bay area economy. Secondly, under the framework of the Closer Economic Partnership Arrangement (CEPA), Guangdong, Hong Kong and Macao cooperation has made remarkable progress in the areas of trade in goods, trade in services and investment liberalization. Thirdly, the B&R strategy provides new support and impetus for accelerating the construction of Guangdong-Hong Kong-Macao Greater Bay Area. Fourthly, the establishment of the Guangdong free trade zone is conducive to the release of the reform dividends and creating a favorable institutional environment for the construction of the Guangdong-Hong Kong-Macao Greater Bay Area. For world-class bay areas such as the New York Bay Area and the San Francisco Bay Area, the Guangdong-Hong Kong-Macao Greater Bay Area has the following disadvantages: firstly, the world-class bay area is a multi-center group pattern, while the Guangdong-Hong Kong-Macao Greater Bay Area is still a mono-nuclear regional pattern. Secondly, the economic aggregate of the Guangdong-Hong Kong-Macao Greater Bay Area is large, but the per capita output value is low, less than one-fifth of the San Francisco Bay Area. Thirdly, the Guangdong-Hong Kong-Macao Greater Bay Area is absent from the world's top 100 innovation institutions, and its original innovation capacity is insufficient. Fourthly, Shenzhen and Hong Kong rank high in terms of global financial strength, but need to be deeply integrated (Xiaoli & Minghao, 2017).

The following section analyzes the driving role of the Guangdong-Hong Kong-Macao Greater Bay Area in B&R from the aspects of trade and investment.

3. Analysis of the Competitive and Cooperative Situation of B&R between Guangdong, Hong Kong and Macao

3.1 The Scope of Research

B&R is an open network of international regional economic cooperation with no precise spatial scope. In order to facilitate researches of the cooperation between Guangdong, Hong Kong and Macao and the B&R Initiative, the scope of research was established by 68 countries and regions along the route, covering 65 countries and regions in Central Asia, South Asia, Southeast Asia, West Asia and parts of Europe. Since Hong Kong and Macao are independent customs duty zones, serving as separate economic zones in foreign trade and other economic activities, they will be divided into two partitions. In this case, eight sectors were divided based on the regional attribution (Table 1 and Figure 1). With a total population of over 4.4 billion, the countries and regions involved in the B&R produce a total economic output of about US\$21 trillion, accounting for 62.5 and 28.5% of the world respectively. In 2016, China's total trade volume with other countries along the routes was about US\$953.59 billion, accounting for 25.7% of China's total foreign trade (Big Data for the Belt and Road Initiative, 2017).

Table 1. Countries (Regions) along the Belt and Road

Region	Countries (Regions)
China	Chinese mainland, Hong Kong, Macau
ASEAN Free Trade Area	Singapore, Malaysia, Indonesia, Myanmar, Thailand, Laos, Cambodia, Vietnam, Brunei and the Philippines
The Mongolia in East Asia	Mongolia
18 countries in Western Asia	The Islamic Republic of Iran, Iraq, Turkey, Syria, Jordan, Lebanon, Israel, Palestine, Saudi Arabia, Yemen, Oman, the United Arab Emirates, Qatar, Kuwait, Bahrain, Greece, Cyprus and Sinai Peninsula in Egypt
8 countries in South Asian	India, Pakistan, Bangladesh, Afghanistan, Sri Lanka, the Maldives, Nepal and Bhutan
5 countries in Central Asia	Kazakhstan, Uzbekistan, Turkmenistan, Tajikistan and Kyrgyzstan.
7 CIS countries	Russia, Ukraine, Belarus, Georgia, Azerbaijan, Armenia and the Republic of Moldova
16 countries in Central and Eastern Europe.	Poland, Lithuania, Estonia, Latvia and the Czech Republic, Slovakia, Hungary, Slovenia, Croatia, Herzegovina, Montenegro, Serbia, Albania, Romania, Bulgaria, Macedonia



Figure 1. The Silk Road Economic Belt. Source: The China Daily

3.2 Data Sources and Declaration

This article analyzes the trade data along the B&R in mainland China, Hong Kong, Macao and other 65 countries (regions). Data from mainland China, Hong Kong, Macao and other 65 countries (regions) along the B&R were collected from UN Comtrade (COMTRADE) and data from Guangdong were collected from the Statistical yearbook of Guangdong province. According to the Standard International Trade Classification (SITC) adapted by Rev.4 from the UN Comtrade (COMTRADE), all data were classified into the catalogue of imports and exports, the countries of trade, the volume of goods trade, the volume of trade, and the statistical units are in millions of dollars.

Using the UN Trade Data to calculate the relative dominance comparative advantage of 0 to 9 categories of commodities in mainland China, Hong Kong, Macao, Taiwan and other 65 countries (regions) along the B&R, there is a capability of analyzing the trade status of Guangdong, Hong Kong and Macao by Revealed Comparative Advantage and trade relations between Guangdong, Hong Kong and Macao and countries along the B&R.

According to the SITC, the commodity structure of a country's foreign trade includes two major categories, primary products (Categories 0-4) and manufactured goods (Categories 5-9). Details are shown in Table 2.

Table 2. Detailed Structure of SITC

<i>Category</i>	SITC	Commodity structure
<i>The primary product</i>	SITC0	Food and live animals
	SITC1	Beverages and tobacco
	SITC2	Crude materials, inedible, except fuels
	SITC3	Mineral fuels, lubricants and related materials
	SITC4	Animal and vegetable oils, fats and waxes
<i>Industrial Products</i>	SITC5	Chemicals and related products.
	SITC6	Manufactured goods classified chiefly by material
	SITC7	Machinery and transport equipment
	SITC8	Miscellaneous manufactured articles
	SITC9	<i>Commodities and transactions not classified elsewhere in the SITC</i>

Source: UN COMTRADE.

Categories 0-4 products are generally considered to be of low technical content and low added value, which are typical resource-intensive products. However, Categories 5-9 have a high technical content, especially SITC 7- 8, which is considered a high value-added product.

The research is based on data of countries' exports volumes in the world market in 2014 and 2015. Due to lack of data, 10 countries including the Philippines, Afghanistan, Bhutan, Iran, Iraq, Syria, Uzbekistan, Turkmenistan, Tajikistan, and Lebanon were not included in the analysis; in addition, 16 countries with a total export volume of less than US\$16 billion were not included either. This is because we insist that small export volumes are difficult to make a significant impact on our research and perhaps, may lead to some calculation errors.

Finally, the total number of countries (regions) actually carrying out trade data analysis was 41. In order to facilitate comparison with the data of countries along the B&R, the amount of classified goods exported from 2014 to 2015 was analyzed according to the 'Guangdong Statistical Yearbook' and was converted into the SITC Rev.4 based on HS standards.

3.3 Empirical Model

There is a competitive-cooperative combo relationship in the economy among Guangdong, Hong Kong, Macao and countries (regions) along B&R. To study this kind of relationship, we use the Balassa index, which is a measure of the revealed comparative advantage (RCA) to reflect the trade status of a country in the international market (Chengwen, 2014). The revealed comparative advantage is an index used in international economics for calculating the proportion of the country's exports to the proportion of world exports. The formula is as follows:

$$RCA_{ij} = \frac{x_{ij}/X_i}{w_j/W} \quad (1)$$

X_{ij} represents the exports of product j from country i , X_i represents the total exports from country i , W_j represents the total exports of product j from B&R, and W represents the total export from B&R.

According to Balassa(1965),on the basis of this index, a country is defined as being specialized in exports of a certain product if $RCA > 2.5$; if $2.5 \geq RCA \geq 1.25$, it means that a country has a fairly strong comparative advantage; $1.25 \geq RCA \geq 0.8$ indicates that a country has a medium comparative advantage; while $RCA < 0.8$ means a weaker advantage. If we need to compare the comparative advantages of trade between the two countries, we can calculate the absolute value of the RCA between the two countries. The higher the absolute value, the greater the difference in comparative advantage between the two countries in a particular product is. In this case, the two countries can strengthen trade complementarity.

The calculation of RCA adopted in this paper is different from that of the traditional form due to the particularity of the research area in this paper; that is, the research object is only the countries along B&R. In the RCA index formula, X_{ij} represents i country's j product exports to the world, X_i represent i country exports to the world, W_j represents all the B&R countries' j products export, and W represents the total amount of all the B&R countries exports to the world, hence the calculation of RCA values reflect the comparative advantage of all B&R countries around the world. However, compared with most developed countries in the world, most B&R countries lack comparative advantage in most products; that is, the RCA index will be exceptionally low, which is beyond the scope of this paper. However, if the adjusted molecule X_{ij} is calculated as the total export of j products from country i to B&R countries, then we will ignore the fact that country i may export a lot of j products to B&R countries (especially China), but very little to other countries around the world. The reason is that comparative advantage products of all B&R countries may be mostly low value-added products, while actively importing those that are not comparatively advantageous products of B&R countries in China. Thus, China's trade policy can easily affect our analysis results; perhaps, the Chinese government encourages the development of trade between B&R countries and increases imports of certain types of products, not i country's j product of the relative comparative advantage with China.

On the other hand, B&R is a policy that has been vigorously promoted since 2015, and the data we obtain is relatively limited, if the export statistics of molecule X are restricted to B&R countries, which are more susceptible to accidental or non-market factors. Considering our further analysis and processing, we hope to obtain a comparative advantage of products along B&R countries compared with China in the case of a free competitive market. So we chose the better approach, which is that X is the sum of exports of country i to the world, and the denominator W is the sum of exports of all the B&R countries to the world. The advantage is that export value can reduce the influence of accidental or non-market factors affected by trade policy, especially China's policy. Such processing will not affect the rest of the analysis or conclusions of this article, as our goal is to obtain RCA of Guangdong-Hong Kong-Macao Great Bay Area compared with other B&R countries (or regions); that is, the relative value of RCA reflects the comparative advantage of Guangdong-Hong Kong-Macao Great Bay Area with B&R countries. Although this does not express a comparative advantage of B&R countries in the world, but it can tell us which products should be exported or imported to the B&R countries in Guangdong-Hong Kong-Macao Great Bay Area, which is one of the paper's conclusions.

Table 3 below shows the computation of the RCA index for Guangdong, mainland China, Hong Kong, Macao, Taiwan, China and other 56 countries along the B&R in 2015. It reflects the comparative advantages of various countries and regions. To further facilitate the analysis below, Guangdong, Hong Kong and Macao were computed as a whole.

Table 3.The RCA Index of Countries (Regions) In 2015

Product Classification	Country(Region)	Primary Commodity					Labor Intensive Commodity			Capital or Technology-Intensive Commodity				
		0	1	2	3	4	Synthesis	6	8	Synthesis	5	7	9	Synthesis
	Guangdong-HongKong-Macao	0.227	0.561	0.101	0.027	0.016	0.187	1.014	1.393	1.203	0.456	1.580	1.403	1.146
	Taiwan,China	0.226	0.284	0.490	0.244	0.032	0.255	1.057	0.899	0.978	1.475	1.481	0.369	1.108
	Brunei	0.016	0.052	0.067	5.499	0.001	1.127	0.061	0.059	0.060	0.276	0.077	0.046	0.133
	Burma	5.343	0.304	2.225	2.424	0.010	2.061	0.773	0.810	0.791	0.011	0.009	1.763	0.595
10 ASEAN Members	Indonesia	1.502	1.220	3.854	1.363	13.223	4.232	0.998	1.055	1.027	0.850	0.356	0.333	0.513
	Malaysia	0.683	1.007	1.237	0.974	6.779	2.136	0.702	0.842	0.772	0.989	1.131	0.181	0.767
	Singapore	0.336	1.943	0.340	0.744	0.063	0.685	0.298	0.683	0.491	1.729	1.384	2.140	1.751
	Vietnamese	2.416	0.599	1.143	0.182	0.196	0.907	0.764	2.384	1.574	0.322	1.012	0.135	0.489
	Thailand	2.463	1.205	1.937	0.233	0.157	1.199	0.918	0.730	0.824	1.235	1.212	0.629	1.025
	Bangladesh	0.459	0.398	0.420	0.033	0.061	0.274	0.483	6.801	3.642	0.055	0.034	0.001	0.030
8 countries in South Asian	Sri Lanka	4.438	1.813	1.273	0.105	1.308	1.787	0.922	3.863	2.392	0.206	0.173	0.000	0.126
	Pakistan	3.738	0.103	1.388	0.071	0.316	1.123	3.132	2.153	2.643	0.508	0.041	0.008	0.185
	India	1.939	0.744	1.593	0.702	0.387	1.073	1.896	1.163	1.530	1.737	0.442	1.010	1.063
	Armenia	1.074	0.457	0.103	5.158	1.029	1.564	0.115	0.018	0.067	0.213	0.012	0.660	0.295
7 CIS countries	Belarus	2.854	0.993	1.098	1.723	0.428	1.419	0.944	0.440	0.692	2.282	0.335	1.361	1.326
	Russian Federation	0.721	0.576	1.608	3.716	0.552	1.435	0.922	0.130	0.526	0.738	0.146	1.254	0.712
	Ukraine	4.706	2.385	6.631	0.076	9.469	4.653	2.070	0.321	1.195	0.633	0.325	0.157	0.372
	Bahrain	0.341	1.564	1.819	2.694	0.006	1.285	1.354	0.761	1.058	0.638	0.346	0.549	0.511
	Egypt	3.629	0.824	1.999	1.057	0.615	1.625	1.474	0.799	1.137	1.856	0.246	1.345	1.149
	Greece	2.923	4.405	1.814	1.762	3.093	2.800	1.166	0.532	0.849	1.337	0.273	0.825	0.812
	Israel	0.514	0.128	0.585	0.047	0.049	0.264	2.404	0.655	1.529	3.047	0.778	0.363	1.396
18 countries In Western Asia	Jordan	3.531	2.462	3.736	0.008	0.107	1.969	0.644	1.858	1.251	3.686	0.257	0.260	1.401
	Kuwait	0.165	0.138	0.120	5.269	0.014	1.141	0.047	0.072	0.060	0.641	0.073	0.139	0.284
	Oman	0.699	0.919	0.804	3.666	0.705	1.359	0.506	0.050	0.278	1.069	0.061	4.628	1.919
	State of Qatar	0.040	0.004	0.323	4.895	0.003	1.053	0.068	0.028	0.048	0.156	0.070	3.924	1.383
	Saudi Arabia	0.315	0.188	0.244	4.488	0.131	1.073	0.192	0.042	0.117	1.880	0.097	0.061	0.679
	Turkey	1.940	1.458	1.173	0.177	0.643	1.078	1.801	1.451	1.626	0.732	0.738	2.310	1.260
	The United Arab Emirates	3.629	0.824	1.999	1.057	0.615	1.625	1.474	0.799	1.137	1.856	0.246	1.345	1.149
	Bulgaria	2.034	3.123	2.944	0.628	1.139	1.974	1.597	1.057	1.327	1.235	0.552	1.383	1.057
	Croatia	2.055	2.600	3.530	0.645	0.263	1.819	1.146	1.254	1.200	1.500	0.654	0.411	0.855
	Czech Republic	0.714	1.468	1.006	0.174	0.356	0.744	1.154	0.949	1.051	0.763	1.507	0.091	0.787
16 countries in Central and Eastern Europe	Estonia	1.644	2.104	3.251	0.648	0.362	1.602	0.999	1.177	1.088	0.663	0.854	2.191	1.236
	Hungary	1.286	0.616	0.747	0.136	0.578	0.672	0.753	0.663	0.708	1.410	1.526	0.783	1.240
	Latvia	2.438	6.848	6.103	0.366	0.241	3.199	1.333	0.767	1.050	0.997	0.634	1.454	1.029
	Republic of Lithuania	2.812	4.469	2.182	0.964	0.438	2.173	0.778	1.224	1.001	1.871	0.491	0.743	1.035
	Poland	2.085	2.816	0.986	0.196	0.301	1.276	1.369	1.170	1.269	1.127	1.056	0.061	0.748
	Romania	1.304	3.230	1.810	0.264	0.381	1.398	1.181	1.150	1.166	0.588	1.182	1.155	0.975
	Serbia	3.038	5.618	1.522	0.168	1.296	2.328	1.564	1.023	1.294	1.075	0.788	0.535	0.799
	Slovakia	0.657	0.264	0.820	0.217	0.210	0.434	1.215	0.760	0.987	0.595	1.608	0.095	0.766
5 countries in Central Asia	Slovenija	0.722	0.819	1.679	0.314	0.099	0.727	1.531	0.819	1.175	2.203	1.013	0.145	1.120
	Kazakhstan	0.718	0.576	2.341	4.005	0.111	1.550	1.031	0.042	0.536	0.828	0.036	0.168	0.344

Source: UN COMTRADE

For a more intuitive analysis of the trade advantages of the region of Guangdong, Hong Kong and Macao compared with countries along the B&R, we propose to show the relative comparisons of the region of Guangdong, Hong Kong and Macao by obtaining the difference between the RCA index of the region of Guangdong, Hong Kong and Macao and the RCA index of i country (region) along the B&R Advantage index ($RRCA_i$). The formula is as follows:

$$RRCA_i = RCA_{GHM} - RCA_i \quad (2)$$

RCA_{GHM} represents the RCA index of Guangdong, Hong Kong and Macao, and RCA_i represents the RCA index of country i ; both data come from Table 3. If $RRCA_i < 0$, it indicates that Guangdong, Hong Kong and Macao lack a comparative advantage in trade with country i , while when $RRCA_i > 0$, it means that Guangdong, Hong Kong and Macao have a comparative advantage.

According to SITC, products in Categories 0-4 with low technological content and additional value are typical resource-intensive products; products in Categories 5-9, especially Categories 7-8, with high technological content are considered as high value-added products. In order to visually distinguish the low value-added products from the high value-added products, we classify the different product categories into different numerical values, denoted as X_i ; that is, SITC0, SITC1, SITC2, SITC3 and SITC4 can be denoted as -4, -3, -2 and -1; SITC5, SITC6, SITC7, SITC8, SITC9 can be denoted as 1, 2, 3, 4 and 5. If $X_i > 0$, it represents a high value-added product, while $X_i < 0$ means a low value-added product.

Using the $RRCA_i$ of the comparative advantage index of 65 countries along the B&R as the ordinate, and assigning X_i as the abscissa, we obtain a scatter diagram (Figure 2).

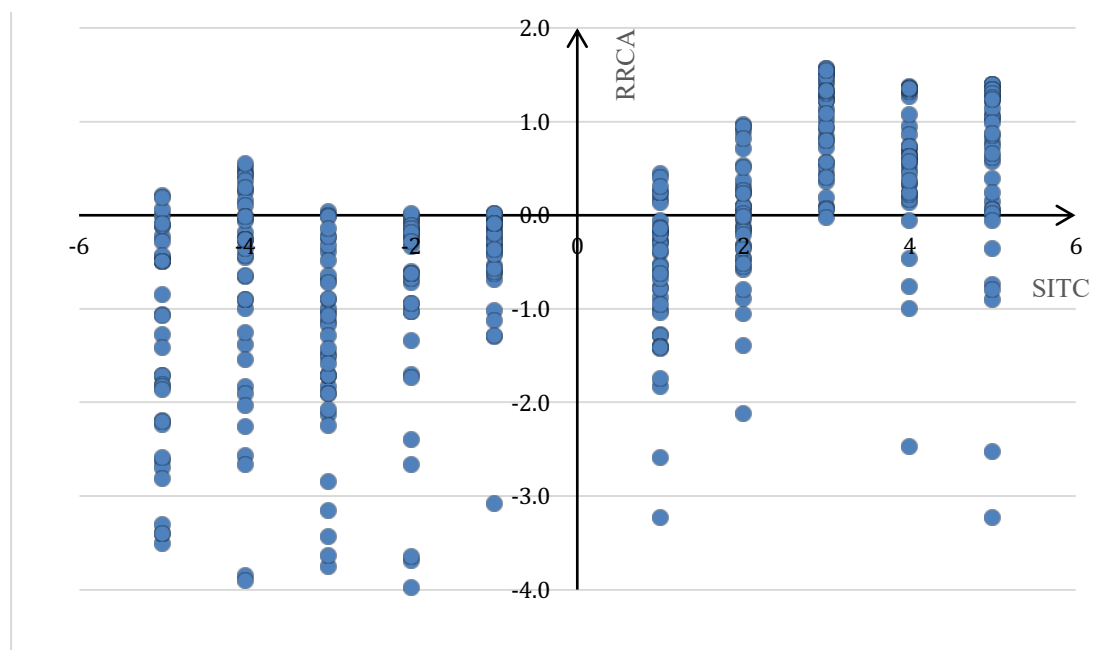


Figure 2. Scatter Diagram of RRCA Index.

Source: UN COMTRADE database

As mentioned above, it can be considered that the points in the first quadrant of Figure 2 represent that Guangdong, Hong Kong and Macao have a comparative advantage over high value-added products in countries along the B&R, and the third quadrant represents that Guangdong, Hong Kong and Macao lack comparative advantages in low value-added products.

As can be seen from Figure 2 above, almost all points of the low value-added products (left side of the figure) fall in the third quadrant, meaning that Guangdong, Hong Kong and Macao are in a low level in low value-added products compared to countries along the B&R. On the contrary, bifurcations are found in high value-added products (on the right side of the figure); Guangdong, Hong Kong and Macao have a comparative advantage in labor-intensive products in SITC6 and SITC8, SITC5 and SITC9 compared to countries along the B&R; Hong Kong and Macao have a strong revealed comparative advantage over the capital and technology-intensive manufactured products in SITC7.

It is worth noting that in Guangdong-Hong Kong-Macao Greater Bay, developed coastal cities such as Shenzhen and Zhuhai enjoy obvious comparative advantages with their strong background in trade and hi-tech. However, during the evaluation process, it was difficult for us to obtain their regional import and export data, which made us to underestimate the comparative advantage of the Greater Bay in evaluated value. Nevertheless, the result is remarkable that the Greater Bay theoretically has a strong comparative advantage to carry out the export of high-value-added products between countries and regions along the B&R.

According to the theories of the international division of labor, the regions of Guangdong, Hong Kong and Macao are no longer suitable for the export of low value-added products. At the same time, more attention should be paid to the production and export of high value-added products. Specific performance should be maintained on SITC5, SITC6, SITC8 and SITC9 products, or the current export volume should be moderately expanded, and the export of capital and technology-intensive manufactured products in SITC7 should be vigorously promoted so as to give full play to the advantages of the B&R Initiative.

3.4 Findings

Based on the previous calculation of the comparative advantage index (Table 3) and the scatter diagram (Figure 2), we find that there is a huge difference in the comparative advantages of each country and region.

Guangdong, Hong Kong and Macao have a dominant position in the capital and technology-intensive manufacturing industries. Most countries along B&R have unique advantages in primary products and labor-intensive manufacturing. We will further analyze some representative countries (regions) as follows:

(a) To strengthen the cooperation of oil, gas and mineral resources in the Middle East and Central Asia:

As can be seen in Table 3, the RCA index of Saudi Arabia in the Middle East for Category 3 commodities (including fossil fuels such as coal, natural gas and petroleum) is 4.48. Saudi Arabia has the world's largest oil reserves, production and export volume. With the improvement of China's economic development, the demand for energy has increased year after year. China's oil imports have surpassed those of the United States and have become the world's largest oil-importing country with a foreign dependence of over 60%. Therefore, it is necessary for China to strengthen cooperation with energy-based countries. In addition, Central Asia is also a vital area for China's energy cooperation. Central Asia is rich in mineral resources such as oil, natural gas, coal and uranium. Kazakhstan has an extremely strong revealed comparative advantage in Category 3 commodities with an RCA of 4.01. Kazakhstan holds the world's reserves of mineral resources and the highest volume of extraction, of which chromium ore reserves rank second place in the world, second only to South Africa. The demand for chromium in China ranks first in the world, but the annual extraction volume is only about 100,000 tons, which needs to be imported in large quantities from abroad. Moreover, Kazakhstan has the highest tungsten, uranium and copper reserves in the world. By establishing regional value chains with these countries, China should take full advantage of those countries with abundant resources and innovate the mineral resource exploitation cooperation model so that the economic development of those countries with rich energy resources along the B&R will be stimulated by means of developing and utilizing resources.

(b) To strengthen cooperation with Ukraine on animal and vegetable fats and oils:

As the world's largest exporter of sunflower oil, its sunflower seed oil output accounts for 25% of global output. China's main source of sunflower oil is Ukraine, and China has become the second largest importer of sunflower seed oil.

(c) To strengthen cooperation with India in agriculture and animal husbandry:

India, with 10% of the world's arable land, is one of the largest food producers in the world. India has a comparative advantage in Category 6, mainly due to its industrial base in the cotton textile industry. India is the second largest exporter of cotton in the world and ranks third in cotton acreage. Its textile and clothing industry output accounts for 14% of India's total industrial output value, accounting for 17% of India's total exports; therefore, it is necessary to strengthen cooperation with India in agriculture and animal husbandry.

(d) China has wide scope for cooperation with Malaysia and other countries in the electronics and information industries:

For instance, the total bilateral trade between China and Malaysia amounted to US\$97.312 billion in 2015. In China's import and export to Malaysia, the share of electronic products takes the first place (Anonymity, 2016). The cooperation in the bilateral trade of the information technology industry between China and Malaysia will have better prospects sooner or later.

(e) Taking advantage of China's high-speed railway and communication technology to strengthen cooperation with countries along the B&R in infrastructure construction:

The cooperation in the construction of China-Pakistan Railways, Haramain Express Train, Trans-Asian Railway and others have boosted the economy of countries along the B&R.

4. Analysis of Investment and Financing Situation of Guangdong, Hong Kong and Macao in the B&R

To give full play to Hong Kong and Macao, in addition to strengthening the economic and trade cooperation of countries along the B&R, it is necessary to strengthen investment and financing cooperation. The concrete analysis is as follows:

4.1 Guangdong's Investment in the B&R

In 2014, Guangdong's actual investment amount in the B&R was US\$1,720 million. By 2016, it was up to over US\$4 billion, with an increase of 65.3% over the same period last year. Corporations such as Huawei, Midea, GREE, ZTE, TCL, Rising, Guangdong Power Group Co., Ltd., have already gained a firm foothold abroad (Haifei, 2016).

According to the Guangdong Provincial Office, SAY, Guangdong enterprises actively conduct their "go global" strategies. As of May 2017, there were 1,457 Guangdong enterprises reaching out to the world, 648 more than in 2014, of which 45% chose to invest in countries along the B&R. In recent years, there has been a growing tendency of investments by private enterprises in Guangdong along the B&R, which have become the main force of investment. As of the end of March 2017, a total of 309 Guangdong enterprises have invested in countries along the B&R, of which 111 were overseas-funded private enterprises, accounting for 35.9% of the total number of investors, with a total investment of US\$880 million, accounting for 49.1% (Hanqing, 2017).

The reports from the Department of Commerce of Guangdong Province indicate that Guangdong Province will continue to promote the construction of overseas economic and trade cooperation zones and will build a cluster of "going global" platforms. It will focus on the major traffic node cities and ports of Indonesia, Thailand, Singapore, Pakistan, UAE, Saudi Arabia, the United States, Canada, Brazil, Chile, Australia, Germany, Kenya and other countries and regions to jointly construct industrial parks in processing and manufacturing, resource development, technical research and development, as well as logistics parks (Hanqing, 2017).

4.2 Guangdong's Financing in the B&R

As a financing-developed province, Guangdong has a leading position in credit, cross-border RMB business, etc., and its economic strength will boost the construction of the B&R. According to the data from Guangdong Banking Bureau, as at the end of March 2017, there were 172 projects that supported the construction of the B&R by the banking industry of Guangdong (excluding Shenzhen), with a total credit amount of 286.26 billion RMB. For

instance, Guangzhou Branch of the Bank of China established a key project library of the B&R and focused on supporting 49 Guangdong priority projects, with an aggregate amount of 8.25 billion RMB (Haifei, 2017).

4.3 Guangdong is promoting the internationalization of RMB

With the Guangdong enterprises actively “going global”, the demand for cross-border RMB settlement businesses in Guangdong along the B&R is also on the rise. According to the Guangzhou Branch of the People's Bank of China, the cross-border RMB settlement of Guangdong and the countries along the B&R reached 373.68 billion RMB in 2016, with an increase of 24.2% over the same period from last year. The settlement business of direct investment was 23.3 billion RMB, with an increase of 191.8% over the same period of the previous year. The Chinese RMB gradually becomes one of the major currencies and its status continues to improve. At the end of March 2017, the cross-border RMB settlement was US\$880 million, accounting for 49.1% of the total. From the changes in the settlement currencies, the RMB settlement has been increasing year after year. In the first quarter of 2017, the settlement amount accounted for 84.0%, with an increase of nearly 10% compared with 74.3% in the same period of the previous year.

Guangdong financial institutions also make innovations in cross-border RMB business and expand the use of RMB in countries along the B&R. In February 2017, United Company RUSAL Plc registered and issued 1 billion RMB in Panda Bonds on the Shanghai Stock Exchange, with the intension of remitting funds raised overseas. This is the cross-border RMB settlement business for Panda Bonds raised by province-owned enterprises along the B&R, which will help improve the service capability of cross-border investment and financing of commercial banks across the country (Haifei, 2017).

In April 2016, after the announcement of the cross-border RMB business policy in the Guangdong Free Trade Zone (Guangdong FTZ), the banking institutions in Nansha and Hengqin were allowed to issue RMB loans to countries along the B&R and other overseas countries and regions, and the countries in the border areas received more extensive financial support.

4.4 The investment and financing roles of Hong Kong and Macao in B&R

First of all, Hong Kong is an important source of foreign investment in the Mainland and an important destination for overseas investment from mainland China. At the end of 2016, 44.7% of the mainland China's approved foreign investment projects were related to Hong Kong. The actual use of foreign capital from Hong Kong amounted to US\$913.7 billion, accounting for 51.8% of the total foreign investment of Mainland. Hong Kong is also the prime location for outbound direct investment. As of 2015, mainland China's direct investment in Hong Kong amounted to US\$656.9 billion, accounting for 59.8% of the total overseas direct investment (Yuanlong, 2017).

Secondly, Hong Kong is an important window for the internationalization of Mainland China's capital markets and an important fund-raising platform, as well as an asset management center in the world. In 2016, Hong Kong was listed for a total amount of 195 billion Hong Kong dollars and ranked No.1 in the world. Hong Kong is the gateway to the world. Since the "Shanghai-Hong Kong Stock Connect" launched in November 2014, total transactions from the Mainland to Hong Kong (southbound transactions) has been increasing, and the proportion of the transactions in Hong Kong mainboard has increased from 1% -2% to 12%. After the second anniversary of the successful operation of "Shanghai-Hong Kong Stock Connect," "Shenzhen-Hong Kong Stock Connect" was officially launched. On May 16, 2017, the People's Bank of China and the Hong Kong Monetary Authority decided to introduce a bond trading link between Hong Kong and the mainland (dubbed “Bond Connect”). "Shanghai-Hong Kong Stock Connect", “Shenzhen-Hong Kong Stock Connect” and "Bond Connect" accelerate the process of internationalization of mainland China capital markets, and attract foreign funds into China's stock market and bond market in order to promote the internationalization of capital markets of mainland China (A'meng, 2017).

Thirdly, Hong Kong is the world's leading offshore RMB center. Hong Kong CNH-Hibor and the spot rate of offshore RMB are the most influential offshore RMB market rates and reference rates in the world. The RMB settlement of cross-border trade between the Mainland and Hong Kong is ranked first in the world and the size of

the RMB cash pooling is also the largest in the world. 70% of the RMB business of the Bank of China (Hong Kong) Limited are conducted in Hong Kong, and the daily RMB transactions amount to 15,000 deals with an amount of 800 billion RMB. Hong Kong plays an important role in promoting the internationalization of the RMB (FX168 Finance Group, 2017).

Finally, Hong Kong remains a bridge for mainland China to invest overseas. As a first-class international trade and business service center, Hong Kong, with the advantages of the predominant business environment, legal perfection, fair competition and high degree of internationalization that has attracted enterprise and investors from all over the world, is an excellent area where multinational corporations have established headquarters or offices. According to statistics, nearly 8,000 international and Mainland companies established regional headquarters and local offices in Hong Kong. Hong Kong plays an essential role of communication in helping mainland enterprises invest overseas and attracting international enterprises to invest in the Mainland. It is an important bridge for Mainland enterprises to exploit foreign markets and go global.

5. To play the role of Guangdong-Hong Kong-Macao Greater Bay Area in B&R

The total area of Guangdong, Hong Kong and Macao is about 56,000 square kilometers, accounting for less than 1% of the total land area of China; while the population of this area is 66.34 million, accounting for less than 5% of the total. Guangdong-Hong Kong-Macao Greater Bay Area is dominated by advanced manufacturing and modern service industries. The added-value of the service industries in Hong Kong and Macao accounts for about 90% of GDP; nine cities in the Mainland, with a strong manufacturing foundation, have formed a dual-drive industrial system of advanced manufacturing and modern service industry (Xuejun, 2017). Guangdong-Hong Kong-Macao Greater Bay Area, with two districts and nine cities, is not only an urban agglomeration with the largest population in the world, but also has a large total economy. In 2016, it generated 9.34 trillion Yuan of GDP, accounting for 12.6% of the total. Its GDP is twice that of the San Francisco Bay Area, which is close to the New York Bay Area. Therefore, Guangdong-Hong Kong-Macao Greater Bay Area has world-class resources that are worth integrating their resources and exerting their role in the B&R Initiatives.

5.1 Construction of a Financial Center

Shenzhen is an important capital market in China. With the reform and opening up, Shenzhen stock market has been developing continuously, and its trading volume is as high as about 200 billion RMB per day. As the world's largest IPO market, Hong Kong is the largest offshore RMB fund center, the hub of financing, fund management and distribution in the region. If we add up the financial and economic scale of Hong Kong and Shenzhen, under the leadership of Hong Kong and Shenzhen, with the support of Guangzhou and Foshan, it is possible to form a global financial center with a vast hinterland in Asia. Therefore, Guangdong, Hong Kong and Macao should strengthen their financial cooperation; optimize the allocation of financial resources to realize the comprehensive utilization of capital, financial products and financial infrastructure, and to create a complementary and interconnected financial market community. More concrete suggestions are as follows: Firstly, to build a global financing system based in Hong Kong and Shenzhen so as to strengthen business ties with all countries and regions along the route, give full play to Hong Kong's financial markets with diversified advantages, and provide different kinds of funds for the construction of the B&R Initiatives. Secondly, to make use of Guangdong's foreign trade, foreign investment, combined with Hong Kong's RMB offshore market advantages of expanding the RMB trade settlement, increasing the investment project, increasing the RMB loan, financing, and denominated in RMB international stocks, bonds, etc., gradually forming a currency area of unified pricing and settlement in RMB, thus promoting the process of RMB internationalization.

5.2 Construction of an Innovation Center

In terms of resources, dominated by the tertiary industry, enterprises in Hong Kong and Macao have a strong financial and high-end services industry. Huawei, ZTE, BYD, Gree, and Midea and other large enterprises in Guangdong, all have strong technological innovation capabilities and high-end manufacturing base. There are famous colleges and universities in Guangdong, Hong Kong and Macao, such as the University of Hong Kong,

the Hong Kong Polytechnic University, Sun Yat-sen University, the University of Macao and Jinan University, all of which have concentrated large numbers of talents in all walks of life. Therefore, Guangdong, Hong Kong and Macao should deepen innovative cooperation, carrying out scientific and technological innovations in the fields of information technology, smart society, new energy vehicles, smart home appliances, biopharmaceuticals and marine engineering. First of all, it is necessary to establish an innovation system of Guangdong, Hong Kong and Macao to make an innovation alliance of Government-Industry-University. The government should set up a scientific and technological innovation cooperation committee, formulate a long-term development program, promote sharing of scientific and technological personnel resources, form research teams and encourage enterprises to increase investment on R&D. In this case, the cohesion of innovation can be cultivated to lead the international trend of innovation. Secondly, the geographical advantages of Guangdong-Hong Kong-Macao Greater Bay Area should be exploited to the fullest to deepen international cooperation in innovation. The superior conditions of Hong Kong and Macao help to attract international high-end scientific and technological talents. By recruiting world-class talents to carry out teaching and research, talents will be introduced and retained. It is necessary to provide a good research environment and work together with other innovation partners through cooperation in academic researches and exchanges, joint studies and co-development. Above all, the intimate relationship with other developed countries in scientific and technological achievements is conducive to the formation of an open international innovation system and acceleration of the development of innovation.

5.3 Constructing Shipping Centers

From a geographical point of view, the Guangdong-Hong Kong-Macao Greater Bay Area is a must-have for the routes to Southeast Asia, South Asia, the Middle East and Europe, and other countries along the B&R. The East is the western strait economic zone; the west is the Beibu Gulf Economic Zone and Southeast Asia; the north is the Hunan, Jiangxi and urban agglomerations in Middle-China. The Guangdong-Hong Kong-Macao Greater Bay Area is a significant transportation hub both at sea and onland, which has three global ports, including the world's third-ranked Shenzhen Port, the fifth Hong Kong Port, and the seventh Guangzhou Port. Besides, the well-developed road network is still being improved. There are nine highways in the Greater Bay Area; the Pearl River Delta light rails are under construction and the Hong Kong-Zhuhai-Macao Bridge will be fully connected to the east and west of the Pearl River Estuary.

A good geographical location and an excellent transport infrastructure are the basic preconditions, as well as the future targets for the construction of B&R port logistics center in the Greater Bay Area. It must also be a shipping center, an airport and a railway freight forwarding center. Moreover, it must be a multi-freight forwarding center, as well as a logistics and supply chain management center. The Greater Bay Area should promote terrestrial, maritime, air and cyberspace connectivity to build a global hub.

5.4 Constructing a High-End Industrial Base

Guangdong, Hong Kong and Macao have a good industrial foundation. Pearl River Delta, in particular, attracts a large number of outstanding enterprises, such as BYD, Huawei, ZTE Corporation, which have come to the forefront of China and the world. Modern industry, strategic emerging industries, and the future industry are developing rapidly in Shenzhen (Table 4). The shipbuilding industry in Guangzhou and the aircraft industry in Zhuhai are developing vigorously. Therefore, they should be fully utilized to develop the emerging industry and high-end manufacturing such as the new energy automobile, smart IT, bio-pharmaceutical, intelligent household electrical appliances, oceanographic engineering and the aerospace industry.

Table 4. Shenzhen's Development of Manufacturing Industries in 2016 (Billion RMB)

<i>Category</i>	<i>Industry</i>	<i>Value added (billion RMB)</i>	<i>Increasing rate (%)</i>
Modern industry	Modern service industry	8278.31	11.6
	Advanced manufacturing industry	5428.39	8.5
	High-tech industry	4762.87	9.8
	New generation of information technology	4052.33	9.6
Strategic emerging industry	Internet industry	767.50	15.3
	New material industry	373.40	19.6
	Biotechnology industry	222.36	13.4
	New energy industry	592.25	29.3
	Energy conservation and environmental protection industry	401.73	8.2
	Cultural creative industry	1949.70	11.0
	Marine industry	382.83	-9.0
Future Industry	Aviation industry	84.68	5.8
	Robot, wearable devices, intelligent devices industry	486.42	20.2
	Health industry	72.35	17.9

Source: Comprehensive Sorting (Yuge, 2017)

During the development of recent years, the urban agglomerations of Guangdong-Hong Kong-Macao Greater Bay Area have formed a number of industrial agglomerations and key enterprises. To form a high-end industrial base, a cluster-based development route must be followed. For instance, by establishing a public service platform and improving production facilities, it is possible to attract Fortune Global 500, state-owned enterprises, top ten companies in different industries and other related industries. In this way, a batch of significant projects such as cloud computing, big data, LED, new energy, shipbuilding, aviation manufacturing and biomedicine will settle in Guangdong-Hong Kong-Macao Greater Bay Area, turning a new leaf to the support of industries and cluster development. The government should formulate corresponding industrial development plans, carry out industrial guidance purposely and form high-end industrial clusters with distinctive features. Enterprises should introduce talents, technologies and accelerate innovation. Hong Kong and Macao can strengthen their financial support to related enterprises to exert their advantages in financing and opening up the market.

5.5 Building a Global Value Chain

After the reform and opening up, Guangdong enterprises are capable of exploring foreign markets and participating in global competition. In this case, the enterprise can take advantage of the B&R strategic platform to make use of the bridges in Hong Kong and Macao to invest overseas. It is a way of exploring the international market and building a global value chain in order to make use of the comparative advantage of the global division of labor. This also helps to reduce the cost, improve production efficiency and product competitiveness. Guangdong enterprises can participate in the infrastructure construction, create industrial parks overseas, produce famous and special products in Guangdong, and expand the market and trade volume. They can also set up resource development enterprises with the local enterprises to develop local resources and increase the supply of raw materials. For the developed countries and regions, in addition to cooperation in production and development, research and running of schools, learning of foreign knowledge and advanced technologies can also be carried out to enhance innovation capability.

6. Conclusion

The main contribution of the paper is to deepen the theory of regional economic cooperation. With the theory of economic growth pole, this paper discusses the construction of the Guangdong-Hong Kong-Macao Greater Bay Area, and plays its role as a financial center, innovation center, shipping center and high-end industrial base, as well as having function of the bridgehead of Chinese enterprises heading global. This paper presents concrete measures of strengthening regional economic cooperation. The main shortcoming of this paper is that, since the import and export data of individual provinces are difficult to obtain and the statistics are not comprehensive, the quantitative analysis is not accurate, which is different from the actual economic and trade situation. Furthermore,

the quantitative analysis only performs static analysis and lacks dynamic analysis, which is what should be improved in the future.

The Guangdong-Hong Kong-Macao Greater Bay Area is an important node of B&R. How to strengthen the integration between Guangdong, Hong Kong and Macao, integrate their resources, unleash their unique advantages, strengthen economic cooperation with countries and regions along the B&R, and drive the economic prosperity of all countries is the focus of future research. More scholars are expected to participate in the research and propose newer and better views.

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References

- A'meng, T. (2017). 20 anniversary of Hong Kong's Return to China, Hong Kong's Economic Achievements under One Country, Two Systems. Retrieved from http://caijing.chinadaily.com.cn/2017-06/15/content_29752935.htm
- Anonymity(2016).January-December 2015 Analysis of China-Malaysia Import and Export Trend on Key Products from January to December in 2015.Retrieved from <http://customs.caexpo.com/data/country/2016/03/29/3659600.html>
- Balassa, B. (1965). Trade liberalization and revealed comparative advantage. *Manchester School*, 33(2), 99-12
- Big Data For the Belt and Road Initiative, Dalian Big Data for Northeast Asia, Big Data Technology for the Belt and Road Initiative Co. ,Ltd.,SINOIMEX(2017).The Report of the "Belt and Road" Trade Cooperation in 2017. Retrieved from <https://www.yidaiyilu.gov.cn/xwzx/gnxw/9970.htm>
- Chengwen, K. (2014). Reviews on the Revelation of Comparative Advantage Index. *Business Research*, 5, 32-39.
- FX168 Finance Group(2017).Appreciation of the RMB, The People's Bank of China: Measures to promote Hong Kong as the largest offshore center. Retrieved from <http://finance.sina.com.cn/money/forex/hbfx/2017-06-29/doc-ifyhrttz1646688.shtml>
- Gottmann, J.(1957).Megalopolis or the urbanization of the northeastern seaboard, *Economic Geography*, 33(3), 189-200.
- Green book(2016). What kind of ecological logic does blue and green converge?-- report on ecological civilization construction in key bay area of China, *China's ecological civilization*, (2), 23-33.
- Haifei, W. (2016). Guangdong ranked first in the country in terms of participating the Belt and Road" in 2016. Retrieved from http://news.ycwb.com/2016-12/12/content_23756710.htm
- Haifei, W. (2017). Guangdong's Investment in countries along the Belt and Road increased by 60% last year. Retrieved from http://news.ycwb.com/2017-05/18/content_24855579.htm
- Hanqing, M.(2017).Guangdong's Goods Import and Export to Countries along the "Belt and Road" from January to April. Retrieved from http://news.ycwb.com/2017-05/12/content_24820305.htm
- Jingtong, Q., Li, Z., Junxia, H.(2016). Xi Jinping underlines to share the prosperity benefits with countries along the Belt and Road.Retrieved from <http://news.cctv.com/2016/09/07/ARTIfcRTutCgv6QbJ9S4nI8V160907.shtml>.
- Keqiang, L. (2017). Report on the work of the government delivered by Li Keqiang on the Fifth Session of the 12th National People's Congress. Retrieved from <http://www.chinanews.com/gn/2017/03-05/8165806.shtml>
- Ling, J.(2015). The Belt and Road: China's Marshall Plan?*International Studies*, 1, 88-99.
- Min, L. (2017). National Bureau of Statistics of China: Contribution of China to World Economic Growth from 2013 to 2016: Sum of the United States, Europe, Japan. Retrieved from <http://news.cnstock.com/news,yw-201706-4091581.htm>
- Nadege, R.(2015). China's new silk road.*The national bureau of Asian research*, Retrieved from <http://www.nbr.org/research/activity.aspx?id=531?2015-02-15>.
- Ni, Z.(2017). Guangdong-Hong Kong-Macao greater bay area: the grand chessboard under the framework of "one country, two systems", *China development watch*, (22), 22-24.
- Perroux, F., (1955). *Note sur la notion de pôle de croissance, dans Économie appliquée*, nr. 8, 307-320 .
- Shenglei, Z.(2018). Development path and construction strategy of Guangdong-Hong Kong-Macao greater bay area: a comparative analysis based on the three world bay areas, *China development*, (6), 53-59.

- Sisi,L. (2014). The Belt and Road: A New Approach of the Theoretical Study of Cross-border Sub-Regional Cooperation. *South Asia Research*, 2, 1-11.
- Shiyan, L., &Lin, G. (2017).Guangdong's import and export to the "Belt and a Road" has developed well from January to April. Retrieved from <http://gd.people.com.cn/n2/2017/0515/c123932-30184547.html>
- Xuejun,L. (2017). Cooperation and Integration: The Key to construct Guangdong-Hong Kong-Macao Greater Bay. Retrieved from http://econ.cssn.cn/jjx/jjx_gzf/201707/t20170703_3567917.shtml
- Xiaoli,L.,Minghao, S.(2017). Discussion on development strategy and construction path of Guangdong-Hong kong-Macao greater bay area under the background of the new round of opening-up, *International Economics and Trade Research*, 33(9), 4-13.
- Yiwei, W. (2015). To construct the "Belt and Road", integrating the Chinese dream and the world's dream. Retrieved from <http://news.cri.cn/20171011/20b0a242-bd05-5911-217b-76abe8ef85b3.html>
- Yuanlong,L. (2017). 20 anniversary of Hong Kong's Return to China: 20 Years of Hong Kong. Retrieved from <http://dy.163.com/v2/article/detail/CO6URG3C051498EH.html>
- Yuge, Z. (2017). Shenzhen-Hong Kong "4+4", Build an Engine with Guangdong-Hong Kong-Macao Greater Bay Area. Retrieved from <http://www.cdi.com.cn/detail.aspx?cid=5270>
- Yunling,Z. (2015). The Return of China's Peripheral Regional Views and the Construction of New Order. *World Economy and Politics*, 1, 5-25.
- Ziming, L. (2014). Public Opinions on the "New Marshall Plan". Retrieved from <http://yq.stcn.com/2014/1107/11834463.shtml>

Some Issues on Vietnam Economy

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Abstract

Vietnam's economy in innovation has experienced many great achievements. The distance calculated according to the ratio of economic scale, export promotion, attraction of foreign direct investment capital, job creation for young workers, accelerating urbanization. However, looking inside the economy, we can see that productivity, quality, efficiency and competitiveness are not high, because of using the old growth model, with inputs with increasing material consumption. In addition, large budget spending is caused by a bureaucratic bureaucracy, with little resources available for development investment. Taxes and fees are still unreasonable. The lack of capital mobilization of FDI has resulted in a widening gap between GDP and GNI. Human resources lack intensive training so productivity is not high. The risk of inflation is still lurking. The economy needs to continue going strong reforms

Keywords: Vietnam Economy, State Budget, FDI, Inflation

Introduction

Vietnam has a ritual culture that values form more than content, even covering content, this research tries to describe a part of Vietnam's economy through some indicators of total domestic products (GDP), GNI-gross national income, property income, about the current operational status of the enterprise through the annual enterprise survey of the General Department of Statistics, on inflation risks, on budget revenue and expenditure and some recommendations to overcome these limitations.

There are many articles about the Vietnamese economy, but most are reporting achievements, but there are also articles that are well-researched such as Pham Quang Ngoc et al (2007), Nguyen Quang Thai and Bui Trinh (2010) on analysis of the components contributing to economic growth, Nguyen and Bui (2011) on Vietnam Public Debt in the safe limitation, Hoa.P.L(2010), T. Bui et al (2012), T.Bui, Bui Quoc (2017), Bui KieuAnh et al (2019) This research is using available data of the General Statistics Office, the Ministry of Finance, and the State Bank.

GDP and net property income

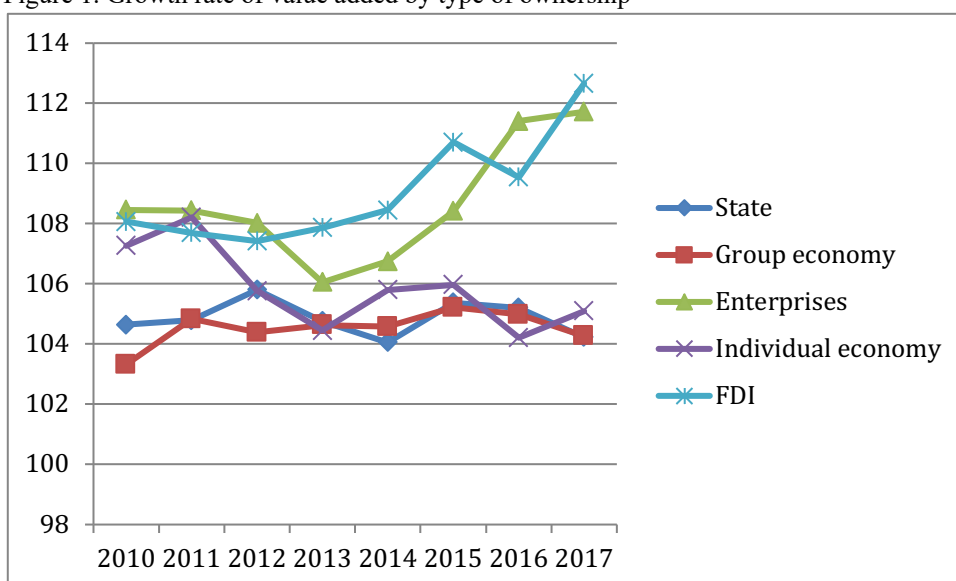
The average GDP growth of Vietnam in the period of 2010 - 2017 is about 6%, the growth rate is relatively high compared to other countries in the region. In terms of ownership structure in GDP, contribution to GDP is basically from the individual sector. In the period from 2010 to 2017, this rate decreased by 2.7%. The share of the state economy also decreased slightly from 29.34% in 2010 to 28.63% in 2017 (down about 0.7%). Meanwhile, the non-state sector has increased by less than 1%; The area of enterprises with foreign direct investment (FDI) increased by about 3%. Ownership structure shows that the Vietnamese economy is very fragmented, and there is almost no significant structural change. Small and medium-sized enterprises are still unable to grow, the share of value-added of this sector in GDP is very low (less than 10%) and almost unchanged during the 8 years (2010 - 2017). This shows that when the number of domestic enterprises increases or loses, it is only a change in quantity, while the value does not seem to change. The contribution of the foreign-invested sector increased from 15.2 in 2010 to 19.6 in 2017. The largest contribution to GDP is still the individual economic sector! However, the growths of the foreign-invested sector and the private sector (enterprises) have the most stable growth (table 1 and figure 1).

Table 1. Structure of GDP at current price by type of ownership (%)

	2010	2011	2012	2013	2014	2015	2016	Sobộ 2017
GDP	100,00	100,00	100,00	100,00	100,00	100,00	100,00	100,00
State	29,34	29,01	29,39	29,01	28,73	28,69	28,81	28,63
Non-State	42,96	43,87	44,62	43,52	43,33	43,22	42,56	41,74
Collection	3,99	3,98	4,00	4,03	4,04	4,01	3,92	3,76
Enterprises	6,90	7,34	7,97	7,78	7,79	7,88	8,21	8,64
Household	32,07	32,55	32,65	31,71	31,50	31,33	30,43	29,34
FDI	15,15	15,66	16,04	17,36	17,89	18,07	18,59	19,63
Tax on products less subsidies.	12,55	11,46	9,95	10,11	10,05	10,02	10,04	10,00

Source: General Statistics Office. Gso.gov.vn

Figure 1. Growth rate of value added by type of ownership



Source: Vietnam General Statistics Office. Gso.gov.vn

According to the principle of the System of National Account (SNA) permanent resident, the value-added of the foreign capital sector is accounted for GDP, then businesses in this region can keep the profit re-invested and can also transfer money to the "mother" country. Thus, although the foreign-invested sector contributes significantly to GDP growth, it also contributes significantly to flow cash go out to foreign faster than GDP growth, average GDP growth by the current price. In during the period of 2007 - 2017 is 22%, while the growth of the net, property payment is 32%, thereby making the ratio of Gross National Income (GNI) to GDP decreased from 97.2% in 2000 to 95.2% in 2017. This is the reason that some experts believe that the more growth of GDP, the more resources of the country will be reduced when growth is based on the foreign-invested sector. The real resource of the economy is saving, savings begin to form from the GDP plus property income minus property payment (net, property income) plus pure transfer except for final consumption; If net, property income is a negative number and this negative number is increasing leading to smaller and smaller savings. Savings are the basic source of investment, if savings are always smaller than the amount needed to invest, the demand for loans will be greater (table 2). Is that the reason why GDP is so high that debt must pay more and more? So, the rise of GDP is like a serious patient who adorns his face to hide his illness? Reasonable, is Vietnam's economy in this situation?

Table 2. GNI, GDP and net, property income

	GNI (Billion Vietnamese dong)	GDP (Billion Vietnamese dong)	Net, property income (Billion Vietnamese dong)	GNI/GDP (%)
2007	1,211,806	1,246,769	-34963	97.2
2008	1,567,964	1,616,047	-48083	97.02
2009	1,731,221	1,809,149	-77928	95.69
2010	2,075,578	2,157,828	-82250	96.19
2011	2,660,076	2,779,880	-119804	95.69
2012	3,115,227	3,245,419	-130192	95.99
2013	3,430,668	3,584,262	-153594	95.71
2014	3,750,823	3,937,856	-187033	95.25
2015	3,977,609	4,192,862	-215253	94.87
2016	4,314,321	4,502,733	-188412	95.82
2017	4,764,958	5,005,975	-241017	95.19
Average growth during 2007-2017 (%)	21.60	21.97	31.76	

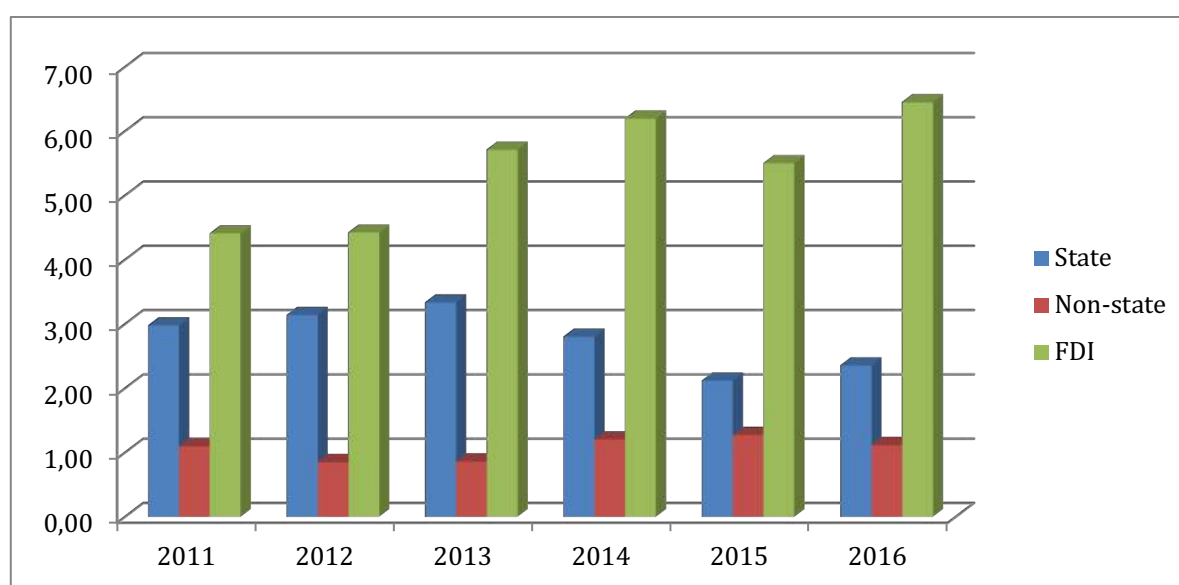
Source: Vietnam GSO. www.gso.gov.vn

Enterprisessituationin Vietnam

According to the enterprise survey data, the number of non-state enterprises by the end of 2016 accounted for about 97% of the total number of enterprises (including State-owned enterprises, non-state enterprises, and foreign-invested enterprises). The Government has also issued a number of policies to support small and medium enterprises such as: Information, consultancy, human resource development, the transformation from business households, a creative start-up, participation in an industry association, value chain ... These policies are what

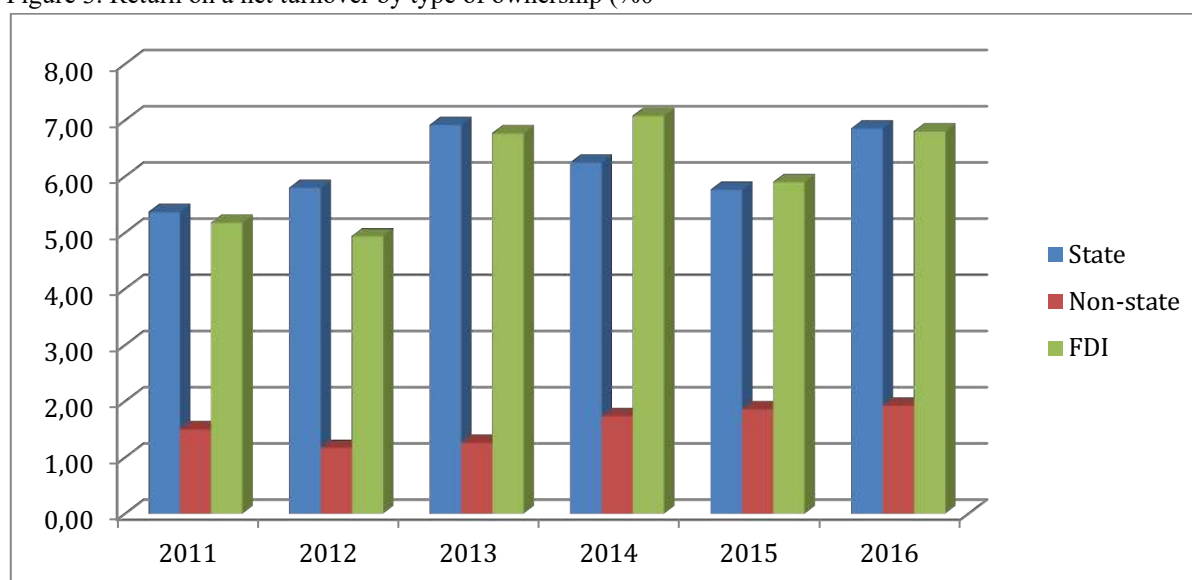
small and medium enterprises need but not enough, the most important policy that small and medium enterprises really need is policies on taxes, customs, access to capital, and land. A fair and transparent way to avoid small and medium enterprises legal risks. In many countries around the world, small and medium enterprises always play an important role and position in socio-economic development. In order for small and medium enterprises to develop, contributing positively to economic development. - National society, each country has its own development policies, in which financial mechanisms and policies are the most important factor. Comparison of small and medium-sized enterprises for state-owned enterprises and foreign-invested enterprises showed that the number of small and medium enterprises accounted for the highest proportion in the period of 2011 - 2016, State enterprises in 2016 only accounting for 0.6% and foreign-invested enterprises about 2.8%. But the small and medium-sized enterprises have very low-profit margins per capital, in 2016 this ratio of the non-state economic sector was only half of the state sector and one-sixth of the area with foreign capital investment (figure 2). The net profit-to-revenue ratio of the non-state sector is also the lowest, less than one-third of that of the State and FDI sectors (figure 3)

Figure 2. Profit margins per capital by type of ownership (%)



Source: Vietnam GSO. www.gso.gov.vn

Figure 3. Return on a net turnover by type of ownership (%)

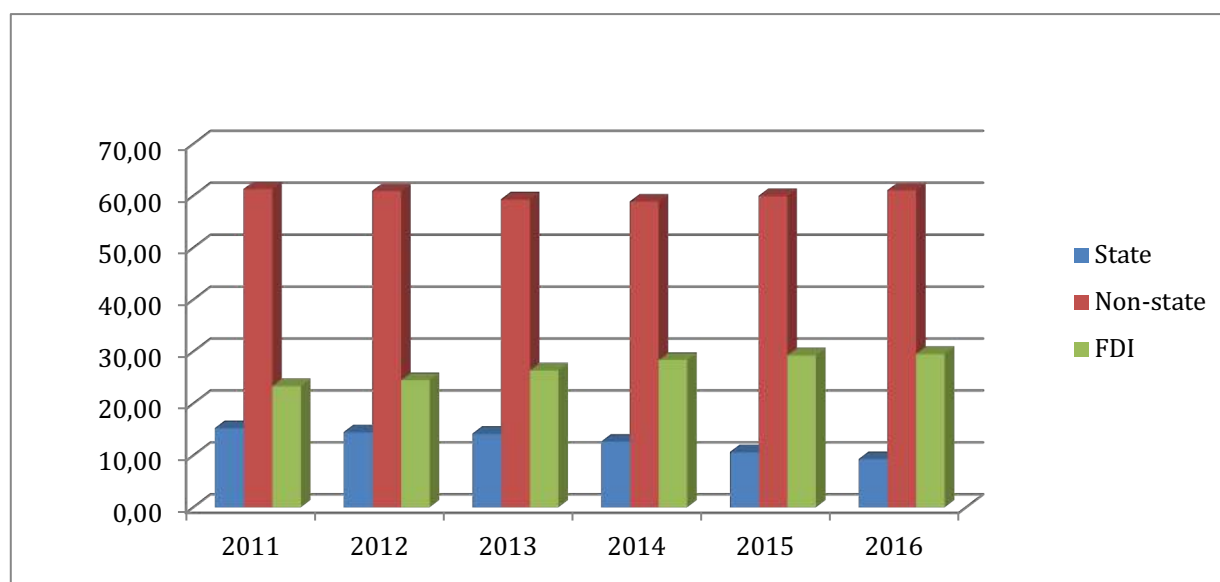


Source: Vietnam GSO. www.gso.gov.vn

Although the non-state area is the area that attracts the most workers, the labor force in this area accounts for over 60% of the total labor force, while the labor in the state sector is only about 10%, and the labor force in the Foreign investment sector is about 30% of the total labor force. The demand for labor and capital of the non-state business sector is very high, but it generates the lowest revenue and profit, but the irony is that non - state area has contributed the highest on tax. Taxes charged by non-state enterprises accounted for nearly 50% of the total tax collected from the business sector, while the State sector paid about 28% of the budget revenue in 2016 and the foreign investment sector paid only 26% of the budget revenue. The direct tax on foreign investment sector only paid to the budget 24.5% while the non-state sector paid the budget of 48%. The data show that from 2011 to 2016, the proportion of contribution to the budget of the foreign investment sector is decreasing, in 2011 the proportion of contribution to the budget of the foreign investment sector decreased from 32.5% down. 24.5% in 2016, while the budget remittance rate of the non-state sector increased from 35% in 2011 to 48% in 2016.

From this data shows the tax policy has no incentives for the non-state economic sector. All incentives are almost exclusively for State-owned enterprises and foreign investment sectors. The non-state business sector does not need slogans, support on paper, non-state business sector needs specific tax and capital support policies, People have the right to question who benefits from foreign investment areas.

Figure 4. Labor rate of ownership components



Source: Vietnam GSO. www.gso.gov.vn

Since joining WTO (2007) until now, the openness of the Vietnamese economy is very large, the export of goods in the period of 2007 - 2016 increased by 364%, the import of goods increased by 279%. However, if considering carefully the ownership can see that the FDI sector increased much faster than the domestic sector, the export of goods of the FDI sector in this period increased by 454% and the import of goods of the FDI sector increased by 472 %, the average export growth of the FDI sector in the period of 2007 - 2016 is about 21% per year and the average growth of import of the FDI sector is about 22% per year, while the export and import growth of the region The domestic sector in this period is 11% and 7% per year respectively. The import and export structure also shows that the FDI sector is rapidly taking up the export market share and also the import, in 2005 the export of the FDI sector accounted for 57% of the export value, in 2016 the region's exports this sector accounts for 72% of the total export value; Similarly, the import structure of the FDI sector also increased from 35% in 2005 to 59% in 2016.

Statistics data show that the trade deficit or trade surplus depends on the FDI sector, because the domestic economic sector is always in trade deficit and the FDI sector has always had trade surplus since 2000 up to now. from net foreign ownership payments estimated in 2018 it is possible to pay net foreign ownership of over \$ 20 billion, of which more than \$ 10 billion is for debt repayment and over \$ 10 billion It is a legally transferred FDI

capital to foreign countries and the average FDI tax is about 7.5 billion dollars, of which VAT is not the money of the FDI sector but the money of Vietnamese consumers contribute to the budget through the use of this region's products. This is not to mention how it is difficult for enterprises to bring products into and out of Vietnam, which is very difficult to grasp. So the real profit part may have been located in foreign countries that Vietnam cannot know and cannot tax. This part of the tax may be enjoyed by the government.

Based on the principle of permanent residence, the growth of the FDI sector can increase GDP but make the economy's resources increasingly narrowed through the indicators such as GNI, NDI, and saving of the economy while these indicators of the subjective countries of FDI enterprises increased. One problem is that in addition to the well-managed FDI sector, strong capital sources of Vietnam's policies benefit this region too much, while non-state-owned enterprises are not entitled to incentives. It is impossible to understand what people think when exempting processing enterprises from taxes (which are basically outsourced to produce outsourcing), if the domestic enterprises also import those goods for domestic production, they must pay import tax. , VAT on imported goods, but those that do processing are exempted from tax. So how can the manufacturing industry of auxiliary products be developed? In addition, FDI enterprises are entitled to corporate income tax incentives "newly established enterprises from investment projects in the economic zone are entitled to a 10% tax rate for 15 consecutive years from the first year. Enterprise first has revenue "and then gets preferential treatment again" In addition, businesses operating in the economic zone will be exempted from corporate income tax for 4 years from the time of business with taxable income and 50% reduction in the next 9 years."

The tax policy of Việt Nam is the barrier that makes the value-added of the domestic private sector impossible to exceed 8% in GDP during the past 15 years, the transformation of ownership structure in GDP is only a transfer between the two favored areas is the State-owned enterprises and the FDI sector. If nothing changes or only changes in words, then the individual economic sector will remain dominant for many years (contributing over 30% of GDP) while the FDI sector is not managed and tightly bound. Thus, the join integration on of Comprehensive and Progressive Agreement for Trans-Pacific Partnership (CPTPP) will be the playground of FDI enterprises and other countries only.

About inflation risks in 2020

Another issue should be warned that credit growth and money supply growth from 2013 to 2017 are always higher than GDP growth at current prices. The ratio of M2 to GDP is getting higher and higher, according to IMF data in 2017, this rate is about 104% in 2013, increasing by 165% in 2018 and 2018 is estimated at 170% of GDP. Looking at history, we can see that this situation is similar to the period of 2011-2011 and 2011 with great inflation. Increasing money supply plus increasing the price of a series of state-controlled products such as electricity, petroleum, health, or education¹. It should be warned that the risk of inflation may take place in 2020, or the underground and illegal economy in Vietnam is developing very strongly, is it that these activities themselves are helping Vietnam curb the increase of price?

Table 3. Some macro indicators in Vietnam

	2012	2013	2014	2015	2016	2017
Growth on money supply increase (M2) (%)	22.38	18.50	15.65	22.00	22.06	22.00
Credit growth (%)	8.91	12.51	11.80	18.24	18.25	17.26
Consumption price index (CPI) (Last year = 100)	9.21	6.60	4.09	0.63	2.66	3.53
M2/GDP (%)	96.36	103.70	114.07	130.70	149.21	165.08

¹ <https://tuoitre.vn/he-qua-cua-tang-gia-dien-xang-dau-dich-vu-y-te-don-dap-20190505221413422.htm>

GDP/M2 (times)	1.04	0.96	0.88	0.77	0.67	0.61
GDP Growth at current price (%)	16.75	10.44	9.87	6.48	7.39	11.18
GDP Growth at constand price (%)	5.25	5.42	5.98	6.68	6.21	6.81

Source: IMF and GSO

Structure of budget revenue and expenditure

+ Budget revenue

The structure of revenue collection shows that the basic source of income is from taxes and fees; this rate has been little changed from 2011 to 2017, although the structure of tax and fee changes reversed for each other, tax collection decreased from 86% in 2011 down to 72% in 2017, but fee collection increased from 5%. In 2011, up to 17.4% in 2017. The structural shift between taxes and fees is partly due to the hustle and bustle of Vietnam's integration, leading to lower import tariffs. The decree promulgating the ASEAN-China Tariff (ACFTA), 588 tariff lines will be cut from 5% in 2017 to 0%, mainly in key items such as iron and steel and iron and steel products. , electrical and electronic machinery and equipment, textile materials, garment fabrics, clothing, coffee, raw tea, food processing, partly due to excessive incentives for FDI enterprises, while the Foreign region investment has the highest growth rate of profit in the period of 2011 - 2016 (25.5%) compared to 2 domestic economic sectors, which are State-owned enterprises (21%) and non-Home sector. water (17.4%). Meanwhile, the average growth rate of total foreign investment tax is only 8.6% (compared to 21% of the non-state economic sector), especially the average growth of income tax. Foreign-invested enterprises are even lower, only 7.5% (compared to 21% of non-state economic sectors). In order to compensate for the tax revenue deficit, the Ministry of Finance collected fees such as tolls; This clause is essentially the same as indirect tax, but the budget is easily collected directly by the people

Revenues from capital also increased sharply from 7.5 in 2011 to 10% in 2017. Is the Government of Vietnam selling State assets to offset revenue?

Table 4. STRUCTURE OF STATE BUDGET REVENUES

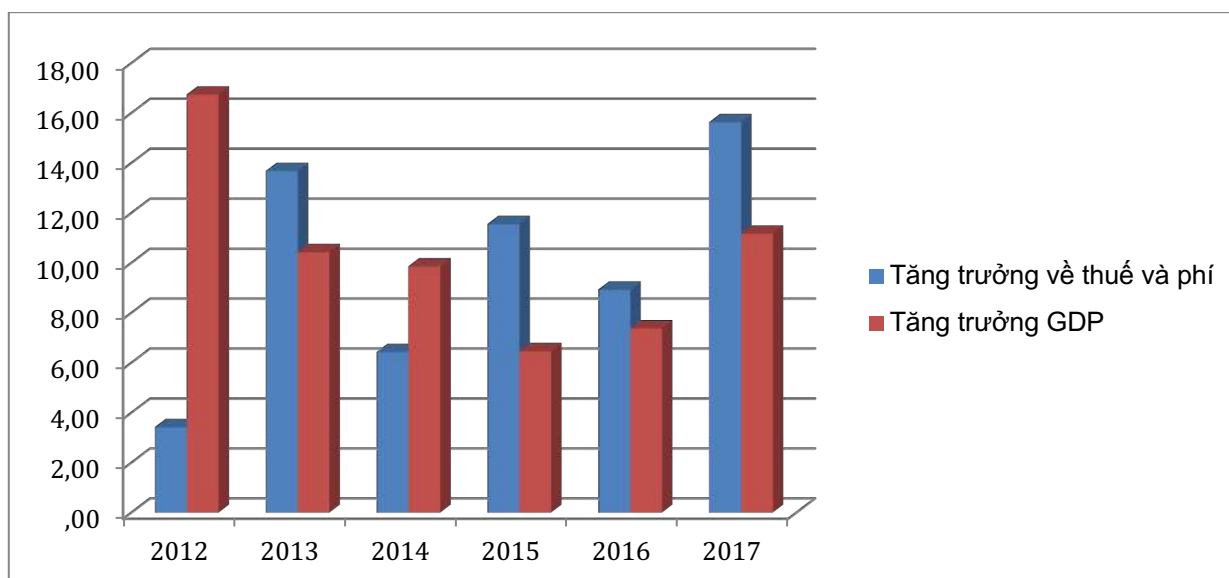
TT	Items	2017	2016	2015	2014	2013	2012	2011
-	State budget revenues and grants (I+II+III)	100%	100%	100%	100%	100%	100%	100%
I	Current revenues	89.5%	90.1%	91.7%	93.5%	93.1%	92.2%	90.8%
I.1	Taxes	72.1%	72.9%	75.8%	81.7%	82.7%	84.0%	85.7%
I.2	Fees, charges and non-tax	17.4%	17.2%	15.9%	11.7%	10.3%	8.2%	5.1%
II	Capital revenues (revenues from the sale of State-owned houses, land user right assignment)	9.9%	9.2%	7.1%	5.3%	5.6%	6.4%	7.5%
III	Grants	0.6%	0.8%	1.2%	1.3%	1.3%	1.4%	1.7%

Source: Mof.gov.vn

Figure 5 shows that only in 2012 and 2014 the growth rate of taxes and fees was lower than the GDP growth rate (at current price), the remaining years of growth rates of taxes and fees were much higher than GDP growth, especially in Three consecutive years from 2015 to 2017, the growth rate of taxes and fees compared to GDP growth is relatively large, this shows that the collection of taxes and fees exceeds the resources of the economy, if

this situation is last long. Real resources of the economy through savings indicator will be smaller in subsequent cycles.

Figure 5. Growth of tax and fees and GDP at the current price



+ *Budget expenditure*

Table 6 shows that the ratio of recurrent expenditure in total expenditure is always high, at 66% of total budget expenditure; Interest payment rate increased from 4.2% in 2011 to 7.2% in 2017. This shows that public debt is on the rise or debt with higher interest rates. The investment expenditure ratio tends to decrease.

Table 6. Structure of budget expenditure

	2011	2012	2013	2014	2015	2016	2nd est.2017
Total state budget expenditures	100	100	100	100	100	100	100
In Which:							
Current expenditures	66.3	66.2	69.3	69.7	66.9	68.3	66
Interest payment	4.2	4.4	4.4	6.4	6.9	7.2	7
Capital expenditures	29.5	29.4	26.3	23.9	26.1	24.6	27

Source:mof.gov.vn

Table 7 shows that in most years (except 2014 and 2016) the growth rate of budget expenditures and recurrent expenditures is higher than GDP growth rates (at current prices). The growth rate of interest payment is much higher than the GDP growth rate. This shows that if continued high recurrent spending and inefficient investment will make the Vietnamese economy plunge deeper into debt. This situation shows that the Vietnamese economy is very vulnerable. Flexible policies and coordination between fiscal and monetary policies are needed

Table 7. Growth of budget expenditure and GDP at the current price

Unit: Times

	2012	2013	2014	2015	2016	2nd est.2017
Total state budget expenditures	29.3	12.9	0.8	13.6	2.2	14.4
In Which:						
Current expenditures	29.2	18.2	1.3	9.1	4.3	11.3
Interest payment	33.9	12.8	48.3	22.9	5.8	14.0
Capital expenditures	29.0	1.1	-8.5	24.3	-4.0	23.3
GDP Growth	16.75	10.44	9.87	6.48	7.39	11.18

Source: mof.gov.vn

Conclusion and solution

First, do not consider GDP growth as the only indicator to assess the economy. GDP is a short-term and temporary indicator, because the corruption of inefficient investment also increases GDP at that time but may lead to macro instability, credit growth may also increase GDP but also lead to risks of bad debt and weak resources through savings targets

Second, Vietnam has participated in signing many multilateral and bilateral trade agreements, in an open and integrated world, the flow of foreign direct investment or indirectly flowing into Vietnam is inevitable. What do the government and people expect from this capital inflow into Vietnam: They expect to attract the labor force and technology transfer, but perhaps the most likely is the achievement disease from the central to Localities, when capital flows into any province that GRDP province increases and national GDP increases despite the fact that the Vietnamese people do not benefit much from this, but some people benefit from this growth achievement. Basic FDI attraction must see the added value that the Vietnamese side enjoys and does not affect the environment.

Third, Monetary policy depends on the evolution of the real economy, so it should be flexible in managing exchange rates and interest rates. Reduce the level of recurrent expenditures from the budget. One of the important questions in macroeconomics and public finance is how changes in tax policy to affect economic activity and social welfare well. Harmonizing interests between people, the State, and businesses? In theory, it is often assumed that taxes have a negative correlation with growth - higher taxes mean lower economic growth rates. This is explained by the fact that taxes create distortions to the economy, meaning that they are not neutral, as the higher tax the distortion of the economy increases.

References

- Barro, R.J. (1990) Government Spending in a Simple Model of Endogenous Growth. *Journal of Political Economy* 98, S103-S125
- Barro, R.J., and Sala -Martin , X.I. (2003) *Economic Growth* . 2nd Edition, The MIT Press,MA
- Bùi Trinh (2018) “ Nghịch lý trong điểm sang tăng trưởng” TBKTSG,
- Bùi Trinh (2017) “ Tăng trưởng GDP và FDI” Tạp chí Á sang

- Bui Trinh, Kiyoshi Kobayashi, Pham Le Hoa & Nguyen Viet Phong (2012) "Vietnamese Economic Structural Change and Policy Implications," Global Journal of HUMAN SOCIAL SCIENCE, Volume 12 Issue 9 Version 1.0
- Bùi Kiều Anh, Nguyễn Quang Thai, Bùi Trinh (2019) "Foreign Direct Investment (FDI) in Vietnam Economy" Theoretical Economics Letters, 9, 986-998.
- Nguyen Quang Thai and Bui Trinh (2010) "Analysis of the components contributing to economic growth" Journal of Economic Research, No. 5.6.
- Ngoc Q Pham, Bui Trinh, and Duc T Nguyen. (2007). Economic Performance of Vietnam 1976-2000: New Evidence From Input-Output Model. Hanoi: Development and Policies Research Center (DEPOCEN)
- Nguyen Quang Thai and Bui Trinh "Vietnam Public Debt in the safe limitation? " VNR500
- Pham Le Hoa, (2010) "If the figure can speak?" Saigon Economic Times, June/02/2010 8.
- Trinh, Bui, and Bui Quoc (2017): Some Problems on the Sectoral Structure, GDP Growth, and Sustainability of Vietnam, Journal of Reviews on Global Economics 6, 143-153.
- TCTK gso.gov.vn
BTC mof.gov.vn
WB www.worldbank.org

Gender Gap in SME Ownership: Are Women Left Behind?

Evidence from Sri Lanka

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Abstract

The current study examines the gender gap in SME ownership and socio-economic factors which lead women to start Small and Medium Enterprises (SMEs) in Sri Lanka. The study conducted enterprise survey with 329 SME owners and also household survey which focused on 400 unemployed women in Uva and Central Provinces of Sri Lanka. The study found that there is a significant gender gap in ownership of SMEs across four districts in both provinces and this trend is more pronounced in the Nuwara Eliya district where only 20% of SMEs are owned by women. However, the gender gap in SME ownership is comparatively low in both the Monaragala and Badulla districts where 48.1% and 41.7% of SMEs are run by females. The econometric analysis reveal that factors such as marital status, age, number of children, having primary education, attached to a family with business background, easy access to Business Development Service (BDS) and owning required capital assets motivate womens' to start SMEs. Hence, the study recommends to expand the facilities related to BDS while providing capital requirements to get women involved with SMEs more efficiently.

Keywords: Small & Medium Enterprises (SMEs), Women Labour Force Participation, Gender Gap, Business Development Service (BDS), Enterprise Survey

1. Introduction

It has been repeatedly stated that Small and Medium Enterprises (SMEs) play a crucial role in economic development of any country through income and employment generation. SMEs generally outnumber large companies and create vast amounts of employment opportunities. Moreover, the potential of SMEs to reduce inequality, drive innovation and competition has been recognized. In Sri Lanka, as of 2014, SMEs which made up nearly 90% of enterprises (over one million SMEs), contributed 52% to the country's GDP and produced 45% of its employment (Ministry of Industry and Commerce, 2016).

Countries define SMEs based on different bases and dimensions and therefore different counties have different definitions of SMEs. In the United State of America (USA) definition of SMEs varies by industries such as

manufacturing, mining and trade. In contrast, Canada identified four types of SMEs considering the number of employees. Apart from that, China has considered number of employees, annual revenue and assets in defining SMEs. However, it is crucial to focus on Sri Lankan definition of SME as this study based on SMEs in Sri Lanka. Sri Lanka has also considered two dimensions such as number of employees and annual turnover in order to classify SMEs into micro, small and medium categories. Under the present SME policy framework in Sri Lanka, SMEs are defined based on the number of employees and annual turnover. In order to qualify as a SME, an enterprise must employ less than 300 people and generate an annual turnover less than LKR 750.0 million.

Female labour force participation is important for an economy for many reasons. One hand, it indicates proper utilization of labour in an economy, which essentially required to achieve expected growth potential of a country and on the other hand increased women labour force participation is a clear image of the economic empowerment of women. However, Sri Lanka's female labour force participation is significantly low compared to men. More specifically, as the Department of Census and Statistics of Sri Lanka highlights, out of total economic inactive population, 69% are female. Similarly, only 34% out of the total economically active population is female. This becomes particularly critical as the majority of Sri Lanka's population is female and also as the population begins to age, fewer working age individuals remain in the workforce (Attygalle et al., 2014). Moreover, as Attygalle et al. (2014) emphasizes increasing female labour force participation can be done in two ways: first is by attracting more women into the labour force as 'employees', and the second is by encouraging more women to be 'employers', i.e., become women entrepreneurs. In fact, most initial and easiest way of being an entrepreneur is the establishment of a SME. As National Human Resources and Employment Policy (2012) indicates, there is a huge gender gap in SME sector and most of the SMEs are owned by men while women-owned SMEs are significantly low. However, it is rare to find a systematic study that focuses on gender gap related SME ownership in the context of Sri Lanka. Hence, the current study attempts to examine aforementioned issue related to four districts (Badulla, Monaragala, Matale and Nuwara Eliya) in Uva and Central provinces in Sri Lanka. More specifically, the study aims to accomplish objectives such as (1) to recognize the available diversified enterprise option related to SMEs in four districts (2) to examine the gender gap in SME ownership in four districts and (3) to identify the socio-economic factors which influence womens' decision on starting up SMEs. The reminder of the paper is structured as follows. The next section critically evaluates the available literature related to the study. After that, the methodology employed to accomplish the research objectives are elaborated followed by results and discussion. Finally, conclusions and recommendations are highlighted along with list of references of the study.

2. Literature Review

According to Women's Unit UK (2001), traditionally entrepreneurship is the domain of businessmen. In most countries, the majority of businesses are not owned or managed by women. Indeed, less than one third of all businesses in Europe are led by females, despite the fact that women make up half the European population. However, Dzisi (2008) argued that women's entrepreneurship has increased over the past decade as the percentage of women in business has increased. The growth of women entrepreneurs is part of the societal changes that have occurred and are occurring all over the world in the late twentieth and early twenty-first century. Demographically, as the number of women in the workforce increases, the number of women in business and commencing business also increases. Increased independence for women, later marriage, decreased child bearing, increased education levels, and the increased desire for financial independence all contribute to the growth of women-owned businesses (Fielden & Davidson 2005). Many women would simply not have had the opportunity, education or social acceptance to enter into business thirty years ago. Today, business is an accepted career path for women; it is even favoured to some degree as it is seen to have the potential to offer flexibility and independence that typical employment does not. Over the past two decades, women have increased their labour force participation. Women entering into business ownership and self-employment have become a visible and important trend. However, literature reports limited information and statistics on female entrepreneurship. This is mainly due to the fact that in most countries and regions, official statistics relating to the gender of business owners do not exist, with most businesses categorized according to sector, location and size (Butler, 2003) and (OECD, 2004). This makes it extremely difficult to determine, with any degree of accuracy, the actual level of female entrepreneurship, and the variations between countries and regions.

According to the National Foundation of Women Business Owners (NFWBO, 2002), in the US the number of US women-owned firms increased by 14% nationwide during the period of 1997-2002. In fact, 14% was twice the rate of all firms between 1997 and 2002. Similarly, women employment increased by 30%, 1.5 times the US rate, and sales grew by 40%, the same rate as all firms in the US (NFWBO, 2002). These reports demonstrate that the women entrepreneurs in the United States are making a vital contribution to the economic development of their economy by wealth and job creation. In Canada, studies found that there are more than 700,000 women-owned firms providing 1.7 million jobs in the country. The Organization of Economic Co-operation and Development (OECD) in its 2004 report provided a current actual estimate of the economic impact of women's entrepreneurship in Canada. According to this report, the Canadian Prime Minister's Task Force on Women Entrepreneurs (2003) assembled statistics from Statistics Canada on women entrepreneurs. Their findings revealed that there are more than 821,000 Canadian women entrepreneurs and they contribute in excess of 18,109 million Canadian dollars to the economy annually. Also, between 1981 and 2001, the number of women entrepreneurs increased 208 percent, compared with a 38 percent increase for men. Coughlin (2002) reported that since 1990, women in Eastern Germany have created a third of the new enterprises, providing one million jobs and contributing 15 billion US dollars annually to the gross national product. The OECD (2004) further stated that there is a total of 1.03 million women-owned businesses in Germany. Hence, the rate of women entrepreneurs and their economic impact in Germany is quite similar to that in the United States and Canadian economies.

Similar findings are reported in Australia, United Kingdom and parts of Asia, with more women entrepreneurs setting up new businesses than men, and with lower failure rates (Brush et al. 2006; Coughlin 2002; Fielden & Davidson 2005; Kitching & Jackson 2002). For example, female participation in entrepreneurial activity in Australia rose sharply from 5.6 percent to 9.6 percent in 2003, and the proportion of female entrepreneurs to male entrepreneurs rose from 48 percent to 71 percent (Brush et al. 2006). Also, a report by the Observatory of European SMEs (2002) indicated that 22 percent of all 7,600 entrepreneurs (where the gender of the owner could be established) in their study of 19 countries were women, with Greece (14%), Austria (15%), the UK (16%) and Denmark (16%) having the lowest level of entrepreneurship. The report also showed that the Netherlands (27%), Luxembourg (27%) and France (30%) had the highest levels of women entrepreneurial activity. However, a Global Entrepreneurship Monitor (GEM) Report (2001) found that difference in entrepreneurship activity between men and women was not as significant in Italy, New Zealand and Spain. In these countries, women entrepreneurship rates were either two-thirds of or almost equal to that of men (GEM 2001). In the UK women are notably underrepresented among the self-employed, but there are significant differences between regions, with inner London showing the highest level of women entrepreneurs (36%), and West Yorkshire showing one of the lowest levels, with 19 percent (Women's Unit UK 2001). In examining other countries in Africa, Asia, Eastern Europe and Latin America, the OECD reported that women-owned businesses are growing rapidly (OECD 1998, 2004). For example, women produce more than 80 percent of food for sub-Saharan Africa, 60 percent for Asia, 29 percent for the Caribbean, 34 percent for North Africa and the Middle East, and more than 30 percent for Latin America (Woldie & Adersua, 2004). In many cases, Coughlin (2002) observed, these women do not only produce food but market it as well, giving them a well-developed knowledge of local markets and customers.

Despite women's engagement in the labour market increases over time, women are still left behind compared to men in terms of labour force participation and also related to starting up business such SMEs. Women seek entrepreneurship due to many reasons such as an idea innovation, unsatisfied employment status, willingness to have flexible working hours and also getting rid of persistent unemployment (Winn, 2005). According to the National University of Singapore, women in developing countries still run considerably fewer businesses compared to men, though the rate of new business formed by women outnumbered that of men in recent years. As the Department of Census and Statistics (2012) highlighted only 10% of women are employers out of total number of employers and this 10% is just 0.9% when considering total employed population in Sri Lanka. Similarly, it is revealed that SMEs led by women are only 10%, despite 80% of the national economy of Sri Lanka being driven by SMEs. (The Nation, 2013). Out of female SME owners, the majority of them engage in micro enterprises and also in the informal sector. Moreover, Consumer Finance Survey (Various years) highlighted that though most of rural women are linked with agriculture production activities, economic, social and cultural barriers limit their participation in agribusiness activities. Moreover, Vossenber (2013) indicated that difficulties such as lack of

access to financial resources, lack of access to information, inadequate training and guidance, legal barriers, lack of societal support, patriarchal value systems, gender based violence and inability to balance work-family workload restrict the women's' potential to become entrepreneurs. In fact, womens' lower engagement with SME can be commonly seen in Sri Lanka and however there only very few studies which focus on this issue. Mainly, Attygalle et al. (2014) is one key studies which examines female entrepreneurs and Business Development Services (BDS). Therefore, they haven't directly address the issue of gender gap in SME sector and women participation in SME sector. Hence, the current study aims to address this issue and provides more comprehensive understanding on gender gap in the SME sector while addressing the factors which influence women decision on owning SMEs.

3. Methodology

3.1 Data

3.1.1 Enterprise Survey and the Survey Focused on Unemployed Women

An enterprise survey was carried out to identify the types of SMEs in two provinces namely Uva and Central. The survey was conducted in both provinces covering four districts and 20 Divisional Secretariat (DS) divisions. In fact, 5 DS divisions per each district were selected and table 01 summarizes selection 329 SMEs as the sample for the enterprise survey. In addition to the enterprise survey, a survey which forced on unemployed women was also conducted to examine what factors drive women to start a SME. All together 400 of unemployed women who live in the same DS divisions were interviewed in order to collect the required data. Table 01 indicates the equal distribution of the sample among the DS divisions.

Table 1: Description of enterprise survey sample

District	No. of Divisional Secretariat Divisions	Number of SMEs	Number of Unemployed Women
Badulla	Haliela	18	20
	Meegahakiula	18	20
	Passara	15	20
	Ella	18	20
	Haputhale	15	20
Monaragala	Bibile	17	20
	Buttala	17	20
	Badalkumbura	16	20
	Monaragala	19	20
	Wellawaya	12	20
Matale	Rattota	18	20
	Matale	14	20
	Ukuwela	15	20
	Yatawatte	16	20
	Naula	16	20
Nuwara Eliya	Ambagamuwa	19	20
	Kotmale	16	20
	Walapane	23	20
	Hanguranketha	12	20
	Nuwara Eliya	15	20
Total no. of participants		329	400

Source: Author

Sample size of the enterprise survey (329) was determined in consultation with government officers related to SME development in each district, as they have better understanding on the distribution of SMEs across DS divisions. Two structured questionnaires which were administered by two groups of enumerators used for both surveys.

3.1.2 Focus Group Discussions (FGDs) and Key Informant Interviews (KIIs)

It is important to note that FGDs and KIIs are used as the key sources of qualitative data in this study. The main objectives of the FGDs and KIIs are to obtain comprehensive and in-depth understanding about the MSMEs in both provinces and also from key national level informants. Similarly, FGDs and KIIs provided a crucial platform for policy oriented recommendations.

Table 02: Number of FGDs and KIIs at district and national levels

Districts	FGDs	KIIs
Badulla	1	2
Monaragala	1	2
Matale	1	2
Nuwara Eliya	1	2

Source: Author

As table 02 indicates, altogether 4 FGDs were conducted at district level along with 2 KIIs per district. 2 KIIs at district levels include KIIs with one government sector officer and one private sector officer.

3.2. Analytical Methods and Techniques

3.2.1 Descriptive Analysis

Mainly, the descriptive analysis was applied to examine the characteristics of the sample and also to indicate disparity in ownership of SMEs by men and women. Thus, graphs, charts and table have been frequently used along with some direct quotations from the interviews and the desk review.

3.2.2 Econometric Analysis

Econometric analysis was used to recognize the socio-economic factors that influence womens' decision of owning a SME. As indicated in the section 03.1, 400 unemployed women were interviewed and asked whether they are willing to start a SME. Therefore, the econometric analysis was conducted to examine whether there is a certain relationship between their decision and their socio-economic factors. A regression equation which is indicated below was estimated based on the Probit Model.

$$y_i^* = x_i\beta + u_i \dots \dots \dots (01)$$

Where y^* is a discrete variable which can take 0 or 1 where;

1 = If respondent is willing to start a SME

0 = If respondent is not willing to start a SME

x_i is the vector of independent variables which includes independent variables such as marital status of the respondent, age, number of children, level of education, whether the respondent from business family, access to Business Development Services (BDS), whether the husband is employed and whether they the respondent has capital assets. The detailed explanation of the variables can be found from table 08 which indicates the results of the Probit Model.

4. Results and Discussion

4.1 District-wise current enterprise options and type of business

One of the main objectives of this study is to identify the diversified enterprise options available in the Uva and Central Provinces. Therefore, the enterprise survey conducted in four districts (Badulla, Monaragala, Matale and Nuwara Eliya) identified SMEs located in these districts. Table 03 summarizes the number (percentage) of currently available SMEs in four districts in terms of the size of the SMEs.

Table 3: Number (Percentage) of SMEs in four districts by size of SMEs

SME Size	Number of employees	Name of the district							
		Badulla		Matale		Monaragala		Nuwara Eliya	
Micro	1-10	78	(98.7%)	60	(80.0%)	71	(88.8%)	68	(87.2%)
Small	11-50	1	(1.3%)	15	(20.0%)	8	(10.0%)	10	(12.8%)
Medium	51-300	0	(0.0%)	0	(0.0%)	1	(1.3%)	0	(0.0%)

Source: Computed by author based on enterprise survey

As table 03 indicates, over 80% of SMEs surveyed in each district are performing at micro level. Particularly, Badulla accounts for the largest number (78) of micro level SMEs followed by Monaragala where 88.8% of SMEs are at micro level. In contrast, 20% of SMEs in Matale are Small level SMEs and in fact Matale has the largest number (15) of Small SMEs among all four districts. In addition to Matale, Nuwara Eliya and Monaragala also have Small level SMEs at 12.8% and 10% respectively. In contrast, Badulla as per the survey has only one Small scale SME. However, the survey was able to capture only one Medium scale SME which was in Monaragala.

Furthermore, table 04 indicates the distribution of SMEs in four districts across the main three economic sectors: agriculture, industry and service.

Table 4: Number (Percentage) of SMEs in four districts by size of SMEs and main sectors

	SME Size	SME Size						Total
		Micro		Small		Medium		
		Count	Percentage	Count	Percentage	Count	Percentage	
Badulla	Agriculture	25	32.0%	0	0.0%	0	0.0%	25
	Industry	44	56.4%	1	100.0%	0	0.0%	45
	Service	9	11.5%	0	0.0%	0	0.0%	9
Matale	Agriculture	12	20.0%	5	33.3%	0	0.0%	17
	Industry	48	80.0%	10	66.7%	0	0.0%	58
	Service	0	0.0%	0	0.0%	0	0.0%	0
Monaragala	Agriculture	15	21.1%	3	37.5%	0	0.0%	18
	Industry	51	71.8%	5	62.5%	1	100.0%	57
	Service	5	7.04%	0	0.0%	0	0.0%	5
Nuwara Eliya	Agriculture	24	35.3%	4	40.0%	0	0.0%	28
	Industry	37	54.4%	5	50.0%	0	0.0%	42
	Service	7	10.3%	1	10.0%	0	0.0%	8
Total		277		34		1		312

Source: Computed by author based on enterprise survey

It is interesting to note that SMEs in the industrial sector outnumber the SMEs in both agriculture and service sectors. 80% of Micro level SMEs surveyed in the Matale district are industry related and the percentages for Monaragala and Badulla districts are 71.8% and 56.4% respectively. A similar pattern can be seen for Small level SMEs as well. Agriculture sector accounts for the second largest share of SMEs in all four districts followed by the service sector. Nuwara Eliya has the largest share (35.3%) of agriculture based SMEs followed by 32% in Badulla. Service sector related SMEs, Badulla has the largest share (11.5%) followed by Nuwara Eliya (10.3%). It is apparent that most of the service related SMEs in both Badulla (Ella area) and Nuwara Eliya are attached to the tourism industry.

Table 05 disaggregates the SMEs into 10 types of business in the four districts. The enterprise survey interviewed 99 SME holders in the agriculture, farming and dairy industry and Nuwara Eliya accounts for the largest share (37.4%) of SMEs in this category, followed by Badulla (24.2%). Apart from that SMEs related to arts and craft are common in Matale and Matale accounts for 52.9% of total arts and craft SMEs. 57 of the SME holders interviewed were in Food and Beverages which formed the second largest type of business and the majority (33.3%) were in the Monaragala district followed by Matale and Nuwara Eliya. Similarly, apparel and bag production is also a significant business category in these districts mainly located in Matale (32.7%) and Monaragala (25.5%). As per the survey, a high proportion of hotels and homestays were located in the Badulla district accounting for 64.3% with Nuwara Eliya accounting for 28.6%.

Table 5: Number (Percentage) of SMEs by type of business in four districts

Type of Business	Badulla		Matale		Monaragala		Nuwara Eliya		Total	
	Count	Percentage	Count	Percentage	Count	Percentage	Count	Percentage	Count	Percentage
Agriculture, farming and dairy	24	24.2	18	18.2	20	20.2	37	37.4	99	30.1
Arts and crafts	9	26.5	18	52.9	4	11.8	3	8.8	34	10.3
Apparel and bags	11	20	18	32.7	14	25.5	12	21.8	55	16.7
Auto parts and maintenance	1	12.5	0	0	4	50	3	37.5	8	2.4
Food and beverages	10	17.5	14	24.6	19	33.3	14	24.6	57	17.3
Hotels and Homestay	9	64.3	0	0	1	7.1	4	28.6	14	4.3
Cement and metalwork	9	37.5	4	16.7	8	33.3	3	12.5	24	7.3
Furniture	3	50	2	33.3	1	16.7	6	100	12	3.6
Salons and spas	2	28.6	1	14.3	1	14.3	3	42.9	7	2.1
Household items	0	0	4	57.1	3	42.9	0	0	7	2.1
Other	6	50	0	0	6	50	0	0	12	3.6
Total	84		79		81		85		329	

Source: Computed by author based on enterprise survey

In addition to these main business categories, cement and metalwork, furniture, salons and spas and household items are also recognized as common business types in these four districts.

4.2. Gender composition of SME holders

Figure 01 depicts the gender composition of SMEs in the four districts of Uva and Central provinces. On average, the number of female entrepreneurs are lower than that of males and this trend is more pronounced in the Nuwara Eliya district, where our survey only captured only 17 female-headed SMEs (20%) as against 68 SMEs run by

males. In fact, a majority of women in the Nuwara Eliya district is employed in the plantation sector, where there are only limited opportunities for them to become entrepreneurs. However, the gender gap in SME ownership is comparatively low in both the Monaragala and Badulla districts where 39 (48.1%) and 35 (41.7%) of SMEs are run by females.

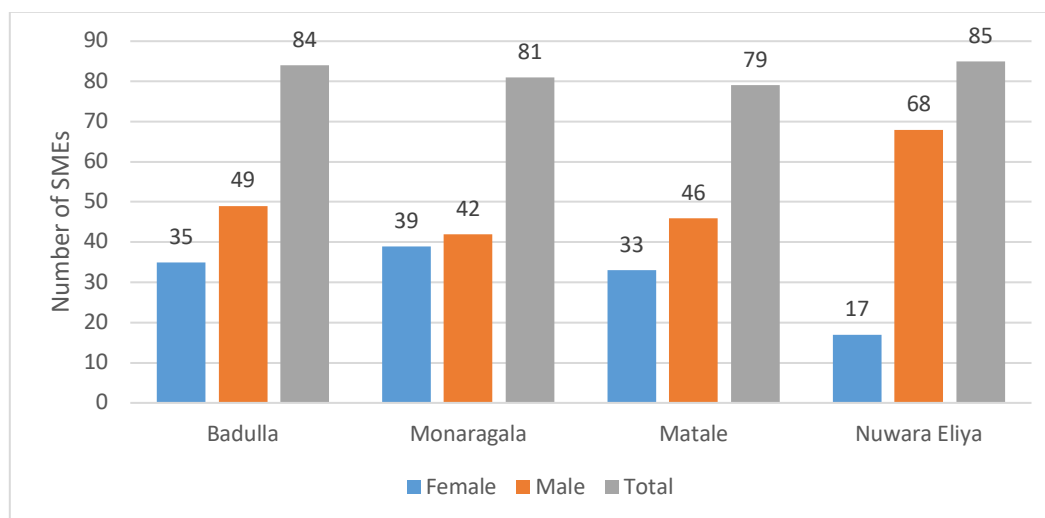


Figure 01: Gender composition of SMEs in four districts

Source: Created by author based on enterprise survey

Apart from that, table 06 summarises gender composition of SMEs in all four districts in terms of main sectors (Agriculture, Industry and Services) and size of SMEs (Micro, Small and Medium).

Table 6: Gender composition of SMEs by main sectors and size of SMEs

		SME Size					
		Micro		Small		Medium	
		Female	Male	Female	Male	Female	Male
Badulla	Agriculture	7 (28.0%)	18 (72.0%)	0 (0.0%)	0 (0.0%)	0 (0.0%)	0 (0.0%)
	Industry	25 (56.8%)	19 (43.2%)	0 (0.0%)	1 (10.0%)	0 (0.0%)	0 (0.0%)
	Service	2 (22.2%)	7 (77.8%)	0 (0.0%)	0 (0.0%)	0 (0.0%)	0 (0.0%)
Matale	Agriculture	5 (41.7%)	7 (58.3%)	2 (40.0%)	3 (60.0%)	0 (0.0%)	0 (0.0%)
	Industry	20 (42.6%)	27 (57.4%)	4 (40.0%)	6 (60.0%)	0 (0.0%)	0 (0.0%)
	Service	0 (0.0%)	0 (0.0%)	0 (0.0%)	0 (0.0%)	0 (0.0%)	0 (0.0%)
Monaragala	Agriculture	8 (53.3%)	7 (46.7%)	2 (66.7%)	1 (33.3%)	0 (0.0%)	0 (0.0%)
	Industry	23 (45.1%)	28 (54.9%)	3 (60.0%)	2 (40.0%)	1 (100.0%)	0 (0.0%)
	Service	2 (40.0%)	3 (60.0%)	0 (0.0%)	0 (0.0%)	0 (0.0%)	0 (0.0%)
Nuwara Eliya	Agriculture	1 (4.2%)	23 (95.8%)	0 (0.0%)	4 (100.0%)	0 (0.0%)	0 (0.0%)
	Industry	11 (29.7%)	26 (70.3%)	0 (0.0%)	5 (100.0%)	0 (0.0%)	0 (0.0%)
	Service	3 (42.9%)	4 (57.1%)	0 (0.0%)	1 (100.0%)	0 (0.0%)	0 (0.0%)

Source: Created by author based on enterprise survey

According to the table 06, in Badulla district, the majority of agriculture based SMEs (72.0%) are run by males while a majority of the industry based SMEs by females (56.8%). However, an opposite trend is seen in Monaragala where a majority of females operate agriculture based micro SMEs (53.3%), while a majority of industrial SMEs are run by males (54.9%). In contrast, the gender composition for SMEs in the Nuwara Eliya district is extremely male-skewed and a majority of SMEs in all three sectors (Agriculture, industry and service)

are owned by males while the proportion headed by females is very low. Moreover, as the table 06 indicates, SMEs in service sector is dominated by males in all four districts.

Table 7: Gender composition of SME by type of business

Type of Business	Sex				Total
	Female		Male		
Agriculture, farming and dairy	27	(27.3%)	72	(72.7%)	99
Arts and crafts	8	(23.5%)	26	(76.5%)	34
Apparel and bags	39	(70.9%)	16	(29.1%)	55
Auto parts and maintenance	1	(12.5%)	7	(87.5%)	8
Food and beverages	23	(40.4%)	34	(59.6%)	57
Hotels and Homestay	5	(35.7%)	9	(64.3%)	14
Cement and metalwork	9	(37.5%)	15	(62.5%)	24
Furniture	4	(33.3%)	8	(66.7%)	12
Salons and spas	2	(28.6%)	5	(71.4%)	7
Household items	4	(57.1%)	3	(42.9%)	7
Other	2	(16.7%)	10	(83.3%)	12
Total	124	(37.7%)	205	(62.3%)	329

Source: Created by author based on enterprise survey

Table 07 indicates that as per the survey findings, 62.3% of the businesses are run by males while only 37.7% are owned by females, thus showing a significant gender gap in the four districts. According to Department of Census and Statistics, in 2016 female labour force participation in Sri Lanka was only 35.9% with male participation amounting to a high of 75.1%. According to table 07, apparel and bag and household items are the only business types where women are in the fore accounting for 70.9% and 57.1% respectively.

4.3: Impact of socio-economic factors on womens' decision on owning a SME

This section attempts to recognize the socio-economic factors which influence womens' decision on owning a SME. Table 08 indicates the marginal effects of the estimated probit model. According to the table 08, married women have higher willingness to own SMEs compared to unmarried women. More specifically, the probability of owning a SME by married women is higher by 6.88% compared to unmarried women. In fact, unmarried women have less willingness to start businesses as they have are waiting for government or private sector employment. In contrast, married women face to various financial issues related to their household and in turn they may want to start a SME as an income source for their household. Similarly, age also positively and statistically significantly associates with womens' decision on owning a SME and it clearly indicates that older women tend to start SMEs compared to younger women. It is well-noticed that young women are very rare to start their own businesses as their first employment in the context of Sri Lanka. The main reason is they more care about job security in government and private sectors rather than taking the risk attached with SMEs or related businesses. Studies such as Sinha (1996), Fatoki & Odeyemi (2010) and, Welmilla *et al.* (2011) and Nguyen & Luu (2013) also observed such positive relationship between age and SME start up and development.

Apart from that, number of children in the household seems to be an obstacle for starting up a business and this relationship is statistically significant at 5% level. Mother's role is crucial in the context of Sri Lanka and having more children therefore increases the women workload at home. Hence, such women may not have sufficient time to think about a business rather than caring about childrens' nutrition and education. The study incorporated education levels such as no schooling, primary, secondary and tertiary and it is observed that only the primary level of education is statistically significant by 10% level. In fact, more educated women always search for permanent employment opportunities with higher wages and therefore have lower tendency for starting up a business. Charney & Libecap (2000) also observed that educational attainments only related to entrepreneurship promote people to start their own businesses.

Table 8: Impact of socio-economic factors on womens' decision on owning a SME

Variables	Coefficients
Marital Status of the Respondent (Unmarried)	
Married	0.0688** (2.43)
Number of Children	-0.187** (-2.49)
Age	0.0189** (2.73)
Education of the Respondent (No Schooling)	
Primary	0.0038 (0.18)
Secondary	0.0388* (1.67)
Tertiary	- 0.0105 (-0.54)
Business Background of the Family (Didn't Own a Business)	
Family owned a Business	0.139** (2.50)
Employment Status of the Husband (Unemployed)	
Employed	- 0.0340 (-0.82)
Nature of Access to BDS (No Access to BDS)	
Have Access to BDS	0.009* (1.80)
Nature of Owning Capital Assets (Don't Own Capital Assets)	
Own Capital Assets	0.0550** (2.20)
Number of Observations	400
Prob> Chi ²	0.0141
Pseudo R ²	0.0213

Source: Calculated by author based on household survey

The current study clearly observed that women whose parents owned a business have higher readiness to start a SME compared to those who are from a non-business family. The finding is in line with the findings of De Mel *et al.* (2008). Especially, the women who are from business families have experiences related to their business and also they have positive attitudes towards starting up a new business along with risk taking abilities. Moreover, such families provide higher level of supports for their children to be entrepreneurs.

Business Development Services (BDS) provide crucial support for entrepreneurs from the planning stage to till growing their business up to large scale. The assistances provided by BDS particularly such as technical skills and knowledge, market information and opportunities and linking with relevant stakeholders are vital for entrepreneurs. Therefore, having access to BDS can be considered as one of the key factors that influences womens' decision on owning a SME. As table 08 indicates, the current study also confirms the importance of having access to BDS. More particularly, the probability of owning a SME by the women who have better access to BDS is higher by 0.9% compared to the women who don't have access to BDS and the estimated relationship is statistically significant at 10% level. Scholars such as Abeyratne & Ranasinghe (2004), Abeyratne (2006) and Attygalle *et al.* (2014) also confirm that BDS plays a crucial role in developing start-up business. However, their findings were based on SMEs in general rather than focusing on women-owned SMEs. Apart from that, the results also highlights that owning capital assets such as place to start a business, initial capital and equipment and machineries related to SME also important for women when they are going to take decision on starting a business.

In fact, the readiness of starting a business of women who have such capital assets is higher by 5.5% compared to the women who don't own such assets. Importance of capital assets is also highlighted by De Mel *et al.* (2008) and Attygalle *et al.* (2014) in the context of Sri Lanka.

5. Conclusion and Recommendation

The current study mainly examines the gender disparity in SME ownership in Uva and Central Provinces in Sri Lanka while recognizing the socio-economic factors which lead women to start SMEs. The study found that there is a significant gender gap in ownership of SMEs across four districts in both provinces. The results of the enterprise survey highlights that over 80% of SMEs surveyed in each district are performing at micro level. Particularly, Badulla accounts for the largest share of (98.7%) of micro level SMEs followed by Monaragala where 88.8% of SMEs are at micro level. In contrast, Matale and Nuwara Eliya have the lowest share of micro level SMEs. Apart from that, it is noted that SMEs in the industrial sector outnumber the SMEs in both agriculture and service sectors. Especially, Matale district accounts for the largest share of industrial related micro-SMEs followed by Monaragala and Badulla. In contrast, service related SMEs can be commonly seen in both Badulla (Ella area) and Nuwara Eliya as these areas are popular as tourism destinations. The study recognized 10 main business types in four districts and examined that majority of SMEs fall into the category of Agriculture, Farming and Dairy Industry while the categories such as Salons and Spas and Household Items reported as the lowest. Moreover, 62.3% of the businesses are run by males while only 37.7% are owned by females, thus showing a significant gender gap in the four districts.

The study recognized that the number of female entrepreneurs are lower than that of males and this trend is more pronounced in the Nuwara Eliya district where only 20% of SMEs are owned by women. However, the gender gap in SME ownership is comparatively low in both the Monaragala and Badulla districts where 48.1% and 41.7% of SMEs are run by females. Considering the main sectors, the majority of agriculture based SMEs in Badulla and the majority of industrial related SMEs in Monaragala are owned by males while womens' ownership is significantly lower. Similarly, the gender composition for SMEs in the Nuwara Eliya district is extremely male-skewed and a majority of SMEs in all three sectors (Agriculture, industry and service) are owned by males while the proportion headed by females is very low. The econometric analysis based on the household survey examines the impact of socio-economic factors on womens' decision on owning a SME. The results reveal that the readiness to start a business of both married and older women are significantly higher than that of both unmarried and younger women. However, the probability of intention to own a SME decreases with the increase of number of children in household. Apart from that, the Probit model recognizes that factors such as having primary education, attached to a family with business background, easy access to BDS and owning required capital assets essentially motivate womens' to start SMEs. The study emphasizes the requirement of encouraging female entrepreneurs in order to strengthen the household economy while contributing national economy as well. On this regard, it is crucial to provide them BDS along with capital requirements which are required to start up SMEs. Similarly, there should be a proper mechanism to educate women through BDS on how to balance work-family life and in turn they will be able to engage with their own business more effectively. Moreover, education which enriched with entrepreneurial skills is also vital to develop more women entrepreneurs who can own successful SMEs.

References

- Abeyratne, S. & Ranasinghe, H.M. (2004), Promotion of local private sector in Moneragala district: Problem and prospect study for MONDEP research project for development studies institute, University of Colombo, Colombo
- Abeyratne, S. (2006). Small and medium enterprises in Sri Lanka: Integrating the SME sector with the market. Centre for Development Research, Colombo
- Athukorala, N.A.R. (2017). A SME policy finally in Sri Lanka. Daily FT.
- Attygalle, K., Hirimuthugodage, D., Madurawala, S., Senaratne, A., Wijesinha, A. and Edirisinghe, C. (2014). Female entrepreneurship and the role of business development services in promoting small and medium women entrepreneurship in Sri Lanka

- Brush, C.G., Carter, N., Gatewood, E., Greene, P & Hart, M. (2006). *Growth-Oriented Women Entrepreneurs and their Businesses: A Global Research Perspective* Edward Elgar Publishing, Cheltenham.
- Butler, J. (2003). *New Perspectives on Women Entrepreneurs*, Information Age Publishing Inc., Greenwich, Connecticut.
- Canadian Prime Minister's Task Force on Women Entrepreneurs Report and Recommendations. (2003). Canada: www.liberal.parl.gc.ca/entrepreneur, viewed 4th April 2006.
- Charney, A., & Libecap, G. D. (2000). *Impact of entrepreneurship education* (p. 45-60). Kansas City, MO: Kauffman center for entrepreneurial leadership.
- Coughlin, J. (2002), *The Rise of Women Entrepreneurs*, Quorum, Westport, Connecticut.
- De Mel, S., McKenzie, D., & Woodruff, C. (2008). *Who are the microenterprise owners? Evidence from Sri Lanka on Tokman v. de Soto*. The World Bank.
- Department of Census and Statistics. (2012). *Final Report: Household Income and Expenditure Survey*. Department of census and Statistics, Sri Lanka
- Department of Census and Statistics. (2012). *Sri Lanka labour force survey annual report*. Department of Census and Statistics, Sri Lanka.
- Dzisi, S. (2008). *Women Entrepreneurs in Small and Medium Enterprises in Ghana*. PhD Thesis.
- Fatoki, O. and Odeyemi, A. (2010) Which New Small and Medium Enterprises in South Africa Have Access to Bank Credit? *International Journal of Business and Management*, 5, 128-136
- Fielden, S & Davidson, M. (2005.) *International Handbook of Women and Small Business Entrepreneurship*, Edward Elgar Publishing Limited, Northampton, Massachusetts.
- Global Entrepreneurship Monitor. (2002). *Executive Report*, Babson College, Wellesley,
- Kitching, B.M & Jackson, P.A. (2002). *Female Entrepreneurs in Transitional Economies: Businesswomen in China*. *The International Journal of Entrepreneurship and Innovation*, vol.3, no.2, pp.145-155. Massachusetts.
- Ministry of Industry and Commerce (2016). *Annual Report*. Ministry of Industry and Commerce of Sri Lanka.
- National Foundation of Women Business Owners. (2002)
- Nguyen, N. and Luu, N. (2013) *Determinants of Financing Pattern and Access to Formal-Informal Credit: The Case of Small and Medium Sized Enterprises in Viet Nam*. *Journal of Management Research*, 5, 240-259
- Observatory of European SMEs. (2002). *Highlights from the 2001 Survey*, No.1, European Commission Enterprise Publications, Luxembourg.
- OECD (2004). *Promoting, entrepreneurship and innovative SMEs in a global economy: Towards a more responsible and inclusive globalization*. 2nd OECD conference on ministers responsible for SMEs.
- OECD. (1998). *Fostering Entrepreneurship*. Proceedings of OECD Conference on Jobs Strategy, Paris
- Sinha, T. N. (1996). *Human Factors in Entrepreneurship Effectiveness*. *The Journal of Entrepreneurship*, 5(1), 23-39.
- The Nation. (2013). *Low financial literacy, crowding out of women*.
- Vossenbergh, S. (2013). *Women entrepreneurship promotion in developing countries: What explains the gender gap in entrepreneurship and how to close it?* Working Paper no. 2013/08. Maastricht School of Management, Netherlands.
- Welmilla, I., Weerakkody, W. A. S., & Ediriweera, A. N. (2011). *The impact of demographic factors of entrepreneurs on development of SMEs in tourism industry in Sri Lanka*. Faculty of Commerce and Management Studies, University of Kelaniya, Sri Lanka.
- Winn, J. (2005). *Women entrepreneurs: Can we remove the barriers*. *International Entrepreneurship and Management Journal*. Vol. 1(3): 381-397
- Woldie, A. & Adersua, A. (2004). *Female Entrepreneurs in a Transitional Economy: Businesswomen in Nigeria*. *International Journal of Social Economics*, vol. 31, no.1/2, 2004, pp.78-93. Emerald Group Publishing Ltd. ISSN 0306-8293
- Women's Unit UK, & Ministry of Industry, Employment and Communications (Sweden), 2001, *Women as Entrepreneurs in Sweden and the UK*, Cabinet Office, London

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Green Economy and Access to Finance in Georgia (Going Beyond the Commercial Banking Sector to Finance Businesses in Georgia)

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Abstract

In this article we have overviewed the green economy recent trend and situation in Georgia. Our research has studied the financial vehicles that go beyond traditional sources of private capital offered by commercial banks. We have studied the international experience and the opportunities to use public support, green bonds to raise green finance as well as the work of energy service companies (ESCOs) to finance green investments. We have highlighted the present conditions of Georgia and proposed some ideas about how to turn Georgia from a backward country into a developed one. In that field it is studied the readiness and the importance of the strong and reliable green energy economy for sustainable economic growth, their interaction, the lack of market tools and market price (capitalization) in Georgia. At the same time, we have highlighted and presented the negative gap between the per capita GDP of Georgia and developed countries, like Switzerland, Hungary and Poland and the Europe. Also, it had investigated the problems of stock market in Georgia and the ways how to encourage economic growth in Georgia based on modern market tools and green bonds issues.

Keywords: Economy Growth, Green economy, GDP, Energy Policy, Stock Market

INTRODUCTION

This research will explore other possible financial vehicles that go beyond traditional sources of private capital offered by commercial banks. We have studied the international experience, and the opportunities to use public support, green bonds to raise green finance as well as the work of energy service companies (ESCOs) to finance green investments.

We have offered our view of what should be done in fact (not in paper in Georgia as it has been in the past 15 years) to change the situation and end the negative and harmful monopoly of the commercial banks and the

National Bank of Georgia and to have in place the two independent sources to attract and invest resources in Georgia.

This will increase the capitalization of the country and is a proven way to eradicate the country's lagging and accelerate economic growth.

Why should we focus on this issue?

1. According to WHO's latest data, over 7 million people die each year because of breathing air with solid particles, and one of its main pollutants is vehicles. (Cereceda Rafael, Cuddy Alice. 2018.....)
2. Georgia's Capital - Tbilisi - is occupying the 3rd place in the light of air pollution,
3. Due to the critical situation, the public demand to live in a clean ecological environment, day by day increases.

In our research, the following Questions are discussed and overviewed:

- Is it important to act on the issues of Georgia's position on the global scale?
- What unique components can be used to prolong the average life of people?
- What investors do the country need for building eco-projects and their realization?
- What type of ecofriendly technologies can be developed for potential customers in Georgia?

In that field, we have studied the following:

- The links between economic growth, green growth (e.g., clean energy), high living standards and capital markets;
- Why the Commercial Banks are the main and the alone source of finance for green (and not only) investments in Georgia;
- The situation on capital markets of Georgia (stock and bond markets) - as an indicator of economic growth and an alternative source of financing;
- Possible benefits of non-bank financing, including for clean energy projects and the SME sector (e.g., small hydro, energy efficiency);
- The role of government in supporting capital market development;
- The role of the international community (donors, IFIs, international organization) to support Georgia's efforts to develop capital markets

Georgia – Recent level of development

To illustrate the wide gap between the developed economy and the weak one, let us compare the current level of per capita GDP of Switzerland, Hungary, Poland to Georgian one (source: <https://tradingeconomics.com/switzerland/gdp-per-capita>; <https://tradingeconomics.com/poland/gdp-per-capita>; <https://tradingeconomics.com/hungary/gdp-per-capita>; <https://tradingeconomics.com/georgia/gdp-per-capita>);

- The Gross Domestic Product per capita in Switzerland was last recorded at 76667.44 US dollars in 2017. The GDP per Capita in Switzerland is equivalent to 607 percent of the world's average.
- The Gross Domestic Product per capita in Hungary was last recorded at 15647.85 US dollars in 2017. The GDP per Capita in Hungary is equivalent to 124 percent of the world's average.
- The Gross Domestic Product per capita in Poland was last recorded at 15751.23 US dollars in 2017. The GDP per Capita in Poland is equivalent to 125 percent of the world's average.
- The Gross Domestic Product per capita in Georgia was last recorded at 4290.17 US dollars in 2017). The GDP per Capita in Georgia is equivalent to 34 percent of the world's average.

In summary:

- An average income of middle-income Swiss citizen is more than 1.5 years' (18 months) income of Georgian citizen.
- An average income of middle-income Hungarian/Poland citizen is 3.7 times of income of Georgian citizen (D Aslanishvili (2016) Market Foundation...)

1. Green Economy and Access to Finance in Georgia (Going Beyond the Commercial Banking Sector to Finance Businesses in Georgia)

1.1. Green Bonds – International Practice

Huge efforts and financial resources are needed to ensure sustainable development and achieve climate and environmental objectives. It is estimated that total global investment needs are around USD 5-7 trillion per year. In particular, support of private finance is needed, with public finance serving to leverage such private capital. **(Future we want. 2012. Outcome document of the United Nations Conference)**

As a result of the analysis of the World Economic Forum, it is necessary to invest about \$ 5.7 trillion in the Green Economy every year, from which 5 trillion funding should be directed directly to green infrastructure and business projects, and the remaining 700 billion will be able to manage these projects effectively.

A large number of financial instruments can also be applied by the government to support the scaling-up of green investments. These include, among others;

- instruments that provide direct financing from the budget (at the national and sub-national level), such as equity, grants, soft government loans;
- instruments that mitigate risks (e.g., guarantees, feed-in tariffs);
- instruments that help raise additional private funds (e.g., green bonds) **(Lindenberg, N., 2014)**.

The concept of green bonds was launched almost 10 years ago, by leading development finance organizations such as the World Bank, the IFC and the EIB, together with pioneering investment banks. In little more than a decade, annual green bond issuance has grown from zero to nearly \$170bn.

- In 2019, global issuance is expected to reach a record \$200bn. That growth is impressive — and a measure of investors' eagerness to address the greatest development challenge of our time.
- Yet green bonds remain a small sliver of the \$100tn global bond market.
- In 2016, the Swedish Pension Fund (AP4) allocated 21.8% of its global equity portfolio to low-carbon projects.
- AP4 aims to decarbonize its entire global equity portfolio by 2020.
- Similar initiatives are taking place in other OECD countries as well (e.g., the Portfolio DE carbonization Coalition in the USA embracing 28 institutional investors have pledged to gradually decarbonize a total of USD 600 billion by designing investment portfolios with a smaller climate change impact).
- Currently, Europe is leading the green bond market, with numerous Europe-based mutual funds focusing on green bonds. The EU is in the process of boosting the market for green bonds for infrastructure and SMEs.
- Despite the previous experience of some countries in the region with municipal bonds for water supply and sanitation infrastructure (e.g., Ukraine, Kazakhstan) none of the EaP countries and Central Asia seems to have issued green bonds so far to finance low-carbon investments.
- However, Ukraine is considering the creation of a green bond market and have prepared "Green Bond Guidelines: Roadmap for Ukraine." The introduction of green bonds is also being considered in Kazakhstan.

In the majority of developed countries, many specialized financial institutions that support green investment and support of energy-efficient projects in developing countries, including Georgia, have been created to support green projects. One of the examples is the European "Green Growth Fund," which implements energy in the energy industry and reduces greenhouse gas emissions in up to 20 developing economies.

The foundation was founded in Luxembourg in 2009 by the Development Bank of Germany and the European Investment Bank, which has financial support from other leading international financial institutions such as the Austrian Development Bank, the European Bank for Reconstruction and Development Bank, the International Finance Corporation, the Dutch Development Bank, etc.

The EU funded the new multinational program in the context of the Eastern Partnership (EU for Environment), which was implemented in Georgia in April 2019.

The EU4ENVRM program aims at helping EU partner countries to maintain and utilize their natural capital to boost the ecological well-being of the population and use new opportunities for development. For instance, enterprises (particularly small and medium sizes) will receive further assistance in terms of saving energy, water, and materials: leading international experts will consult environmental management.

This new program will support Georgia's efforts to improve the challenges in the development of green economy development. For all 6 countries of the Eastern Partnership, this program has a total of 20 million euros. The results of the work carried out by the EU and local institutions are that within the 2019 exhibition Georgian companies have received more than 600 000 Euros order from international buyers.

1.2. Links Between Economic Growth, Green Growth (e.g., Clean Energy), High Living Standards and Capital Markets

“Green” economy

The Rio Conference in June 2012 reflected a trend that focuses on the economic system. Term "green" economy was first used in 2013. The concept of the green economy is transferred in the document of Rio de Janeiro conference dedicated to the sustainable development "future we want." As United Nations Environment Program (UNEP) defines "green" Economy is an economy that provides growth of people's well-being in the long term and reduces inequalities in order to enable future generations to avoid environmental and its impoverishment risks.

The main focus in the definition of the growth of people's welfare, because nature conservation, protection, and in some cases, improvement by itself serves to increase people's well-being. To be more specific a "green" economy means ecological needs' that have been improving the social and economic situation of people through the rational use of resources, the preservation of the process of nature reproduction, ensuring the safety of living organisms and the growth of production.

"Green" economy goals also serve to provide resources for the future, because non-renewable, exhausted resources will be replaced by renewable, environmentally friendly resources. Although the problem of providing resources in the future is much huger and global. The main sectors of the green economy are:

- Renewable energy (solar, wind, geothermal, marine, including waves, biogas and heat energy);
- Green buildings (green modifiers, green products, and materials);
- Clean Transport (Alternative Fuel, Public Transport, Hybrid, and Electric Vehicles);
- Water management (water and rain treatment systems, internal water landscape, water usage);
- Waste management (utilization, municipal waste, use of materials, soil fertility improvement, cleaning);
- Land management (organic agriculture, urban forests, and parks, forest development)

"Green" Economy in Georgia

"Georgia-EU Association Agreement" focuses on sustainable development and green economy. In particular, Article 301 of the Agreement states that "the Parties will develop and strengthen cooperation on environmental issues, thus contributing to sustainable development and long-term goals of the green economy.

Tbilisi City Hall is particularly active in the direction of a “green economy “that developed the Environmental Strategy on 2015-2020 and Green City Action Plan for 2017-2030.

According to the 2018 Global Green Economy Index (GGEI), Georgia is taking an intermediate position among world countries. On the other hand, according to the Environmental Performance Index (EPI), Georgia meets only in the second half of the world, but with improved indicators. Georgia is rich in natural resources and has the potential for rapid development.

The richness of Georgia has the potential for rapid development of natural resources. There are certain ways for developing countries to achieve global green growth. In many countries, the green growth is understood as an inclusive economic development, which envisages the development and maintenance of environmental and social values.

According to the data of 2018, Georgia occupies the 44th place among 130 countries (0,5183). And the first five looks as follows:

- Sweden 0.7608
- Switzerland 0.7594
- Iceland 0.7129
- Norway 0.7031
- Finland 0.6997

The last places were distributed: Guinea-Bissau, Bosnia-Herzegovina, Benin, Haiti, Bahrain.

According to the data of 2018, Georgia ranked 94th in the ecological efficiency rating among 180 countries compared to 2016 (111th place), improved by 17 points. In total, Georgia received 55.69 points from 100 points (2018). Among the neighbors is the best situation in Russia - 63.79 points (52nd place), Azerbaijan - 62.33 points (59th place), Armenia - 62,07 points (63rd place). It is noteworthy that in 2016, this situation worsened in Turkey (108) and Ukraine (109th place).

1.3 Green Tourism as an Important Component of the Transition to a Green Economy and Economic Growth

In the mid-2000 the tourism industry accounted for 5% of global GDP and provided about 8% of total employment. This industry ranked fourth in world exports (after the fuel, chemical, and automotive industries). Since tourism is playing an important role in the economy, a green tourism is a considerable component of the transition to a green economy. Thus, all types of tourism should become green and sustainable, namely:

- make optimal use of environmental resources, which are a key element for the development of tourism, support key environmental processes and promote the conservation of natural resources and biodiversity;
- respect the sociocultural identification of local communities, help preserve their cultural heritage and traditional values;
- to ensure sustainable long-term economic activities that provide socioeconomic equitable benefits for all parties involved, including tourist satisfaction, stable employment, and income-generating opportunities, and social services to host communities.

2. Georgian Non – Traditional Funding (Capital Market in Georgia)

What is the present and the future for the stock and debt capital market in Georgia?

Here we have studied possible financial vehicles that go beyond traditional sources of private capital offered by commercial banks.

2.1 Georgian Capital Market – On-Going Trends and Development

Problem Statement

The mission of the research proposal is to find out the real solution to rapidly developing countries like Georgia based on modern capital market tools. Economic progress and improving living standards of the population depends largely on the provision of high economic growth. That issue itself heavily depends on energy sources and mostly on green sources.

To attract capital into green energy objects, it is obligatory to have a reliable and strong market foundation and its tools. One of the real levers and the most acceptable and practical forms of investment are to invest in equities

through the stock market. It is clear for the developed world how important the organized stock market is. This includes Western Europe, USA, Canada, Japan, China and other countries with powerful stock industries such as the New York Stock Exchange; Euronext; NASDAQ OMX; the London Stock Exchange and many others.

The mediation business or brokerage/investment firms include Merrill Lynch; Morgan Stanley; Goldman Sachs; J.P. Morgan; Barclays Capital and many other investment banks.

Georgian corporate bonds are eligible in Clearstream from September 2018. Clearstream Banking S.A. started offering settlement, custody, and asset servicing for selected Georgian corporate bonds, which is in addition to the securities issued by the Government of Georgia and international financial institutions (the "IFIs"). By offering new services in Georgia, Clearstream further enhances the access to the Georgian capital market for international investors and is the sole international central securities depository (the "ICSD") to offer such services. Non-resident corporate, non-resident individual and resident individual holders of Georgian listed corporate bonds issued prior to 2023 are exempt from capital gain and interest income (withholding) taxes.

MORE THAN 2 BILLION GEL SUCCESSFUL PLACEMENTS OF IPO DONE in Georgia during the last five years:

- FMO (Nederlandse Financierings-Maatschappij voor Ontwikkelingslanden N.V)
- Black Sea Trade and Development Bank
- Bank of Georgia
- Liberty Bank
- M2 Real Estate
- TBC BANK
- EBRD bonds
- ADB bonds
- Georgian Leasing Company
- Nikora
- Zedazeni
- EVEX
- GWP (Georgian Water and Power)
- Lisi Lake
- Teliani Wine
- Silknet
- Georgian Leasing Company
- Microfinance Organisation Crystal

(source: www.gse.ge)

June 28, 2019, Tbilisi, Georgia: TBC Capital has listed the largest Eurobond issue on the Georgian Stock Exchange. TBC Bank has successfully priced a debut US\$300 million 5-year 5.75% (6% yield to maturity) senior unsecured notes issue (the "Notes").

July 12, 2019 - The Asian Development Bank (ADB) raised 60 million GEL (about \$21m/€18.70m) from two new issues of local currency bonds. The proceeds of the bond issues will be on-lent to Credo Bank to launch new products including home improvement and mortgage loans to lower-income households in rural areas and on the outskirts of the Georgian capital, Tbilisi.

TEGETA MOTORS LTD - On May 22, 2019, **GEL 30 million** worth of **3-year** bonds issued by the Tegeta Motors LTD have been admitted to the category A listing of the Georgian Stock Exchange.

Research has ascertained that Georgia faces the problem between the two basic means of attracting monetary resources –Commercial Bank lending/loans and the stock market. In financially successful and developed countries, these two mechanisms--bank loans and the stock market—are designed to attract money and create a mutually beneficial synergy. In Georgia, there is only one mechanism to attract money resources –the bank loan.

In general, the Georgian commercial banking system tries its utmost to prevent the use of the second mechanism, the stock market, since it is considered the main competitor. The analysis of the structure of owners of Georgian Stock Exchange (source: securities registrar JSC Kavkasreestri – www.kavkasreestri.ge) shows that 58% of shares of the stock exchange is in the hands of its competitor – Georgian commercial banks/holdings. ((D Aslanishvili (2016) Market Foundation...))

There is another stock exchange - Tbilisi Stock Exchange, where owners are just commercial banks/holdings and Georgian Stock Exchange as minority shareholder itself (fully under control of Commercial Banks/holdings).

It means that Georgian commercial banks will not allow the development of their competitor—the stock market—as it threatens their own preferential and successful financial position.

According to this analysis, Commercial banking and Stock Market have one mega regulator – the National Bank of Georgia. It should be noted, that an essential attribute of the stock market – the National Securities Commission of Georgia (NSCG)– was abolished. The power of the NSCG was transferred to the regulator of Georgian commercial banks and lobbyist of their interests - the National Bank of Georgia.

Simultaneously, very tough policies were enacted against non-commercial banking structures - brokerage firms, registrar companies, and market participants. As a result—there are practically no non-commercial banking funding ability to attract finance in Georgia.

Fixation rule - unfortunately, there is no public trades and market price on the Stock Exchange. Securities admitted to the stock exchange can be transferred by the simple inscription on paper, without any auction or trading – it is enough simply to sign the paper document. (D Aslanishvili (2016) Market Foundation...)

As the analysis shows, the management of joint-stock companies (non-commercial banks) gradually lost any interest in equity trading in an open and transparent environment, once the law didn't require it. As the results – there is no de facto market price on any stock on Georgian Stock Exchange.

- BROKERAGE FIRMS
- Galt & Taggart JSC
- Caucasus Capital Group JSC
- Silk Road Bank JSC
- Heritage Securities JSC
- TBC Capital Ltd
- Cartu Broker LTD

(source: www.gse.ge)

Is there ANY real positive trend? – STOCK MARKET

In 2013, the country's stock exchange turnover amounted to GEL 530,491 or 338-fold less compared to 2007

In the period from January 1, 2014 – July 14, 2019

Number of Trades - 667

Volume - 32,666,230

Total Value (GEL) - 2,770,069.42

(SOURCE: www.gse.ge)

At an average per year – 461,678 Georgian Lari turnover – Approximately all trades go on Banking stocks and affiliated companies

Is there ANY real positive trend? – BOND MARKET

In the period from January 1, 2014 – July 14, 2019:

Number of Trades - 140
Volume - 13,243
Total Value (USD) - 13,810,688.40

At an average per year – 2,301,781 USD turnover – Approximately all trades go on Banking Bonds and affiliated companies

2.2. So, Where is the Turnover and Market?

GRAY MARKET (OTC MARKET)

In the period from January 1, 2014 – July 14, 2019:

Number of Trades - 2,319
Volume - 6,031,596,962
Total Value (GEL) - 2,323,956,196.85

At an average per year – 38,732,603 GEL turnover – Mostly turnover goes on Banking Stocks/Bonds and affiliated companies

Presently, Georgia's stock exchange has lost its key function as a foundation for price formation in the stock market. Therefore, any trading it shares or other securities publicly has become senseless.

Fixation of Deals out of Market (gray Market, OTC) represents the alone way of funds attraction. As practice shows, Commercial Banks distribute the adopted offer of stocks/bonds inside the banking/holding structure for their own clients and submit the fulfilled IPO to Stock Exchange. Stock Exchange act as Notary, but not as the Stock Exchange.

Any suggestion on legislative amendments as a solution in order to save and develop independently from Commercial bank's Georgia's stock exchange had been many times stopped and blocked by the Georgian government, National Bank and Commercial Banks, working together to keep the current trend. ((D Aslanishvili (2016) Market Foundation...))

The alone way to get finance in Georgia is to be loyal to Commercial Banks and its affiliated structure(s) and show the readiness to give them access to your company share structure and management to receive funding.

2.3 “The Road to Hell is Paved with Good Intentions”

So the reality is simple:

MANY TALKS OF SECURITIES MARKET, ALTERNATIVE SOURCE OF COMMERCIAL BANK LENDING, IPO AND STOCK MARKET DEVELOPMENT, BUT REALITY IS OPPOSITE.

Georgia needs the REAL Glass Steagal/Dodd–Frank Act in action, not in the paper.

Situation in Summary

- Commercial Banks/Holdings fully control the non-commercial source of funding – "Georgian Stock Exchange"- 58 percent of Stake of GSE and 100 percent control of "Tbilisi Stock Exchange."
- Supervisory Board and Management of Stock Exchange in the hands of Commercial Banks/holdings
- Commercial Banks and its affiliated structure mostly prefer to have IPO and trades OUT OF GEORGIA and its Stock Market (London Stock Exchange)
- Registrars (Transfer Agents) – the most developed are in the hands of Commercial banks/holdings
- Licensed by NBG and GSE Brokerage Companies – almost all in property of Commercial Banks/holdings

- All emissions and successful placements of companies (Bonds/stocks) are done only by Commercial Banks and for their and affiliated companies
- THERE IS NO ALTERNATIVE SOURCES OF FUNDING IN GEORGIA EXCEPT COMMERCIAL BANK LOAN DIRECTLY OR INDIRECTLY (via their “green light” to issue bonds/stocks for Banks of affiliated companies)

SOLUTION

- Georgia needs the REAL Glass Steagal/Dodd–Frank/The Gramm–Leach–Bliley Acts in action, not JUST in the paper.
- We need independent from Commercial Bank/Holdings the Supervisor and Stock Market structure
- Commercial Banks/Holding should be prohibited from Stock Market activity.

CONCLUSION

- Main sources of funding for SME green investments in Georgia are Commercial Banks and affiliated structures;
- Capital market – stock and bond markets in Georgia-is are not developed as an alternative source of funding for any noncommercial banking structure;
- There is a lot of real benefits of non-bank financing, including for clean energy projects and the SME sector (e.g., small hydro, energy efficiency);
- The government can use State Bonds/obligations, its affiliated structures (Partnership fund) to support SME finance in green economy;
- Government of Georgia should intervene and change the “rule of games” on Capital market and to introduce the REAL Glass Steagal/Dodd–Frank/The Gramm–Leach–Bliley Acts in action, not JUST in papers;
- Georgia needs an independent from Commercial Bank/Holdings and National Bank of Georgia the Supervisor and Stock Market structure - to have the Real alternative source of funding;
- Commercial Banks/Holding should be prohibited from Stock Market activity (depositors risk mitigation – international practice);
- The international community (donors, IFIs, international organization) should supervise the REAL implementation of abovementioned steps in Georgian reality to support Georgia's efforts to have the Real developed capital markets, available to finance business.

3. Possible Investments in Clean Energy Projects of Georgia (e.g., Small Hydro, Energy Efficiency)

Georgia has the greatest potential to become an important exporter of electricity received from renewable energy transformation. This gives our country a significant advantage in the entire region. This advantage can be considered as two important aspects:

- Energy independence, which is of paramount importance to maintain political stability in the region,
- Economic benefits, after fully satisfying domestic consumption, the export of electricity to neighboring countries.

The first place among the natural riches of Georgia is the hydro-electrical. There are 26 060 rivers on the territory of Georgia, with a total length of approximately 60 thousand km. The common stock of fresh water of Georgia, comprising 96,5 km³ of glaciers, lakes, and reservoirs of water reserves.

From the total number of rivers, there are about 300 rivers with energy value, the annual total potential capacity of 15 thousand megawatts and average annual energy equivalent to 50 billion kWh. Georgia is a wealthy country with renewable energy resources, but it is a poor source of energy sources.

In 2016, 57.6 thousand terrestrial power plants were produced in Georgia, which is 1.4 million tons of oil equivalent. More than half of this energy was on hydropower resources - 58.3%. 28.2% of the biofuels and waste are still large in the energy produced. The remaining energy sources have a relatively small share of domestic production: coal - 8.7%, crude oil - 2.8%, geothermal -1.5%, gas - 0.4%

Energy consumed in Georgia is 3.15 times higher than the energy required, which is largely due to demand for non-renewable energy resources, which is not available in the country, but traditional energy resources are widely used in a number of fields.

As a result, in 2016, almost one-third of the country's domestic consumption of petroleum products (33.1%) and slightly less natural gas (30.5%).

In the world as well as in Georgia, the role of coal is reduced in the economy (5.8% of consumption). 20.8% of the domestic consumption comes from electricity, the source of which is the renewable energy / unprofitable energy or import of the internal one. Only 0.4% of domestic internal consumption comes from geothermal energy. Over the next 10 years, new electric power capacity is expected to turn Georgia into an important exporter of electricity.

With realistic calculations, electricity consumption in Georgia will increase by 3.5% per annum in the following years. As a result, net exports of 9.9 billion kWh electricity will be expected by 2027, which will be 37.6% of the total electricity generated.

The list of potential projects is drawn up by the Ministry of Energy of Georgia for the potential investors (Order N125 on Approving List of Potential Power Plants in Georgia (available to show). For each project, the average annual output is given. Some assumptions are used to calculate the value added by them (assumptions are taken from potential projects).

- Export tariff - 0,080
- Internal supply tariff - 0,048
- Technical losses and their own consumption - 3%
- Export Share - 80%
- Share of internal supply - 20%

The following assumptions are used:

- Average Annual Production of Each Project Decreases Technical Losses (0.03%);
- The derivative output is divided between export and internal supply (80% -20%);
- The derivatives generated are multiplied by the cost of electric power of Kilowatt and the sum;
- The final added value is divided on macroeconomic indicators to assess its share.
- The macroeconomic indicators used the GDP of 2017 at current prices (15,230 billion USD) and the export indicator of 2017 (2,348 billion USD).

Following the aggregation of the information received at the project level, it is possible to see the general picture, first of all, to project projects according to their status:

- Construction and Licensing Projects (45 projects) - After completion of full exploitation, they will generate a total additional cost of 2.5% of current GDP (2017).
- The second group consists of research projects under construction commitment (22 projects), the potential share of which is 2.2% of the current GDP. These are the projects for which the terms and obligations of construction are determined, but research works are still under way.
- The next group is the projects at the stage of technical and economic research (80 projects); There are expressed interest in these projects by investors, although only research works are underway, after which the terms of their construction may be determined. The total contribution of these projects to GDP is 4.6%.
- The fourth group is potential projects (99 projects), which are only theoretical, and the investor's interest is not expressed. The potential share of potential projects in GDP is 3.2%.
- Renewable energy current and potential projects are determined by several renewable energy sources. As mentioned above, hydropower has a vital role in the Georgian energy sector.
- The total potential contribution of hydro power plants (both ongoing and potential) to the current economy is quite high and 10.2%.

- After hydropower, Georgia is attractive for investors with wind energy, which is 2.0% for wind power plants.
- Interest in the use of solar energy is scarce (0.3%), as well as bio waste recycling.
- Overall, the potential contribution of all four types of projects in the economy is 12.6%, which is quite high.

Obviously, the research is based on certain assumptions, and all project implementation will require tens of years, and with the growth of the current economy, their contribution to economic growth in other equal conditions will be reduced. However, the potential economic benefits of projects are more visible.

References

- Davit Aslanishvili, International Conference on: Cooperation, Development, Exchange in Higher Education: Academic practices and achievements from Emerging Europe, Hungary, Miskolc University, May 7, 2019;
- D Aslanishvili (2016) Market Foundation for Sustainable Economy Growth and Energy Policy (Georgian Case). *Modern Economy*, volume 7, p. 314–319. *Modern Economy*, 2016, 7, 314-319. Published Online March 2016 in SciRes. <http://www.scirp.org/journal/me>, <http://dx.doi.org/10.4236/me.2016.73034>
- Aslanishvili, D. and Omadze, K. (2016) Origins and the Reasons of Monetary Crises in Georgia (1995-2016). *Modern Economy* 7, p. 1232-1250. <http://dx.doi.org/10.4236/me.2016.711119>
- Aslanishvili, David; Muller, Dietrich; Omadze, Kristine, Analyse of the past Industrial Revolutions and possible outcome of the coming new fourth Industrial Revolution (Industry 4.0), Conference: International Scientific-Practical Conference Dedicated to the Foundation of the Institute Innovative Economy and Problems of Its Formation in Post-Communist Countries. Pages: 100-106, Year: 2016
- Aslanishvili, David; Omadze, Kristine, Monetary Crises in Georgia – 1995 – 2016 Source: *Ekonomisti*, Volume: 8, Issue: 1, Pages: 89-108, Published: 2016
- Aslanishvili, David, Ricardo equivalent, the origin of state debt, it's meaning and practical purpose Conference: Modern Tendencies of Development of Economy and Economic Science, Pages: 18-22, Year: 2018
- Aslanishvili, David; Omadze, Kristine, Georgia's external debt structure and the challenges of the current situation Conference: International Scientific Conference Dedicated to the 65th birth anniversary of Professor George Tsereteli Structural and Innovative Problems of Economic Development, Pages: 25-28, Year: 23-24 June, 2017,
- Author(s): Aslanishvili, David; Omadze, Kristine, International Discussions on Bank Credit and Economic Growth Relationship (Expanded Summary), Source: *Ekonomisti*, Issue: 2, Pages: 62-74, Published: 2018
- Aslanishvili, David, Place, and importance of the government securities market in the European Union: recent trends and discussions (Expanded Summary), Source: *International Scientific-Analytical Journal EKONOMISTI*, Issue: 5, Pages: 12-14, Published: 2015
- United Nations Environment Programme and World Tourism Organization (2012). *Tourism in the Green Economy – Background Report*, UNWTO, Madrid. [Electronic resource]: Retrieved from <https://www.e-unwto.org/doi/pdf/10.18111/9789284414529>
- World Wide Fund For Nature (WWF, 2019). Over 80% of marine pollution comes from land-based activities. [Electronic resource]: Retrieved from http://wwf.panda.org/our_work/oceans/problems/pollution/
- Future we want. 2012. Outcome document of the United Nations Conference on Sustainable Development Rio de Janeiro, Brazil, 20–22 June 2012 <https://sustainabledevelopment.un.org/content/documents/733FutureWeWant.pdf>
- Towards Green Growth. 2011. <https://www.oecd.org/greengrowth/48012345.pdf>
- Berger, Roland. 2011. *Green Growth, Green Profit How Green Transformation Boosts Business*. Green Growth, Green Profit. US, New York: Palgrave Macmillan. <https://doi.org/10.1057/9780230303874>.
- Cereceda Rafael, Cuddy Alice. 2018. “9 Out of 10 People Worldwide Breathing Polluted Air.” *Euro News*. <https://www.euronews.com/2018/05/02/9-out-of-10-people-breathing-polluted-air-worldwide>.
- Madhipatla, Kishore, S Venkatesh, D J Christopher, Jeffrey D Stanaway, R S Dhaliwal, LalitDandona, Virendra Singh, et al. 2018. “The Impact of Air Pollution on Deaths, Disease Burden, and Life Expectancy across the States of India: The Global Burden of Disease Study 2017.” *The Lancet Planetary Health* 3 (1): e26–39. [https://doi.org/10.1016/s2542-5196\(18\)30261-4](https://doi.org/10.1016/s2542-5196(18)30261-4).

World Health Organization. 2018. "World Health Organization Releases New Global Air Pollution Data." CCAC Secretariat. <http://ccacoalition.org/en/news/world-health-organization-releases-new-global-air-pollution-data>. <https://www.energy-community.org/>

A strategy for smart, sustainable and inclusive growth" and in 2011 "A resource-efficient Europe – Flagship initiative under the Europe 2020 Strategy"

Geoffrey Heal - THE ECONOMICS OF RENEWABLE ENERGY (2009)

International Energy Agency - World Energy Outlook 2016

Nicholas Apergis, James E. Payne - Renewable energy consumption and economic growth: Evidence from a panel of OECD countries (2010)

OECD (2009), "The Bioeconomy to 2030. Designing a policy agenda"; EU (2012), "Innovating for Sustainable Growth: A Bioeconomy for Europe"; U SA (2012), "National Bioeconomy Blueprint the European Commission's 'Europe 2020' strategy considers developing a smarter and greener Europe essential

Green for Growth Fund. www.ggf.lu

United Nations Framework Convention on Climate Change. www.unfccc.int

World Resources Institute. <http://www.wri.org/our-work/project/climate-finance/climate-finance-and-private-sector>

<https://tradingeconomics.com/switzerland/gdp-per-capita>

<https://tradingeconomics.com/poland/gdp-per-capita>

<https://tradingeconomics.com/hungary/gdp-per-capita>

<https://tradingeconomics.com/georgia/gdp-per-capita>

www.geostat.ge

Modeling Trip Count Data with Excess Zeros for U.S. Saltwater Recreational Fishing

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Abstract

Count data, such as recreational fishing trips taken by anglers, is increasingly common in recreational fishing demand analysis. Because of the non-negative integer nature of the recreational fishing trip data, some over-dispersion problems, and truncation of the data at zero trips, count data models are more appropriate for estimating the recreational fishing demand function. This study employed count data models to analyze U.S. saltwater recreational fishing trips with excess zeros, using a cross-sectional data extracted from the 2011 National Survey of Fishing, Hunting, and Wildlife Associated Recreation. Using Akaike Information Criterion and Bayesian Information Criterion, the zero-truncated negative binomial model was selected among other count data models better fitted in this count data for this study. Empirical results of this study provide insight into the determinants of saltwater recreational fishing trips, which can be used in analyzing the social and economic values of saltwater recreational fisheries management.

Keywords: Count Data, Excess Zeros, Hurdle Poisson Model, Negative Binomial Model, Over-Dispersion, Poisson Model, Saltwater Recreational Fishing Trips, Zero-Inflated Models, Zero-Truncated Models

1. Introduction

Saltwater recreational fishing is a popular pastime across the nation that generates significant economic impacts both to local economies and to the nation. According to the report of the 2011 National Survey of Fishing, Hunting and Wildlife-Associate Recreation, saltwater recreational fishing attracted 8.9 million anglers who took 86.2 million trips in 99 million days. A total amount of \$10.3 billion was spent on saltwater recreational fishing trips and equipment during that year. Expenditure on trip-related cost totaling \$7.3 billion was the highest, Accommodation and food cost \$2.4 billion, and transportation cost was \$1.5 billion. Other miscellaneous cost such as guide fees, licenses, permits, bait, membership dues and equipment rental were \$3.4 billion (U.S. Fish and Wildlife Service, 2014).

Saltwater recreational fishing is usually done with equipment such as rod, reel, bait, hook and line. It was estimated that anglers on equipment for saltwater recreational fishing spent a total of \$2.9 billion. A detailed breakdown of this cost comprised of \$1.4 billion on main fishing equipment (rod, reel, hook and line), \$1.3 billion for special equipment (boats, travel vans etc.) and \$217 million for auxiliary equipment (binoculars, camping equipment etc.) (U.S. Fish and Wildlife Service, 2014).

In 2011, saltwater recreational anglers spent an average of 11 days fishing and enjoyed an average of 10 trips. Saltwater recreational anglers spent an average of \$824 per angler on trip related costs which was the highest average expenditure cost compared to average expenditure of freshwater recreational anglers and great lake recreational anglers, an average of \$74 per day (U.S. Fish and Wildlife Service, 2014).

The most commonly sought fish among saltwater recreational anglers are striped bass, flatfish, redfish, sea trout, bluefish, salmon and mackerel. According to the 2011 National Survey of Fishing, Hunting and Wildlife-Associate Recreation, 2.1 million saltwater recreational anglers fished for striped bass for 18 million days, 2 million anglers fished for flatfish for 22 million days. 1.5 million Anglers fished for redfish for 21 million days and 1.1 million saltwater recreational anglers fished for 15 million days (U.S. Fish and Wildlife Service, 2014).

A comparison of the 2001, 2006 and 2011 National Survey of Fishing, Hunting and Wildlife-Associate Recreation indicated the total number of saltwater recreational anglers decreased significantly from 9.5 million in 2001 to 7.7 million in 2006 and then increased to 8.9 million in 2011. Total expenditures on saltwater recreational fishing trip-related costs and equipment increased slightly from \$8.4 billion in 2001 to \$8.9 billion in 2006, and also increased to \$10.3 billion from 2006 to 2011 (U.S. Fish and Wildlife Service, 2002, 2007, 2014).

Many studies neglect how best to model saltwater recreational fishing trips and get meaningful insights into the behavior of saltwater recreational anglers that affect their saltwater recreational fishing behavior and participation. This engender the reason for this study so as to provide guidelines and create awareness for the proper use of count data models that will lead to more accurate results and get a better understanding of saltwater recreational fishing trips. It may also contribute to a better understanding of current and future angler behavior of saltwater recreational fishing participation and consumption.

2. Count Data Models

In statistics, count data (i.e., saltwater recreational fishing trips) is a statistical data type, a type of data in which the observations can take only the non-negative integer values, and where these integers arise from counting rather than ranking. Particularly in the econometric literature, there has been considerable interest in models for count data that allow for excess zeros in the national survey, such as the 2011 National Survey of Fishing, Hunting and Wildlife-Associate Recreation.

When the statistical requirements are met, the standard ordinary least squares (OLS) technique could be used to estimate the saltwater recreational fishing demand function. Because of the non-negative integer nature of the recreational fishing trip data, some over-dispersion problems, and truncation of the data at zero trips, the standard OLS estimator may be inappropriate, but count data models are more appropriate for estimating the saltwater recreational fishing trips.

Count data modeling techniques have become important tools in empirical studies of economic research and their applicability continues to grow in various areas of economics, e.g., health economics (i.e., the number of doctor visits), labor economics (i.e., labor mobility), financial economics (i.e., the number of reported claims, the number of bank failures), industrial organization (i.e., entry and exit in industries), transportation (i.e., the number of car accidents), and tourism and outdoor recreation (i.e., the number of fishing trips).

The count data models considered in this study including Poisson model, negative binomial model, zero-inflated Poisson (ZIP) model, zero-inflated negative binomial (ZINB) model, zero-truncated Poisson (ZTP) model, zero-truncated negative binomial (ZTNB) model, and hurdle Poisson Model. These count data models were also

compared against each other using Akaike Information Criterion (AIC) and Bayesian Information Criterion (BIC).

2.1 Poisson Model

The Poisson model is based on the Poisson distribution, was discovered by Simon Denis Poisson and published together with his probability theory in 1838 in his work "Research on the Probability of Judgments in Criminal and Civil Matters" (Good, 1986). In probability theory and statistics, the Poisson distribution is a discrete probability distribution that expresses the probability of a number of events occurring in a fixed period of time.

Poisson distribution is a probability distribution for count data that satisfies the discrete probability distribution (Greene, 2008) represented by,

$$P(Y = y | \lambda) = \frac{e^{-\lambda} \lambda^y}{y!}$$

where Y is a random variable having Poisson distribution and λ is the mean of the distribution. The Poisson regression model is similar to regular multiple regression model except that the dependent variable, y , is an observed count from the Poisson distribution. The most common formulation for λ is the log-linear model,

$$\ln(\lambda) = \beta_0 + \beta_1 x_1 + \beta_2 x_2 + \dots + \beta_k x_k = \mathbf{x}^T \boldsymbol{\beta} .$$

The parameter λ is both the mean and variance of the random response variable Y and depends on a set of k explanatory variables, x_1, x_2, \dots, x_k , in vector \mathbf{x} . A sample of observations can be considered as dependent variable vector $\mathbf{Y} = (Y_1, Y_2, \dots, Y_n)$ that each Y_i is distributed independent Poisson (λ_i) where the expected count of Y_i is $E(Y) = \lambda$, i.e.,

$$\lambda = e^{\mathbf{x}^T \boldsymbol{\beta}}, \text{ with } E(Y | \mathbf{x}) = \text{Var}(Y | \mathbf{x}) = e^{\mathbf{x}^T \boldsymbol{\beta}}.$$

The Poisson model typically is assumed for count data, but when there are many zeros in the response variable, the mean is not equal to the variance value of the dependent variable, because of over-dispersion, the negative binomial model is suggested instead of the Poisson model.

2.2 Negative Binomial (NB) Model

The negative binomial distribution, like the Poisson distribution, describes the probabilities of the occurrence of whole numbers greater than or equal to zero. Unlike the Poisson distribution, the variance and the mean are not equivalent. This suggests it might serve as a useful approximation for modeling count data with variability different from its mean and it enables the model to have greater flexibility in modeling the relationship between the conditional variance and the conditional mean compared to the Poisson model. The negative binomial model (Greene, 2008) can be expressed as,

$$P(Y = y | \lambda, \alpha) = \frac{\Gamma(y + \alpha^{-1})}{\Gamma(y + 1)\Gamma(\alpha^{-1})} \left(\frac{1}{1 + \alpha\lambda}\right)^{\alpha^{-1}} \left(\frac{\alpha\lambda}{1 + \alpha\lambda}\right)^y .$$

where $\lambda = e^{\mathbf{x}^T \boldsymbol{\beta}}$ and α is the dispersion parameter. As the value of dispersion parameter increases, the variance converges to the same value as the mean, and the negative binomial distribution turns into a Poisson distribution. The conditional mean and variance of the negative binomial distribution are,

$$E(Y | \mathbf{x}) = \lambda = e^{\mathbf{x}^T \boldsymbol{\beta}} \text{ and } \text{Var}(Y | \mathbf{x}) = \lambda(1 + \alpha\lambda) > E(Y | \mathbf{x}).$$

The Poisson distribution has only one parameter (λ), whereas the negative binomial distribution has two parameters (λ and α). Due to this property, the negative binomial model is more flexible than the Poisson model. Moreover, the Poisson model should have the same mean and variance value and this is not what happens in the real data.

Thus, the negative binomial model can be used instead of the Poisson model when the count data under consideration is over-dispersed.

The other problem with the Poisson and negative binomial models having far more zeros than expected by the distribution assumptions of the Poisson and negative binomial models result in incorrect parameter estimates (Hardin and Hilbe, 2012). Using the zero-inflated models, such as the zero-inflated Poisson model (Lambert, 1992) or the zero-inflated negative binomial model (Hall, 2000), are proposed as a solution for this problem (Loeys et al., 2012). The zero-Inflated models attempt to account for excess zeros, i.e., there is thought to be two kinds of zeros, “true zeros” and “excess zeros”. Therefore, the zero-Inflated models estimate two equations, one for the count data and one for the excess zeros.

2.3 Zero-Inflated Poisson (ZIP) Model

The zero-inflated Poisson model (ZIP) is used to model count data that has an excess of zero counts. Mullahy (1986), Heilbron (1994) and Lambert (1992) pioneered the use of regression model based on the ZIP distribution. Further, theory suggests that the excess zeros are generated by a separate process from the count values and that the excess zeros can be modeled independently. Thus, the ZIP model has two parts, a Poisson count data model and a Logit model for predicting excess zeros (Lambert, 1992). In general, the random variable Y takes on 0 with probability ω and Y takes on a value from Poisson (λ) with probability $(1 - \omega)$, the probability mass function of the random variable Y representing the ZIP model can be expressed as:

$$P(Y = y | \lambda) = \begin{cases} \omega + (1-\omega)e^{-\lambda} & , \quad \text{if } y = 0, \\ (1-\omega) \left(\frac{e^{-\lambda} \lambda^y}{y!} \right) & , \quad \text{if } y > 0 . \end{cases}$$

The mean and variance of the ZIP model are:

$$E(Y | \mathbf{x}) = \lambda(1 - \omega) \text{ and } \text{Var}(Y | \mathbf{x}) = \lambda(1 - \omega)(1 + \omega\lambda).$$

If the variance displayed above is greater than the mean, it indicates over-dispersion and the ZIP model is not appropriate in such instance. In such cases the zero-inflated negative binomial model is fitted. Moreover, the non-zero observations may be over-dispersed in relation to the Poisson distribution, biasing parameter estimates and underestimating standard errors. In such a circumstance, the zero-inflated negative binomial model better accounts for these characteristics compared to the ZIP model.

2.4 Zero-Inflated Negative Binomial (ZINB) Model

The zero-inflated negative binomial (ZINB) model has been used for modeling both zero-inflation and over-dispersion in count data. Furthermore, theory suggests that the excess zeros are generated by a separate process from the count values and that the excess zeros can be modeled independently. Greene (1994) gives details of analogous ZINB model. The ZINB distribution is a mixture of a binary distribution that is degenerate at zero and an ordinary negative binomial distribution (Hall, 2000).

With probability ω , the response of the first process is a zero count, and with probability of $(1-\omega)$, the response of the second process is governed by a negative binomial with mean λ and can also generate zero counts. The overall probability of zero counts is the combined probability of zeros from the two processes. Thus, the ZINB model for the response y can be written as:

$$P(Y = y | \lambda, \alpha) = \begin{cases} \omega + (1-\omega) \left(\frac{1}{1 + \alpha\lambda} \right)^{\alpha^{-1}} & , \quad \text{if } y = 0, \\ (1-\omega) \frac{\Gamma(y + \alpha^{-1})}{\Gamma(y + 1)\Gamma(\alpha^{-1})} \left(\frac{1}{1 + \alpha\lambda} \right)^{\alpha^{-1}} \left(\frac{\alpha\lambda}{1 + \alpha\lambda} \right)^y & , \quad \text{if } y > 0 . \end{cases}$$

where $\alpha (\geq 0)$ is a dispersion parameter that is assumed not to be depend on covariates. The mean and variance of the ZINB model are:

$$E(Y | \mathbf{x}) = \lambda(1 - \omega) \text{ and } \text{Var}(Y | \mathbf{x}) = \lambda(1 - \omega)(1 + \lambda(\omega + \alpha)).$$

In many situations, observed samples may be considered as zero truncated. These kinds of data should be analyzed by a zero-truncated distribution, an alternative distribution to the count data with zero counts cannot be observed. The zero-truncated distribution is a certain distribution having support the set of positive integers. This distribution is applicable for the situations when the data to be modeled originate from a mechanism that generates data excluding zero counts, such as the zero-truncated Poisson distribution (David and Johnson, 1952) and the zero-truncated negative binomial distribution (Sampford, 1955).

2.5 Zero-Truncated Poisson (ZTP) Model

In probability theory, the zero-truncated Poisson (ZTP) distribution is a certain discrete probability distribution whose support is the set of positive integers. This distribution is also known as the conditional Poisson distribution (Cohen, 1960) or the positive Poisson distribution (Singh, 1978). It is the conditional probability distribution of a Poisson distributed random variable, given that the value of the random variable is not zero. Thus, it is impossible for a ZTP random variable to be zero.

Since the ZTP is a truncated distribution with the truncation stipulated as $y > 0$, one can derive the probability mass function from a standard Poisson distribution as follows:

$$P(Y = y | Y > 0) = \frac{e^{-\lambda} \lambda^y}{(1 - e^{-\lambda}) y!}.$$

The mean and variance of the ZTP model are:

$$E(Y | Y > 0) = \frac{\lambda}{1 - e^{-\lambda}}$$

and

$$\text{Var}(Y | Y > 0) = \frac{\lambda(1 + \lambda)}{1 - e^{-\lambda}} - \frac{\lambda^2}{(1 - e^{-\lambda})^2}.$$

2.6 Zero-Truncated Negative Binomial (ZTNB) Model

Given the importance of accounting for over-dispersion in truncated count context, the zero-truncated negative binomial (ZTNB) model is the appropriate model for the analysis of such count data. The ZTNB model is used to model count data for which the value zero cannot occur and for which over-dispersion exists. A detailed discussion of the ZTNB model can be found in Gurmú (1991) and Grogger and Carson (1991). The ZTNB model for the response y can be written as:

$$P(Y = y | Y > 0) = \frac{\Gamma(y + \alpha^{-1})}{\Gamma(\alpha^{-1}) y!} \left(\frac{\alpha \lambda}{1 + \alpha \lambda} \right)^y \frac{(1 + \alpha \lambda)^{-\alpha^{-1}}}{(1 - (1 + \alpha \lambda))^{-\alpha^{-1}}}.$$

The conditional mean and conditional variance of the ZTNB model are:

$$E(Y | Y > 0) = \frac{\lambda}{1 - (1 + \alpha \lambda)^{-\alpha^{-1}}}$$

and

$$\text{Var}(Y | Y > 0) = \frac{\lambda}{1 - (1 + \alpha\lambda)^{-\alpha^{-1}}} \frac{1 + \alpha\lambda - \lambda(1 + \alpha\lambda)^{-\alpha^{-1}}}{1 - (1 + \alpha\lambda)^{-\alpha^{-1}}}.$$

2.7 Hurdle Poisson Model

A hurdle model (Mullahy, 1986), or two-part model (Heilbron, 1994), is a modified count model in which there are two processes, one generating the zeros and one generating the positive values. The two models are not constrained to be the same. The concept underlying the hurdle model is that a binomial probability model governs the binary outcome of whether a count variable has a zero or a positive value (Shonkwiler and Shaw, 1996). If the value is positive, the hurdle is crossed, and the conditional distribution of the positive values is governed by a zero-truncated count model.

The differences between the hurdle models and the zero-inflated models are that zero and non-zero counts are separately modeling in the hurdle models (Loeys et al., 2012), and also hurdle models assumes that all zero counts are true zeros (Potts and Elith, 2006). The hurdle Poisson model with count variable y has the distribution as:

$$P(Y = y | \lambda, \omega) = \begin{cases} \omega & , \text{ if } y = 0, \\ \frac{(1-\omega)e^{-\lambda}\lambda^y}{(1-e^{-\lambda})y!} & , \text{ if } y > 0. \end{cases}$$

If $y > 0$ means the hurdle is crossed then the conditional distribution of the non-zero values is managed by a zero truncated model, λ is the mean of the Poisson distribution, and ω is the probability value of the zero counts. For estimating the parameter values, maximum likelihood method is used. The hurdle Poisson model is nothing but a re-parameterization of the ZIP model. Although for both models the parameters are modeled in the regression framework, hurdle Poisson model is not the same as the ZIP model.

3. Data

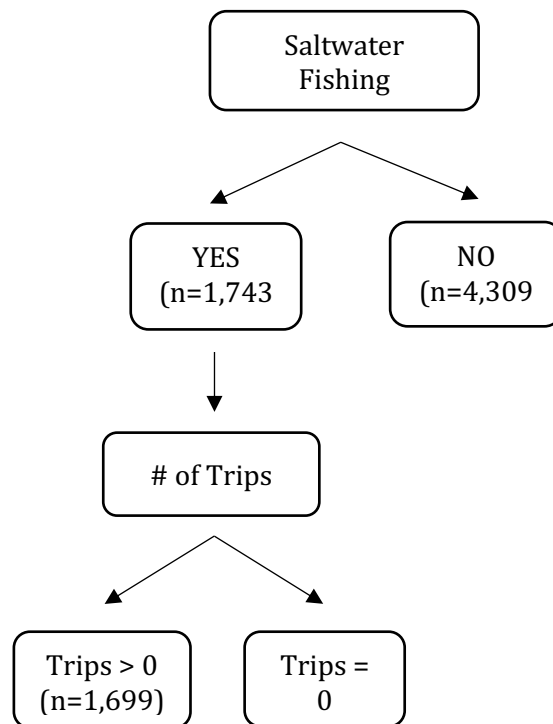
Data used for this study was extracted from the 2011 National Survey of Fishing, Hunting, and Wildlife-Associated Recreation (U.S. Fish and Wildlife Service, 2014), which is developed by the U.S. Fish and Wildlife Service every five years. This type of survey started in 1955 and the 2011 survey is the 12th of its kind. It is one of the comprehensive and most reliable recreation surveys in the United States. Basically, the survey aims to collect information on the frequency of participation and expenditure on fishing activities in the United States as well as the number of anglers, hunters and wildlife watchers.

Data was collected for the survey by the U.S Census Bureau in two phases namely the screening phase and three-detailed wave process. In the screening phase, the U.S. Census Bureau interviewed a sample of 48,600 households in the United States to identify respondents who had participated in wildlife-related activities in the year of 2011 to gather information on fishing, hunting, and wildlife watching participation, expenditures, and socioeconomic characteristics of respondents. Mostly, one adult household member provided information for all members.

The second phase of the survey consisted of three detailed interviews. Interviews were conducted with people who were at least 16 years who were chosen from the screening phase. According to the report from the 2011 National Survey of Fishing, Hunting and Wildlife-Associated Recreation, most of the respondents were interviewed by phone while in-person interviews was used for those who couldn't be reached on phones. From this initial phase, 6,052 saltwater recreational anglers were selected for a detailed interview about their participation and expenditures associated with saltwater recreational fishing activities in the United States in 2011.

From this initial phase, 6,052 saltwater recreational anglers were selected for a detailed interview about their participation and expenditures associated with saltwater recreational fishing activities in the United States in 2011, based on the question "Respondent fished in saltwater in the United States in 2011?" and "Total saltwater fishing trips respondent took in the United States in 2011?" (Figure 1).

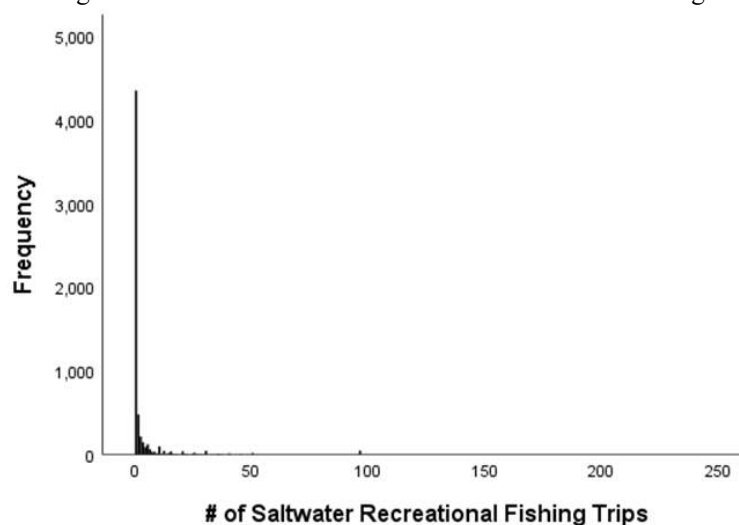
Figure 1. U.S. Saltwater Recreational Fishing Trips



Source: 2011 National Survey of Fishing, Hunting, and Wildlife-Associated Recreation

Figure 2 also shows a sharp decreasing trend of the distribution with most of the count data being zero. Average number of saltwater recreational fishing trips was 3.07 for the total sample ($n = 6,052$), but average number of saltwater recreational fishing trips was 10.94 for the sample with non-zero cases ($n = 1,699$). About 72% of respondents reported zero trip ($n = 4,353$). It could have the possibility of over-dispersion consideration in this count data. In addition, the high percentage of zeros seen from the histogram suggests an issue of excess zeros and/or a zero inflated data.

Figure 2. Distribution of U.S. Saltwater Recreational Fishing Trips



Source: 2011 National Survey of Fishing, Hunting, and Wildlife-Associated Recreation

4. Empirical Results

An analysis of recreational saltwater fishing trips can be beneficial from the use of appropriate econometric analysis and measurement to comprehend the full value of this type of saltwater recreational fishing activities within the framework of saltwater recreational fisheries management and policy. In particular, analyzing saltwater recreational fishing trips in the framework of an angler who allocates the constrained budget to maximize utility improves a better understanding of the tradeoffs made in this process.

According to consumer demand theory, an angler attempts to maximize his/her utility from saltwater recreational fishing activities subject to his/her budget constraint. Thus, the maximization of the utility function for saltwater recreational fishing activities can be stated as follows:

$$\text{Max}_{y,z} u = u(y, z | a, s) \quad \text{subject to} \quad py + qz = I$$

where $u(\cdot)$ represents the utility function which is assumed to be continuous, increasing, and quasi-concave, y is quantity demanded of saltwater recreational fishing activities, i.e. the number of saltwater recreational fishing trips to the fishing site, z represents the quantity of all other goods consumed, a is the vector of exogenous attributes of the activity or site, s is the vector of socioeconomic characteristics, p is travel cost of saltwater recreational fishing trips, q is the vector of prices of other goods and services, and I is income.

Then the angler's demand function for saltwater recreational fishing activities can be expressed in terms of saltwater recreational fishing trips (Zawacki et al., 2000) as follows:

$$Y = f(x, \beta, \varepsilon)$$

where Y is the vector of the dependent variable representing the number of saltwater recreational fishing trips to the fishing site, x is the vector of independent variables such as travel cost, travel time, socioeconomic factors, and trip characteristics, β is a vector of parameters including, but not limited to, the estimated coefficients of the independent variables, and ε is the vector of the random error term assumed to be independent and identically distributed.

This study employed the count data models to analyze U.S. saltwater recreational fishing trips with excess zeros, using a cross-sectional data extracted from the 2011 National Survey of Fishing, Hunting, and Wildlife Associated Recreation (U.S. Fish and Wildlife Service, 2014). The choice of explanatory variables selected for this empirical analysis was based on the conceptual model of saltwater recreational fishing activities, integrating anglers and fisheries resources and habitats. This conceptual model demonstrates the context of the human-fisheries interaction and provides a framework that identifies utility maximization as the ultimate objective for the anglers in saltwater recreational fishing activities in terms of their participation decisions.

For this study, the dependent variable is the number of saltwater recreational fishing trips, and the explanatory variables include age, household income, male, graduate or professional degree, minority, living in the urban settings, salmon, striped bass, bluefish, flatfish, redfish, sea trout, mackerel, marlin, tuna, mahi-mahi, and shellfish. Description and Descriptive statistics of all parameters used in this empirical analysis are presented in Table 1.

Table 1. Parameter Description and Descriptive Statistics of Count Data Models

Parameter	Description	Mean	Standard Deviation
FISHING TRIPS	The number of saltwater recreational fishing trips	3.070	11.570
AGE	Respondent's age (in year; 16 years old and older)	46.596	16.085
HOUINC	1 if respondent's household income greater than \$50,000; 0 otherwise	0.559	0.497
MALE	Respondent's gender; 1 if male; 0 otherwise	0.741	0.438

GRADUATE	Respondent's education level; 1 if graduate or professional degree; 0 otherwise	0.121	0.326
MINOR	Respondent's ethnicity; 1 if minority; 0 otherwise	0.134	0.340
URBAN	1 if respondent lived in the urban settings; 0 otherwise	0.521	0.500
SALMON	1 if Salmon was one type of targeted fish; 0 otherwise	0.023	0.151
SBASS	1 if Striped Bass was one type of targeted fish; 0 otherwise	0.079	0.270
BLUEFISH	1 if Bluefish was one type of targeted fish; 0 otherwise	0.039	0.194
FLATFISH	1 if Flounder, Flatfish, or Halibut was one type of targeted fish; 0 otherwise	0.064	0.245
REDFISH	1 if Red Drum (Redfish) was one type of targeted fish; 0 otherwise	0.031	0.173
SEATROUT	1 if Sea Trout (Weakfish) was one type of targeted fish; 0 otherwise	0.025	0.157
MACKEREL	1 if Mackerel was one type of targeted fish; 0 otherwise	0.018	0.132
MARLIN	1 if Marlin was one type of targeted fish; 0 otherwise	0.007	0.081
TUNA	1 if Tuna was one type of targeted fish; 0 otherwise	0.018	0.131
MAHI-MAHI	1 if Dolphin (Mahi-Mahi) was one type of targeted fish; 0 otherwise	0.016	0.124
SHELLFISH	1 if Shellfish was one type of targeted fish; 0 otherwise	0.027	0.162

Source: Computed by authors using 2011 National Survey of Fishing, Hunting, and Wildlife-Associated Recreation

The software used in this empirical analysis is SAS version 9.4 Window environment. There are various built in procedures including GENMOD, COUNTREG, FMM, and NLMIXED that are commonly used in SAS count data analysis. The NLMIXED Procedure was used in fitting the count data models for this study. Empirical results of the count data models for U.S. saltwater recreational fishing trip are presented in Table 2.

The parameter estimates of count data models with the exception of ZIP, ZINB and Hurdle models have the same interpretation. Each regression coefficient is interpreted as the change in log count in the response variable per unit change in the predictor variable. Another way is to take exponential function of the parameter estimates before interpreting them.

It is often a good practice to compare count data models for the purpose of making the right decision on the one that best fits the data. The most common goodness of fit statistics used in comparison of count data models are Akaike information criterion (AIC), $-2 \text{ Log-Likelihood} + 2k$ where k = number of parameters, and Bayesian Information Criterion (BIC), $-2 \text{ Log-Likelihood} + k \ln(n)$ where n = the number of observations. In general, the smaller AIC and/or BIC value refers to the better model.

Table 2. Parameter Estimates (Standard Errors) for Count Data Models

Parameter	Poisson	NB	ZIP	ZINB	ZTP	ZTNB	Hurdle
INTERCEPT	-0.4074 (0.0325)	-1.4900 (0.1398)	1.4798 (0.0342)	1.2562 (0.1300)	-1.2480 (0.0420)	-1.2523 (0.6810)	1.4790 (0.0341)
AGE	0.0055 (0.0005)	0.0106 (0.0023)	0.0026 (0.0005)	0.0059 (0.0020)	0.0083 (0.0006)	0.0097 (0.0036)	0.0026 (0.0005)
HOUINC	0.0621 (0.0156)	-0.0812 (0.0717)	-0.1148 (0.0155)	-0.1259 (0.0621)	0.1163 (0.0186)	-0.1707 (0.1140)	-0.1142 (0.0155)
MALE	0.2091 (0.0198)	0.1277 (0.0801)	0.2428 (0.0198)	0.2399 (0.0689)	0.3041 (0.0254)	0.3580 (0.1209)	0.2432 (0.0198)
GRADUATE	-0.1548 (0.0234)	-0.2395 (0.1109)	-0.3759 (0.0236)	-0.4497 (0.0815)	-0.1544 (0.0271)	-0.6578 (0.1445)	-0.3765 (0.0235)

MINOR	0.8375 (0.0180)	1.4513 (0.0989)	0.4929 (0.0181)	0.5904 (0.0784)	1.0944 (0.0202)	0.8590 (0.1484)	0.4928 (0.0181)
URBAN	0.4068 (0.0159)	0.5890 (0.0701)	0.1985 (0.0159)	0.1974 (0.0603)	0.6148 (0.0197)	0.2700 (0.1084)	0.1981 (0.0159)
SALMON	0.9607 (0.0290)	1.8177 (0.2112)	0.1301 (0.0286)	0.1475 (0.1070)	1.1530 (0.0305)	0.2219 (0.1923)	0.1309 (0.0285)
SBASS	1.2446 (0.0195)	2.1606 (0.1230)	0.4177 (0.0172)	0.5133 (0.0728)	1.4655 (0.0214)	0.7218 (0.1361)	0.4185 (0.0172)
BLUEFISH	0.6205 (0.0227)	1.1062 (0.1717)	0.3982 (0.0199)	0.3609 (0.0893)	0.7001 (0.0239)	0.4919 (0.1695)	0.3973 (0.0199)
FLATFISH	0.7428 (0.0201)	1.5666 (0.1322)	0.3262 (0.0170)	0.3540 (0.0713)	0.8373 (0.0216)	0.4978 (0.1331)	0.3261 (0.0170)
REDFISH	0.8898 (0.0254)	1.5323 (0.1894)	0.2777 (0.0238)	0.2894 (0.1050)	1.0393 (0.0266)	0.4118 (0.1961)	0.2776 (0.0238)
SEATROUT	0.3868 (0.0258)	1.2969 (0.2078)	0.4022 (0.0233)	0.4322 (0.1113)	0.3431 (0.0266)	0.5836 (0.2120)	0.4021 (0.0233)
MACKEREL	0.2853 (0.0279)	1.6216 (0.2426)	0.2186 (0.0255)	0.3605 (0.1182)	0.2145 (0.0292)	0.5261 (0.2267)	0.2183 (0.0255)
MARLIN	0.1959 (0.0465)	1.1953 (0.4229)	0.4611 (0.0411)	0.4962 (0.2123)	0.0667 (0.0481)	0.7532 (0.4451)	0.4601 (0.0411)
TUNA	0.2390 (0.0393)	1.7158 (0.2460)	0.0067 (0.0339)	0.2347 (0.1263)	0.3052 (0.0416)	0.4467 (0.2375)	0.0090 (0.0336)
MAHI-MAHI	0.9468 (0.0375)	1.8329 (0.2902)	0.5060 (0.0332)	0.5424 (0.1484)	1.0595 (0.0394)	0.7055 (0.2933)	0.5047 (0.0332)
SHELLFISH	0.9838 (0.0263)	1.8973 (0.1975)	0.2758 (0.0259)	0.2136 (0.0995)	1.1489 (0.0276)	0.2655 (0.1768)	0.2758 (0.0259)
ALPHA	---	5.8163 (0.1922)	---	1.2638 (0.0422)	---	23.6119 (16.1061)	---
-2 Log- Likelihood	57322	16132	36714	11154	53136	10134	36715
AIC	57358	16170	36786	11228	53172	10172	36787
AICC	57358	16170	36787	11229	53172	10172	36787
BIC	57479	16297	37028	11476	53292	10275	37028

Source: Computed by authors using 2011 National Survey of Fishing, Hunting, and Wildlife-Associated Recreation

The zero-truncated negative binomial model was selected because of lower AIC and BIC values. In the parameter estimates for zero-truncated negative binomial model, the age of respondents appeared to have a positive and significant impact on the saltwater recreational fishing trips. The value of the coefficient for “AGE” (0.0097) suggests that the log count of saltwater recreational fishing trips increases by 0.0097 for each unit increase in age group. It shows that the older a recreational angler’s age, the more saltwater recreational fishing trips taken.

The coefficient for “MALE” (0.3580) is statistically significant and indicates that the log count of saltwater recreational fishing trips for male anglers is 0.3580 more than for female anglers. The coefficient for “GRADUATE”, -0.6578, is statistically significant and indicates that the log count of saltwater recreational fishing trips for anglers who had graduate or professional degree is 0.6578 less than for non-advanced degree anglers. The coefficient for “MINOR” (0.8590) is statistically significant and indicates that the log count of saltwater recreational fishing trips for minority anglers is 0.8590 more than for non-minority anglers.

The coefficient for “SBASS” (0.7218) is statistically significant and indicates the log count of saltwater recreational fishing trips for striped bass is 0.7218 more than for other fish species. The coefficient for “BLUEFISH” (0.4919) indicates the log count of saltwater recreational fishing trips for bluefish is 0.4919 more

than for other fish species significantly. The coefficient for “FLATFISH” (0.4978) is statistically significant and indicates the log count of saltwater recreational fishing trips for flounder, flatfish, or halibut is 0.4978 more than for other fish species. The coefficient for “SEATROUT” (0.5839) indicates the log count of saltwater recreational fishing trips for sea trout is 0.5839 more than for other fish species significantly.

5. Conclusion and Discussion

This study aimed to demonstrate the various range of analysis suitable for count data by modeling saltwater recreational fishing trips taking into consideration the issues of over-dispersion, excess zeros and zero truncation. Count data models are used to model the data in which the dependent variable is count. There are different count data models and is difficult to choose one that best fits the count data. The models considered in this study included Poisson, negative binomial, zero-inflated Poisson, zero-inflated negative binomial, zero-truncated Poisson, zero-truncated negative binomial, and hurdle Poisson models.

The Poisson model is the fundamental model to be fitted for count data where there are no over-dispersion issues and issues with excess zeros. For count data with over-dispersion, a negative binomial model is more appropriate. If excessive zeros are present in the count data, then two part models such as zero-inflated models and hurdle models are more suited to be fitted in such cases. The results of the zero-inflated models and hurdle model are similar but interpretation of hurdle model is much easier. Furthermore, where there is zero truncation of the count data, then zero-truncated models should be rather used.

In selecting a model, there is no fixed yardstick that easily shows the best model. It is not always that simple, the best model choice is not easily that obvious as one that performs best in one regard may not be best in another. There are always pros and cons to consider. In selecting the best model, one needs to consider whether that particular model assumptions are met, nature of count data, the relevance of the zeros to the study, over-dispersion, goodness of fit statistics (i.e. AIC, BIC) comparison as well as zero truncation of count data before deciding on the best fit model for the data.

In addition, consistent with the findings of previous studies, males would go fishing more when they participated in saltwater recreational fishing activities. The positive signs on the variable “MINOR” suggested that those recreational anglers who would go fishing more in saltwater recreational fishing activities. In addition, the positive sign on the variable “URBAN” suggested that those who resided in urban settings have a higher demand for saltwater recreational fishing activities. Results also pointed out that respondents who had graduate or professional degree did not have significant effect on U.S. saltwater recreational fishing trips.

Empirical results of this study indicated that the mature minority male living in the urban area would go fishing for striped bass, bluefish, flatfish, redfish, sea trout, mackerel, tuna, and mahi-mahi in U.S. saltwater areas. Therefore, recreational anglers living in urban settings does appear to be a distinguishing factor in saltwater recreational fishing activities. Therefore, saltwater recreational fishery managers should have an opportunity to target this user group in their management plans, expanding a shrinking constituency.

Also, empirical results of this study found that targeting one or more of specific species have positive and significant impacts on U.S. saltwater recreational fishing trips, indicating that demand increases significantly with the presence of fish categories including striped bass, bluefish, flatfish, redfish, sea trout, mackerel, tuna, and mahi-mahi. Thus, the availability of a diversity of species plays an important role in saltwater recreational fishing. Fishery managers should educate the public about the availability or location of diverse habitats to generate continued interest and increased participation in saltwater recreational fishing.

More importantly, healthy fisheries habitat is not only essential for a healthy fishery, but is also an essential part of the fishing experience. Without a healthy fishery based on healthy fisheries habitats the effort will fail. Saltwater recreational fishing adds to mixed activity vacation venues attracting anglers and families with multiple interests. Particularly, saltwater recreational fishing business succeed on the basis of the quality of the fishable resource, the

quality of the ancillary experience of nature, comfort and well-directed marketing that matches the venue to the needs of various types of anglers (Cisneros-Montemayor and Sumaila, 2010).

Without adequate fishes and their habitats, there would be far fewer or no participants in saltwater recreational fishing activities. In addition, the purpose of saltwater recreational fishing trips would be expected to have a positive impact on saltwater recreational fishing expenditures. Thus, fisheries habitats and populations can be viewed a critical factor, as with an increase in ecosystem and biodiversity of fisheries, the more saltwater recreational anglers would participate in and consume (Cisneros-Montemayor and Sumaila, 2010).

Many studies neglect how best to model saltwater recreational trips and get meaningful insights into the behavior of saltwater anglers that affect their saltwater fishing trips behavior and participation. This study aims to provide guidelines and create awareness for the proper use of count data models that will lead to results that are more accurate and get a better understanding of saltwater recreational fishing trips that would eventually lead to promotion of saltwater recreational fishing and tourism as a whole.

Results from this study may give better understanding of recreational fishing trips among saltwater anglers and also provide guidelines for saltwater recreational fisheries planning and management. It may also serve as a yardstick in encouraging the proper use of count data models so as to get accurate results and get a better understanding of count data models. Therefore, the empirical results of this study provide insight into the determinants of saltwater recreational fishing trips, which can be used in analyzing the social and economic values of saltwater recreational fisheries planning and management.

References

- Cisneros-Montemayor, A. M. and Sumaila, U. R. (2010). A global estimate of benefits from ecosystem-based marine recreation: potential impacts and implications for management. *Journal of Bioeconomics* 12(3), 245-268.
- Cohen, A. C., Jr. (1960). Estimating the parameter in a conditional Poisson distribution. *Biometrics* 16(2), 203-211.
- David, F. N. and Johnson, N. L. (1952). Extension of a method of investigating the properties of analysis of variance tests to the case of random and mixed Models. *The Annals of mathematical Statistics* 23(4), 594-601.
- Good, I. J. (1986). Some statistical applications of Poisson's work. *Statistical Science* 1(2), 157-180.
- Greene, W. H. (2008). *Econometric analysis* (Sixth Ed.). Upper Saddle River, New Jersey: Pearson Education Inc.
- Greene, W. H. (1994). Accounting for excess zeros and sample selection in Poisson and negative binomial regression models. NYU Working Paper No. EC-94-10. Available online at https://papers.ssrn.com/sol3/papers.cfm?abstract_id=1293115
- Grogger, J. and Carson, R. (1991). Models for truncated counts. *Journal of Applied Econometrics* 6(3), 225-238.
- Gurmu, S. (1991). Tests for detecting overdispersion in the positive Poisson regression model. *Journal of Business & Economic Statistics* 9(2), 215-222.
- Hall, D. B. (2000). Zero-inflated Poisson and binomial regression with random effects: a case study. *Biometrics* 56(4), 1030-1039.
- Hardin, J. W. and Hilbe, J. M. (2012). *Generalized linear models and extensions* (Third Ed.). College Station, Texas: A Stata Press Publication.
- Heilbron, D. C. (1994). Zero-altered and other regression models for count data with added zeros. *Biometrical Journal* 36(5), 531-547.
- Singh, J. (1978). A characterization of positive Poisson distribution and its application. *SIAM Journal on Applied Mathematics* 34(3), 545-548.
- Lambert, D. (1992). Zero-inflated Poisson regression with an application to defects in manufacturing. *Technometrics* 34(1), 1-14.
- Loeys, T., Moerkerke, B., Smet, O. D. and Buysse, A. (2012). The analysis of zero-inflated count data: beyond zero-inflated Poisson regression. *British Journal of Mathematical and Statistical Psychology* 65(1), 163-180.
- Mullahy, J. (1986). Specification and testing of some modified count data models. *Journal of Econometrics* 33(3), 341-365.

- Potts, J. M. and Elith, J. (2006). Comparing species abundance models. *Ecological Modelling* 199(2), 153-163.
- Sampford, M. R. (1955). The truncated negative binomial distribution. *Biometrika* 42(1-2), 58-69.
- Shonkwiler, J. S. and Shaw, W. D. (1996). Hurdle count-data models in recreation demand analysis. *Journal of Agricultural and Resource Economics* 21(2), 210-219.
- U.S. Department of the Interior, U.S. Fish and Wildlife Service, and U.S. Department of Commerce, U.S. Census Bureau. (2002). 2001 National Survey of Fishing, Hunting, and Wildlife-Associated Recreation. Available online at <https://www.census.gov/prod/2002pubs/FHW01.pdf> [accessed 2 October 2018]
- U.S. Department of the Interior, U.S. Fish and Wildlife Service, and U.S. Department of Commerce, U.S. Census Bureau. (2007). 2006 National Survey of Fishing, Hunting, and Wildlife-Associated Recreation. Available online at <https://www.census.gov/prod/2008pubs/fhw06-nat.pdf> [accessed 2 October 2018]
- U.S. Department of the Interior, U.S. Fish and Wildlife Service, and U.S. Department of Commerce, U.S. Census Bureau. (2014). 2011 National Survey of Fishing, Hunting, and Wildlife-Associated Recreation. Available online at <https://www.census.gov/prod/2012pubs/fhw11-nat.pdf> [accessed 2 October 2018]
- Zawacki, W. T., Marsinko, A. and Bowker, J. M. (2000). A travel cost analysis of nonconsumptive wildlife-associated recreation in the United States. *Forest Science* 46(4), 496-506.

Conceptualizing Strategic CSR and its Organizational Outcomes: A Review of Literature and Research Agenda

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Abstract

The strategic management literature has accorded significant attention to the construct of corporate social responsibility, and the literature on the construct is relatively rich. The literature is, however, faulted for its limitations in the provision of consistent guidelines to business practitioners on how Corporate Social Responsibility can be integrated with operational, business and corporate strategies for achievement of competitive advantage. This paper reviews extant conceptual, theoretical and empirical literature and raises a variety of issues that present a case for a new theoretical model suitable for the expansion of the current understanding of employment of strategic corporate social responsibility and its resultant outcomes. The paper proposes an integrated theoretical model for linking Strategic corporate social responsibility and organizational outcomes while acknowledging the significance of value creation focus and environmental dynamism in the context of the twenty-first-century business operating environment.

Keywords: Environmental Dynamism, Firm Performance, Shared Value, Strategic CSR, Value Creation

1.0 Introduction

Review of strategic management concept in the 21st Century reveals that the phenomenon has not only evolved over time, but it has also passed through divergent phases and semantic contexts. Over time, strategy in general and strategic management, in particular, has acquired an indispensable status in leadership and management of organizations since strategy addresses the connection between the inner world of the business and its external environment (Mainardes, Ferreira & Raposo, 2014). In the face of a turbulent business operating landscape that is characterized by volatility, uncertainty, complexity and ambiguity on one side and scarce resources and competing priorities on the other side, strategic management has become the foundation upon which organizations are built. To deal with environmental turbulence and remain competitive, organizations have had to revitalize their strategic management processes through dynamic, relentless learning and adaptability in taking advantage of emerging opportunities. To maintain dynamism and operate at a higher level than competitors, organization's leadership is forced to think in a distinct manner that promotes creativity. Strategic thinking as an innovative, ingenious, and

right-brained process has encouraged openness to ideas and solutions obligatory to meeting often unpredictable challenges faced by businesses today (Haycock, Cheadle & Bluestone, 2012). Strategic thinking requires not only intuition and creativity but also an innate ability to create value by enabling a creative yet provocative dialogue necessary in addressing the future direction of the organization on the basis of anticipated environmental changes (Mintzberg, 1994).

The hallmark of strategic thinking is the ability to analyze the operating environment and come up with creative, strategic options that not only advance the organization's agenda but also build capabilities necessary for survival (Haycock et al., 2012). One of the key capabilities that an organization can build is the ability to successfully manage stakeholder relations without injuring the interest of the shareholders through corporate governance and responsible corporate citizenship (Dubach & Machad, 2012). How well an organization relates with the society in general and stakeholders in particular can be a key determinant of organizational success or failure. Over the last couple of decades, CSR has grown from the very narrow and marginalized notion of corporate philanthropy of 'doing good for goodness sake' to a multifaceted component of both business and corporate strategy (Afrin, 2013). CSR is no longer viewed as a mere philanthropic venture by an organization. It is viewed more or less as a corporate strategy that focuses on stakeholders with the hindsight of helping the firm achieve its objective in the long run (Pant & Piansoongnern, 2017). Strategic CSR, therefore, becomes a strategic option with a dual purpose of furthering public good while enhancing the core business opportunities with minimal social risks (Li & Guo 2018). To meaningfully assess the contribution of CSR to strategic management and subsequent corporate performance, one, therefore, needs to review the conventional wisdom that not only pressurizes business to view CSR generically but also pits business against the society (Porter & Kramer, 2006). Due to the growing prominence of CSR in practice, the strategic management scholarship needs to embrace its attributes that offer the potential for mounting relevant, viable strategic options suitable for providing a balance between profit-oriented concerns and those for long-term sustainability (Salvioni, Gennari & Bosetti, 2016). A number of scholars have begun to raise this call with a view to integrating CSR into the mainstream strategic management literature (Yuan, Bao & Verbeke, 2011).

2.0 Problem Statement

Though there are emerging calls for the integration of CSR into the mainstream strategic management literature, the extant literature on CSR has been criticized and faulted for several reasons. First, there lacks a consensus not only on how to generally define CSR but also on the key constructs, components, and characteristics of CSR (Agudelo, Jóhannsdóttir & Davídsdóttir, 2019). Secondly, despite the general acceptance of CSR in both corporate and academic spheres, there lacks a clear set of well-defined frameworks, models and agreement on how to make CSR work for both the business and the society from a 'win-win' point of view (Pant & Piansoongnern, 2017; Brooks, 2005; McWilliam & Siegel, 2006; Militaru & Ionescu, 2006; Porter & Kramer, 2006). The extant literature has neither contributed significantly to the understanding of how CSR impacts firm performance nor provided a compelling framework for the strategic management of CSR. After more than three decades of research on the relationship between CSR and firm financial performance, the results are mixed, at best; some studies show a positive relationship between the two; others, a negative relationship; and still others, no relationship (Husted & Allen, 2006). Such inconsistencies that have stood in the path to a consolidated set of empirically verified and validated scientific knowledge need to be addressed so as to solidify the gains so far made while tapping into multidisciplinary based literatures that help in addressing the reasons for the inconsistencies.

Thirdly, despite the presence of extensive literature on CSR, there has been limited attention paid to strategic CSR and how business managers and scholars can integrate CSR into their operational, business and corporate strategies to improve their competitiveness and achieve sustainable competitive advantage (Husted & Allen, 2006). Whilst the literature on CSR is extensive and rich, it is yet to be fully and purposively integrated with the mainstream strategic management literature since CSR is generally discussed within the context of ethics and the rule of law but rarely from the strategic management perspective. The existing theoretical and empirical literature on strategic CSR is so fragmented and disjointed from business strategy that the benefits and opportunities that lie in corporate and societal relations are obscured leading to the two constructs being viewed separately instead of cooperatively (Porter & Kramer, 2006).

Fourthly, we observe that an important aspect of organizations along which firms may differ in their adoption of CSR touches on value creation. Extant theoretical models on value creation processes have taken biases towards profit-oriented concerns. However, given the increased adoption of CSR among firms, we view the aspect of value creation as a possible intermediate outcome that offers an avenue towards the integration of Strategic CSR in the strategic management literature. This, however, faces a number of challenges that need to be addressed. For example, there has been limited research addressing the relationship if any between value creation focus, strategic CSR, and the moderating effects of the environmental dynamism. As Husted and Allen, 2006, Haksever et al., 2004 and Pant and Piansoongnern, 2017 notes, research is yet to crystalize and clearly conceptualize how the value creation and CSR relate against a backdrop of environmental dynamism to influence the firm's performance. The extant literature provides very scanty details on how CSR can be pursued from the value creation perspective to not only improve the fortunes of an organization in the short-run but also to set up the organization on the path of sustainability.

Lastly, while the extant literature is vast on a number of constructs that may be linked to a phenomenon arising from the deployment of CSR as a strategy, it is observed that each of the diverse constructs has been discussed on a stand-alone basis further leading to a scarcity of literature from a multi-disciplinary perspective. There is, therefore, a call for a multidisciplinary approach in building a conceptualization of the construct of CSR by not only relying on strategic management theories but also borrowing from other known disciplines that have underpinned the organizational studies such as economics, organizational theory, behavior, and sociology.

In view of the above, the study seeks to extend and enrich the current state of knowledge on the concept of CSR by exploring how various aspects of strategic CSR bring about organizational outcomes in the context of organizational operations. Given the scanty nature of literature and inherent inconsistencies, the authors identify the need to consolidate the extant literature with a view of suggesting a relevant model that seeks to demonstrate how the deployment of strategic CSR in a value creation system may yield desirable outcomes for both the shareholders and stakeholders. Thus, the paper addressed three objectives: reviewing extant conceptual, theoretical and empirical literatures to provide an understanding of the construct of Strategic CSR and its accompanying outcomes in organizations; identifying the phenomenon emerging from the deployment of Strategic CSR as a strategic option; and proposing a suitable theoretical model modelling the relationships among identified constructs in the emergent phenomenon.

We consider this undertaking to be of great value to the strategic management literature in several ways. In the first instance, we recognize the immense potential of strategic CSR from the view point of practice. A large number of organizations are progressively adopting this constructs and slowly pushing it to the nerve center of corporate decisions as is evidenced from the high number of organizations establishing foundations to champion the causes that go beyond philanthropic interests. Under such a move, literature is needed to inform the practice of how such moves can be better undertaken from a proper understanding of the as corporate strategists. Secondly, given the current state of theoretical and empirical literature, we recognize the need to consolidate diverse pieces of knowledge from a multi-disciplinary based perspective. From this basis, we see a benefit accruing to both researchers and theorists who are interested in identifying the cause of the empirical inconsistencies that may be conceptually, contextually, and methodologically explained. Lastly, the paper proposes a way forward in that it not only conceptualize strategic CSR but also highlighted its intermediate and ultimate outcomes within the context of the operations of organizations. In the proposed model, a clear understanding of a phenomenon and its components have been provided. This goes a long way to not only provide a new theoretical model but also offer a stepping stone for the direction for future research.

3.0 Conceptual Review

In response to the objectives of this study, the authors undertook to review the extant conceptual literature on the construct of strategic CSR so as to highlight its nature as well as the outcomes resulting from its deployment in a firm's environmental context. The paper first reviews the literature on the constructs and identifies constructs in the phenomenon that need consideration.

3.1 Strategic CSR

To achieve the objectives of this study, the salient concepts explaining the construct of strategic CSR are discussed. To understand the concept, it is not only paramount but also essential, to begin with, the construct of CSR. Despite lack of consensus among scholars on how to conventionally and universally define CSR, the construct can be generally and loosely defined as an acknowledgement of the fact that businesses have obligations that go beyond shareholders and that all stakeholders who include suppliers, customers, employees, the state and community at large who affect and can be affected by the corporation's decisions deserve to be treated ethically and in a manner that promote their wellbeing and uphold human dignity. We identified several perspectives to the understanding of strategic CSR in the literature. First, CSR is viewed and understood as a series of interactions between corporations and stakeholders that is facilitated by voluntary integration of social and environmental initiatives incorporate strategies and practices with an intention of promoting community wellbeing and social progress through upholding ethical business practices (Pant & Piansoongnern, 2017). This view is shared by Gazzola and Colombo (2014) who view CSR as an integration of ethics and principles of environmental and social care into the organization's way of doing business.

Secondly, CSR is viewed from corporate citizenship perspective by Ntiamoah, Eyyiri, and Kwamega (2014) who posit that organizational long term success is dependent on favorable corporate citizenship that creates higher standards of living and good quality of life in the societies where they operate through prioritization of ethical, legal and economic responsibilities. The view is further reinforced by Brooks (2005) and Mikolajek- Gocejna (2016) who observe that a company's obligation is to maximize its positive impact without augmenting its negative impacts by providing solutions that tend to the societies long run needs. More critical views of CSR have a tendency to focus on the economic view and business perspective of the construct. In this sense, CSR is defined as corporate actions that serve the society with the hindsight motivation being either pure social concern, the bottom-line, or both (McWilliams & Siegel, 2011). To augment this view, Smith (2007) further reiterates that, while CSR has the stakeholders interest at heart, it is a great source of sustainable competitive advantage that is derived from a culture that successfully combines and executes a series of initiatives such as intelligence gathering, stakeholder involvement, and incorporation of social action in strategic planning with an intention of competitively positioning an organization.

Thirdly, CSR is viewed from voluntarism and proactivity perspective. This view observes that, explicit CSR is voluntary, strategic and deliberate and consists of organizational policies, strategies, programs and incentives motivated by and anchored on stakeholders' expectations while implicit CSR is an undeliberate, involuntary reaction to societal reflection and perception of a corporation's institutional environment that is defense rather than offense-oriented (Matten, 2008; Porter & Kramer 2008; Hoffman, Moon & Wu, 2017). This view is further advanced by Reinhardt and Stavins (2010) who view CSR as either voluntary or reluctant. They allude that while voluntary social responsibility is CSR in its purest form, reluctant CSR is involuntarily motivated and forced by societal expectations and market forces. From the varied definitions discussed, CSR can, therefore, be defined as (i) largely voluntary; (ii) provision of public good using corporate, private means; (iii) with an intention of not only promoting and enhancing stakeholder relations but for the purposes of enhancing corporate brand image and competitive advantage. From the literature explored, while the definition of CSR is largely agreed upon, albeit immaterial variations, the unquantifiable nature of CSR is of great concern.

From the literature explored, we point out that the various scholars have been able to define and discuss various aspects of CSR. This attempt has, however, been done generally without being specific on how it may be applied in a strategic management context and setting to enhance value creation and success of the firm. The current paper builds on this state attained in the literature to extend the scope of the understanding of CSR in strategic management perspective through the concept of strategic CSR. CSR is a key component of both business and corporate strategy. The 21st-century business operating environment is not only dynamic but also volatile, uncertain, complex, and ambiguous. In pursuit of CSR, corporate citizenship and social responsibility, the firm's challenges are compounded by the prevalent regular tendencies of pitting the society against businesses. The relationship between the society and business, however, should be viewed as collaborative rather than adversarial since the two are more interrelated and symbiotic than the pundits would want to admit (Porter & Kramer, 2006). Stakeholder relations and CSR, therefore, are an important component of business and should be strategically

handled just like other business activities. The strategy is about being different by deliberately choosing what to pursue and how to pursue it in a manner that creates a unique and valuable position in the market (Porter, 1996). For success, businesses can no longer pursue social responsibility traditionally. Traditional CSR, in this case, has given rise to strategic CSR.

In our review and presentation of literature on strategic CSR, our focus was drawn to bringing out the varied definitions of strategic CSR, its facets and how strategies can be built around the components for achievement of desirable strategic benefits to a firm. Strategic CSR can therefore be defined as responsible initiatives that help organizational leaders to execute value-creating strategies from a social concern perspective through alignment of environmental, economic and social performance with long term business goals, objectives and values with an intention of garnering favorable publicity, enhancing organizational brand image and achieving sustainable competitive advantage (Pant & Piansoongnern, 2017; Brooks, 2005; Gazzola & Colombo, 2014). To strategically manage CSR, firms need to make trade-offs by analyzing their social responsibility prospects using the same frameworks they use to analyze their core activities, choosing initiatives that benefit both the business and society in the long-run and consequently creating a strategic fit between social good for the stakeholders at large and profit maximization and increasing shareholders value (Porter & Kramer, 2006).

Strategic CSR can be further described as a practice that allows the firms to achieve sustainable competitive advantage through the provision of public good privately (McWilliam & Siegel 2011). It is a form of social capital embedded in a network of significant stakeholder relationships and packaged in a manner that enhances the brand image and increases loyalty (Brooks, 2005). Strategic CSR takes a holistic view of CSR, corporate strategy, and integration of social responsibilities with day-to-day business operations. When viewed from the strategic perspective, CSR, therefore, becomes less of a constraint, cost and charitable deed and more of a source of growth, opportunity, innovation and competitive advantage (Porter & Kramer, 2006). In the views of Li and Guo (2018) what differentiates strategic CSR from traditional CSR is its ability to create competitive advantage by supporting the core business and should, therefore, be executed in conjunction with the core business functions. A prerequisite for the sustainability of strategic CSR is finding the balance between economic and social responsibility priorities, the ability to find synergy between CSR, external environment and core business and the ability to build strategic advantage around CSR (Li & Guo, 2018).

CSR exhibition is not only multifaceted, but it is also multilayered. Both Carroll (1991) and Medis, Yong, Khatibi, and Azam (2016) agree that CSR adopts the four levels of economic, legal, ethical and philanthropic with the economic being the most basic level. They further posit that profitability is the most basic form of economic responsibility and the foundation upon which the other three levels are built. Companies are expected to not only respect the rule of the law and operate within the confines of the law but are also obliged to do what is right, ethical fair, and just. At the top of CSR pyramid is the philanthropic responsibility. The communities in which businesses operate expect companies to embrace the concept of good corporate citizenship through active engagement in the promotion of communal goodwill, human welfare and philanthropic activities that reflect the organizational caring values towards the community (Carroll, 1991). According to Mwangangi (2018), CSR takes the form of or can be classified into employee, customer, community, and government relations. Corporate-employee relations expect organizations to organize themselves in a manner that promotes staff welfare through the respect of labor laws, promotion of a learning culture through training and development as well as adherence to operational and workplace safety that guarantee safe working spaces for the staff. While corporate-customer relations are best nurtured through quality assurance, customer care, and proper communication and feedback channels, organizational-communal relations are promoted through projects and charity endeavors that address community development needs and agenda. CSR is incomplete in the absence of legal and regulatory framework on waste management and general sensitivity towards environmental issues and causes. From the pyramid perspective, while customer relations and community relations are purely economic and philanthropic responsibilities respectively, employee and government relations transcend through ethical and legal responsibilities since they exhibit qualities dominant in both legal and ethical considerations (Mwangangi, 2018; Carroll, 1991).

The strategy is about being different and an ability that allows an organization to create a fit among its activities and operations in a manner that makes it distinct and different (Porter, 1996). For organizations to employ CSR as

a strategy capable of generating competitive advantage, they need to deploy CSR initiatives from four strategic vantage points and perspectives of employees, customers, community and the government as the key stakeholders without whom the goal of shareholder wealth maximization would be elusive. The four vantage points are considered to be the main areas along which strategic CSR is built. A firm's capability to successfully manage stakeholder can be an intangible resource capable of generating a competitive advantage that is sustainable in the long run (McWilliams & Siegel, 2006). To succeed in managing the stakeholders, every organization must build a strategy around each of their salient stakeholders. While the employee relation strategy focuses on how to attract and retain a talented workforce through training, remuneration, and provision of the safe work environment, the customer relations strategy focuses on building customer loyalty through the delivery of quality products, superior customer care and transparency in information dissemination. In engaging the community, a business must embrace a strategy that reflects their respect for the dignity of the society in which they operate through genuine care of the communities and their needs. The regulatory strategy, on the other hand, seeks to align the organizational activities with the precepts and dictates of the law on matters of environmental conservation.

The discussion on the nature of Strategic CSR brings out two implications that the study finds relevant in the understanding of how its deployment will shape organizational strategic positioning through a reconceptualization of CSR as a strategy and a force to reckon with in enhancement of brand image, customer loyalty, and attainment of competitive advantage. First, as value creation entities, firms' chances of success are dependent on their ability to differentiate themselves in the market on the basis of the superiority of value provided to the customers. While value creation can be pursued by any firm, it is only within the context of strategic positioning that a firm can be able to create economic value for shareholders without compromising the needs of other salient stakeholders through shared value concept (Porter & Kramer, 2006). Secondly, the strategic thinking orientation underscores the role of the external environment whose developments avail both opportunities and threats that need to be responded to and shape the interactions between strategic CSR and corporate performance. Of particular concern is the manner in which the speed and direction of change and the resources provided by the competitive environment shape the direction of corporate social strategy in redefining the key social priorities capable of giving an organization a competitive edge (Husted & Allen, 2007; Luxmore, Tang & Hull, 2012). The study, therefore, suggests that the constructs of value creation focus and environmental dynamism need to be considered in the attempt to explain how the deployment of strategic CSR contributes to organizational outcomes along the value chain. The value chain has its focus on transformation to bring about outcomes that can be analyzed at several stages of the process. We are of the view that understanding these outcomes enables scholarship in strategic management to understand the emergent phenomenon and the key constructs that feature in the phenomenon at both the intermediate and ultimate states.

3.2 Value Creation Focus

The cardinal economic responsibility of a company is to fulfill its financial obligation to the shareholders and the investors. This responsibility is a prerequisite for organizational success since businesses exist principally to create value. Definitions of value and value creation are as varied as the research. Like many academic concepts, unanimity and consensus in conceptualizing and defining value and value creation are not only impossible it is also elusive. From the economics perspective, Adam Smith and Alfred Marshall define value as resultant equilibrium price when marginal utility equals marginal cost while Michael Porter takes a strategic management view to define value as what buyers are willing to pay for any good or service in the offering (Porter, 1985; Haksever et al., 2016). Value is, therefore, the consumer's perception of a product's ability to deliver its promise in meeting a need. Value creation on the other hand is a fundamental business function that allow firms to use and combine their capabilities, processes and core competencies in pursuit of their day-to-day operations with the ultimate goal being creation of goods and services that deliver superior value to the customers, economic profits to the business and consequent competitive advantage that is relevant for corporate survival (Herrala, Pakkala & Haapasalo, 2011). Value creation can, therefore, be defined as the process through which organizational distinctive competencies and resources are combined to deliver competitive advantage through the delivery of comparatively superior products.

Value creation is best understood by taking a birds-eye view of the organizational operations through the value chain perspective that views an organization not as a whole but as a collection of systematic and strategically

relevant units necessary in the achievement of organizational objectives (Porter & Kramer, 2006). The whole idea of the value chain is premised on the view of looking at the organizations from the perspective of systems and subsystems that comprise of inputs, outputs, and transformation processes. Value chain as a determinant of costs and profit depends on how value chain activities are managed, and this is best understood through the performance of value chain analysis. Value chain analysis is a way of not only conceptualizing activities necessary for the creation of products and services, but it is also relevant in narrowing organizational focus towards satisfying the needs and wants of end-users who are the consumers (Ensign, 2001; Howieson, Lawley & Hastings, 2016). The significance of value chain analysis to value creation lies in three main areas namely: formulation of competitive strategies, outlining of business activities relevant in value addition and in understanding the core competitiveness of an enterprise through specification of customer value, identification of relevant value chain activities, analysis of activity value and cost as well as matching of activities with competitive abilities (Zhang, Wang & Lee, 2011; Howieson, Lawley & Hastings, 2016; Ensign, 2001).

In Wheelen and Hunger (2010) opinion, value chains are key in not only identifying the profit margins of each activity but also in the determination of the firm's center of gravity. The center of gravity is further defined as the firm's original activities that gravitated the firm toward competitive advantage, and it is the focal point that determines what is retained as a core activity and what is outsourced in an attempt to further competitiveness through cost management. Value creation focus from strategic management perspective involves understanding the uniqueness of the industry in which a business operates and developing and customizing the value chain in a manner that allows the company to gain a competitive edge over its rivals. The key to creating differentiation on the basis of the value chain, therefore, lies in the company's ability to identify the key value drivers that are relevant in setting the organization apart from its rivals. Value chain analysis, therefore, facilitates identification of major components of internal cost structures to isolate the various aspects of the business that are key in generation of competitive advantage and that leads to significant differentiation of a firm about its competitors (Thompson, Petraf, Gamble & Strickland, 2018). Ensign (2001) argues that linkages in a firm's value chains can be reorganized and redefined to facilitate the gaining of a competitive edge against rivals. Organizational management is constantly faced with decisions that have an impact both positive and negative on both the relative competitive position and profitability. These are decisions of strategic importance because they not only determine the fate of the firm, they also determine its survival. For the attainment of competitive advantage, therefore, the firm must differentiate its self from the rivals on the basis of value creation by either performing its activities in ways that deliver superior benefit to the customers or superior value to the firm through lowering of the costs.

While the constructs of both strategic social corporate responsibility and value creation have been assessed, their relationship and interrelatedness have not been explored. So, what is the intersection point or the convergence zone between strategic social corporate responsibility and value creation? According to Porter and Kramer (2006), too much time and resources have been spent pitting businesses against society and leaders both in the civil society and business have focused too much on the friction rather than on the points of agreement. The mutual interdependence between the corporations and societies, therefore, needs to follow the concept of shared value instead of pursuing the restricted pathways of economic value and society value separately. We, therefore, propose adoption of the construct of shared value as the component drawn from CSR to provide the balance between societal concerns and shareholders concerns. This way, adoption of this construct extends the traditional focus biased towards shareholder wealth maximization perspective of economic value. Thus, under strategic CSR, firms will focus on generating systems with competencies or capabilities for generating not only economic value but also shared value.

Shared value is the framework that enables corporations to generate a surplus by addressing societal concerns through re-conception of products and markets and redefinition of productivity along the value chain (Windsor, 2017). Shared value creation is the process of adopting operating practices and policies that boosts and enhance organization's competitiveness while simultaneously advancing the economic interests of the companies and social conditions and concerns of the communities in which they do business and operate (Porter & Kramer, 2011). Thus shared value in this perspective does not just serve corporate philanthropic or mere sustainability interests but goes further to support essential strategic concerns or interests for a firm in that it offers a brand new way of achieving the double faceted success that allows both the corporations and communities to thrive. In this strategic role, it is

expected to play, and it provides a required capacity suitable to reshape the relationship between capitalism and socialism and further provides a way of legitimizing business gain through providing a convergence zone between corporate performance, economic value creation and societal concerns (Porter & Kramer, 2006, 2011). In this convergence we see an opportunity to further address growing concerns for the integration of the stream of theoretical work in organizational studies on the one hand focusing on internal conditions in the firm and on the other hand focusing on the external conditions of the firm which pits the RBV against the institutional theory and resource dependence theory respectively (Meyer et al, 2009)

3.3 Environmental Dynamism

Owing to the nature of strategic decisions and thinking, the adoption of strategic CSR as a strategic option invites the external environment into the decision analysis or process. One of the justifying points is the need to strike a balance between the internal conditions of the firm and the conditions prevailing on the external environment. The external environment is of interest to the strategist due to the dynamism exhibited by the constituent element that has the potential for business opportunities or environmental threats.

To survive and thrive, organizational leadership not only needs to acknowledge the role the environment plays in organization's management and administration, but it also needs to be conversant with the nature and impacts of firm-environment interactions. Firms operate within both internal and external environments. The actions and intentions of organizations are therefore shaped by influences emanating from the environment that is continually experiencing one form of change or another. To successfully manage organizations and their interaction with the environment, leadership needs to pay attention to both resources and the nature and velocity of change in the operating environment. Environmental dynamism as a component of velocity refers to the level of environmental predictability manifested by the degrees of variance in levels of industry and market change and uncertainty about prevailing forces that are beyond the control of individual corporations (Baum & Wally, 2003). Dynamism is expressed as the degree of stability or instability, and it measures the rate of change in the environment (Luxmore et al., 2012). Environmental dynamism is viewed more or less as the degree of difficulty in predicting events external to the firm that have the ability to both influence and affect the competitive environment (Husted & Allen, 2007).

Scholarship in organization theory has given considerable attention to the construct as an imperative to the study of organizations. There seems to be a convergence between scholarship in strategic management and organization theory on what the focus should be in studying the construct of environment namely the aspect of change or dynamism in the environment (Ansoff & McDonnell, 1990; Robins, 2004). Environmental dynamism is best understood from the trio perspectives of changeability, predictability, and munificence (Mwazumbo, 2016; Dess & Beard, 1984). Changeability can be defined as the firm's adaptability to environmental mutable nature as far as the surrounding and prevalent forces are concerned while predictability refers to the rapidity of change. Changeability exhibits itself in duo dimensions of complexity and novelty. Complexity deals with the extent to which the environment presents a variety of conditions and influences such as legislative requirement, socio-political dimensions, and globalization while novelty is the degree or the extent to which the environment introduces new situations that need to be dealt with (Lynch, 1990). Predictability is the rapidity of change that exhibits its self in the rate of change and visibility of the future. Rate of change is best understood when evaluated in the light of the organization's ability to respond to the change occurring in the environment while the visibility of the future refers to how well a firm is able to predict the future on the basis of available information (Lynch, 1990).

3.4 Firm Performance

The ultimate goal in the deployment of strategies is influencing performance. Firms performance as a study construct is one of the most frequently used dependent variables in the strategic management research and literature. Just like many other academic concepts, firm performance as a concept has evolved over time through a metamorphosis of the prevailing perceptions. The definition has grown from the 50's, 60's and 70's view of equating performance with efficiency, productivity, flexibility and adaptability of limited resources in achievement of organizational goals to the post 80's definition of performance as an organization's ability to effectively combine

resources and capabilities in delivering superior value and building competitive advantage (Taouab & Issor, 2019). The post 90's ushered an era that critiqued financial measures as a sole reflection of organizational performance and advocated for a holistic view of corporate performance through tools like Balanced Score Card and Triple Bottom Line.

Despite its relevance and preeminence there hardly exist any consensus regarding its definition, measurement, and dimensionality leading to not only research advancement limitations but also lack of an operational definition enjoying a majority scholarly backing (Taouab & Issor, 2019; Selyam, Gayathri, Vasanth, Lingaranja & Marxiaoli, 2016). While this paper neither seeks to end the consensus debate nor provide a universally accepted definition, it intends to define the construct by assessing it through multiple dimensions of financial, stakeholder, and sustainability perspectives. We consider this as an important contribution to the continuing debate on what entails performance as a construct widely used in strategic management as the measure of the impact of applied strategies. Most of the attention has been given to objective measures that are of financial dimension in nature. This, however, has limitations in that most strategies bring about consequences that go beyond financial indicators still of interest to management. In addition, with rapidly growing concerns, for organizations to pay attention to sustainability, it becomes imperative for a scholarship to respond to this growing concerns by integrating models that underpin the emerging concerns and thereby provide a host of indicators that go beyond the financial dimension.

Although sole reliance on financial statement driven ratios as measures of performance has been criticized for failure to tell the firm's story in its entirety, the financial macro-metrics derived from the financial statement continue to be widely accepted in both the academic and business circles to reflect and capture the contemporary value creation activities of the firm (Smith, Hillon & Liang, 2018). In critiquing the narrow and simplistic nature of defining performance by use of financial metrics, Selyam et al. (2016) argue that firm performance ought to be evaluated from not only the limited financial but also from non-financial dimension. They assert that the firms' performance can only be exhaustively defined and sufficiently measured if an all-inclusive model of the nine dimensions namely growth performance, profitability performance, customer satisfaction, market performance of the organization, employee satisfaction, environmental, corporate governance and social performance is adopted. The view of defining firm performance from a holistic view point of financial, non-financial, tangible, and intangible measures. Firm performance, therefore, becomes the organizational ability to fulfill not only the tangible and intangible goals but also to satisfy the financial and non-financial reasons of its existence. Mere attention and focus on the traditional measures of firm performance does not provide a holistic view of how organizations impact the stakeholders. Firms not only improve their competitiveness through improved environmental, and social performance, they also boost their performance by complying with the regulatory framework requirements (Roni, Jabar, Muhamad & Murad, 2016). In view of this discussions, the authors propose that a more balanced view of the construct of performance with regard to the antecedent factor of strategic CSR would require performance dimensions to reflect financial, stakeholder and sustainability indicators. The financial indicators mostly used in scholarship are profitability margins, return on investment, earning per share, and dividend per share.

4.0 Theoretical Review

While the conceptual discussion has attempted to provide a comprehensive understanding of the construct of strategic CSR from its historical roots and the possibility of a phenomenon growing out of its deployment, it becomes necessary to underpin such understanding of the phenomenon on the appropriate theoretical grounding. As the paper undertakes to advance a case for a scholarship based on strategic CSR and its organizational outcomes, the phenomenon needs to be anchored on the postulates of relevant theoretical literature. The paper considered arguments arising from stakeholders, shareholder, RBV, stewardship, social contract, triple bottom line, and resource dependence theories.

4.1 Stakeholders Theory

Stakeholders theory provides a key foundation upon which SCR propositions and arguments are built. The theory posits that, stakeholders who are commonly defined as any group of individuals who affect or can be affected by the achievement of organization's goals, actions, policies and objectives (Freeman, 1984) play an integral role in the achievement of organization's objectives and goals. Insensitivity to the stakeholder's needs and failure to satisfy

them make the shareholder's profit maximization goals not only unachievable and unattainable but also unworthwhile (Pant & Piansoongnern, 2017). The theory further posits that, while organizations are more or less a constellations of competitive and cooperative interests, they provide frameworks for stakeholders' connections in pursuit of their objectives that always fall in a continuum between competition and cooperation (Haksever et al., 2004). The theory continues to argue that, an integration of CSR, corporate citizenship, sustainability, and stakeholder management is not the only key for business-societal relations but also for value creation which is the fundamental reason why corporations exist (Windsor, 2017). The main strength of this theory is its ability to obtrude responsibility on firms beyond mere regulatory and legal requirement, therefore, depicting organizations as more caring and less greedy. The paper is of the view that the arguments of this theory are suitable for underpinning strategic CSR, value creation, and shared value, which informs several constructs in the emerging phenomenon.

4.2 Shareholders Theory

The shareholder's theory is the foundation upon which the majority of criticisms and arguments against CSR are built (Castello, 2013). The theory argues that the only social responsibility of a business is to utilize the resources at its disposal and engage in activities aimed at increasing profits as long as the said activities are pursued within the confines of the rule of law and the rule of the game. The theory takes the traditional view of corporations and postulates that, the sole duty of a company is to maximize shareholder's wealth by delivering maximization of returns through growth in profits and share value as well as good dividend payouts. Therefore, management not only have an ethical duty and responsibility to shareholders to generate value, they also have no right to act on their own inclinations or make discretionary decisions on resource utilization for other purposes such as social benefit initiatives that have no economic value to the achievement of the company's financial goals (Saint & Stanton, 2007; Castello, 2013). The authors are of the view that the arguments of this theory are suitable to underpin the constructs of strategic CSR and value creation focus in a situation that brings about a phenomenon resulting from the deployment of Strategic CSR.

4.3 Resource-Based Theory

The resource-based theory offers another rationale for the explanation of arguments on the effect of strategic CSR on organizational performance. According to this theory, firm performance is significantly influenced by the physical, organizational, and human resources available to management. Organizations, therefore, develop strong competitive advantages by accumulating or controlling unique and inimitable bundles of resources and dynamic capabilities that not only integrate and build but also reconfigure internal and external competencies to address rapidly changing business operating environment (Barney, 2001). According to this theory, the firm's resources can either be tangible or intangible, and the firm's ability to outdo and outperform its rivals lies in its ability to have a unique and distinctive interplay of organizational physical and human resources. An organization's ability to successfully manage stakeholder relationship, as well as its capacity to care for the environment genuinely, can be an intangible resource capable of generating a competitive advantage that is sustainable in the long run (McWilliams & Siegel, 2006; Ntiamoah et al., 2014). While resource base theory has the advantage of being the main driving force in strategic management literature, it also complements the stakeholder theory in that firm competitiveness requires effective and efficient management of both organizational resources and stakeholder relations (Freeman, Harrison, Wicks, Parmer & Colle, 2010). We find that the arguments of RBV are relevant to the construct of CSR and that in its deployment as a form of strategic option, RBV will consider it a resource out of which organizations may derive value in line with the VRION Framework and ultimate performance.

4.4 Stewardship Theory

Stewardship theory posit that, while organizations are driven by profit or achievement of goals, most organizations do not view themselves from the simplistic and narrow perspective, but they consider themselves as a part of something bigger. The theory argues that ownership does not really own the company but merely hold it in trust, thereby intersecting with stakeholder's theory on organizational purpose or reason of existence. Managers should, therefore, be stewards whose collectivistic behavior is of higher reverence than self-serving and whose moral imperative is 'doing the right thing' without being consumed with excellence in financial performance (McWilliams & Siegel, 2006). The theory posits that, the driving force behind the board and management performance should be the desire to pursue organizational goals in an excellent and an honorable manner that not

only inspire confidence but also lead to relational reciprocity and long term relationships beneficial to all stakeholders (McWilliams & Siegel, 2006; Donaldson & Davis, 1991). We are of the view that the arguments of this theory support a strong case for the adoption of corporate CSR as a viable strategic option not only for non-profit but also for profit-oriented concerns.

4.5 Social Contract Theory

The social contract theory postulates that, all business operate under a hypothetical and unwritten contact with the society in whole and the society expects responsible conduct that is beneficial (Byerly, 2013). The theory argues that companies as legal persons consent either tacitly or explicitly some of their rights and freedoms to society in exchange of the protection of their right to do business and transact with the society. According to Mwangangi (2018), social contract is not only a relationship but it is also a mutual trust entrenched in company-stakeholder relationship management with an intention of defining an organization's explicit responsibilities such as generating returns for the investors, humane treatment of its employees, job creation for the society, respect for the rule of law as well as honoring tax obligation to the government, genuine care for the environment and honoring of supplier contracts. Companies not only need to seek favor and license to operate in the societies where they conduct business, but they also need to have a good working relationship with both internal and external players as they seek to provide products that inspire trust and loyalty in the market. The social contract theory strength lies in its recognition of the multiplicity of societal factors that promote good firm performance through a collection of contacts with stakeholders (Mwangangi, 2018; Byerly, 2013). The authors are of the view that the arguments of this theory form a strong basis for the support of the concept of shared value.

4.6 Triple Bottom Line Model

The TBL framework is generally defined as an accounting and reporting framework that goes beyond the traditional measures and metrics of return on investment, dividend per share, shareholder value and profitability to include both social and environmental dimensions and perspectives thereby giving more comprehensive and inclusive results of business activities along the people, planet and profit perspectives (Slapper & Hall, 2011). In line with the stakeholder theory, TBL acknowledges that the responsibilities of corporations go beyond shareholders to include other stakeholders who affect or are affected by the achievement of the organizational goals and objectives. TBL argues that companies' responsibilities and duties lies not only with the shareholders but also with the stakeholders and organizations should, therefore, be channels that coordinate stakeholder's interests while pursuing shareholder's need for profit and wealth maximization. TBL advocates for incorporation and adoption of three perspectives of performance, namely environmental, social, and financial. The TBL provides not only the basis upon which sustainability model is built but also backs up the cherished views of CSR that considers care for both environment and the people who include community, customers, and employees to be key in the promotion of organizational goals and in assuring longevity and competitive advantage that is sustainable. In this perspective, we are of the opinion that TBL offers an opportunity for broadening the scope of the dominant approach used in the measurement of the construct of performance so as to include dimensions going beyond objective indicators reflecting societal concerns.

4.7 Resource Dependence Theory

The theory postulates that an organization's behavior and action can be explained on the basis of its dependence on resources provided by the environment. The ability of an organization to bring about desired results and outcomes is constrained by the environment in which it operates and to understand its actions, you must be conversant with its ecology (Niehueser, 2008; Bondy 2008). The theory posits that; organizations depends on resources originating from the environment but are in the hands of other organizations. Organizations are therefore forced to depend on each other since the organization controlling the resources wields power. RDT focuses on the three environmental constructs of munificence, dynamism, and complexity that are built on the foundation of resource and uncertainty perspectives (Yeager et al., 2014). The environment is assumed to be comprised of scarce and valuable resources necessary for organizational survival and firms, therefore, strive to either minimize their dependency or maximize the rival's dependency through acquisition and control of the said resources. This theory is key since organizations do not operate in a vacuum or in isolation but are rather interacting with the environment constantly. Environment provides the context and the backdrop against which the organizations can be studied and

evaluated and is used assessment of the interplay between businesses and the salient stakeholders since the partnerships are controlled more or less by the party that holds more power irrespective of the role they play in value creation (Yeager et al., 2014; Bondy, 2008). Thus, the arguments of this theory underpin the construct of environmental dynamism by providing the theoretical framework upon which the discussions of the interplay between strategic CSR, value creation focus, and firm performance is built.

5.0 An Emerging Case for a New Theoretical Model

So far, this paper has covered a significant portion of the literature on Strategic CSR from both conceptual and theoretical standpoints. The essence of undertaking theoretical work is deemed necessary in scientific research in pursuit of knowledge as a discipline advances from its current state to new frontiers of knowledge. We regard this as key to advancing knowledge in strategic management in an attempt to integrate an otherwise neglected yet essential component of strategic management touching on CSR. However, while the literature contains sufficient arguments to justify a case for the integration of CSR in informing corporate-level strategy, we find it necessary to advance such a case through the route of a theoretical model. The development of new theories plays an important role in knowledge advancement. We are persuaded by the convictions drawn from the stream of researchers leaning towards the approach on theory before research advanced by Karl Popper and given prominence in the literature in scientific research in the social sciences (Nachmias & Nachmias, 2004; Kerlinger & Lee, 2000)

In the first attempt to provide the justification for a theoretical model, we point out from the literature reviewed what is emerging as is indicated by the nature of strategic CSR. It is emerging as a viable strategic option that firms can apply. Upon deployment, however, it brings the potential for possible outcomes of interests in strategic terms. The literature argued that due to its nature, it would have consequences that have implications on organizational capabilities and multiplicity of performance dimensions which may be conditioned by aspects of environmental dynamism. In this logic, it highlights the possibility of the emerging phenomenon with both theoretical and empirical implications (Murray, 2003; King & Zeithaml, 2001)

The second point the authors identify from the reviewed literature is what would constitute elements of the emerging phenomenon. A typical phenomenon requires a clear set of constructs with an understanding of their nature and appropriate indicators in a real-life situation. The reviewed conceptual and empirical literature has brought out a broad set of constructs, including CSR, strategic CSR, value creation focus, environmental dynamism, and firm performance. Within arguments of the conceptual and empirical literature, appropriate indicators are identified, which further enhance the possibility of modeling the phenomenon emerging from the deployment of strategic CSR. Thirdly, in modelling a phenomenon, theorizing requires identification of the constructs in a phenomenon and a clear indication of roles each is expected to play based on the reasoning advanced by Cooper and Schindler (2008), Sekaran (2003) and Nachmias & Nachmias (2004). Accordingly, a theory is described as a premise or a set of hypotheses for which there are deducible empirical consequences that have the capability to challenge the extant knowledge within the limits of essential bounding assumptions.

Based on this, the authors are of the view that since adoption and deployment of strategic CSR breeds a phenomenon of interest to both scholars and practitioners, proposing a theorem based on deployment of CSR reflecting its intermediate and ultimate outcomes as well as the contingent factors that condition the behavior of the phenomenon is necessary. The case is much more compelling, considering the growing need for strategic management to integrate societal concerns and reflect those concerns in the manner in which performance is measured. The reviewed literature has provided indicators drawn from a broad range of conceptual and theoretical literature that offer a balance between profit-oriented concerns and stakeholder-based concerns.

Lastly, developed theories require validation through empirical work. The emerging phenomenon stands to mark a journey of empirical interest to scholars. Even though debates continue pitting deduction on the one hand against induction on the other, we observe that in spite of the debates theories continue to play a critical role in the advancement of scientific knowledge in a discipline. Thus, proposing a new theoretical model goes a long way in

not only informing future empirical work but also in advancing authentic scientific knowledge in the area of strategic management involving the deployment of strategic CSR.

6.0 Proposed Conceptual Model

In line with the theoretical and empirical gaps identified in the review, the study proposes the following theoretical model to assess and explain the impact of strategic CSR on firm performance. The model is premised upon the four constructs of strategic CSR, value creation focus, environmental dynamism, and firm performance. Every construct studied played a salient role in building the phenomenon under study. The authors propose a new model that links strategic CSR, value creation focus, and firm performance against a backdrop of environmental dynamism. The model is summarized in figure 1.

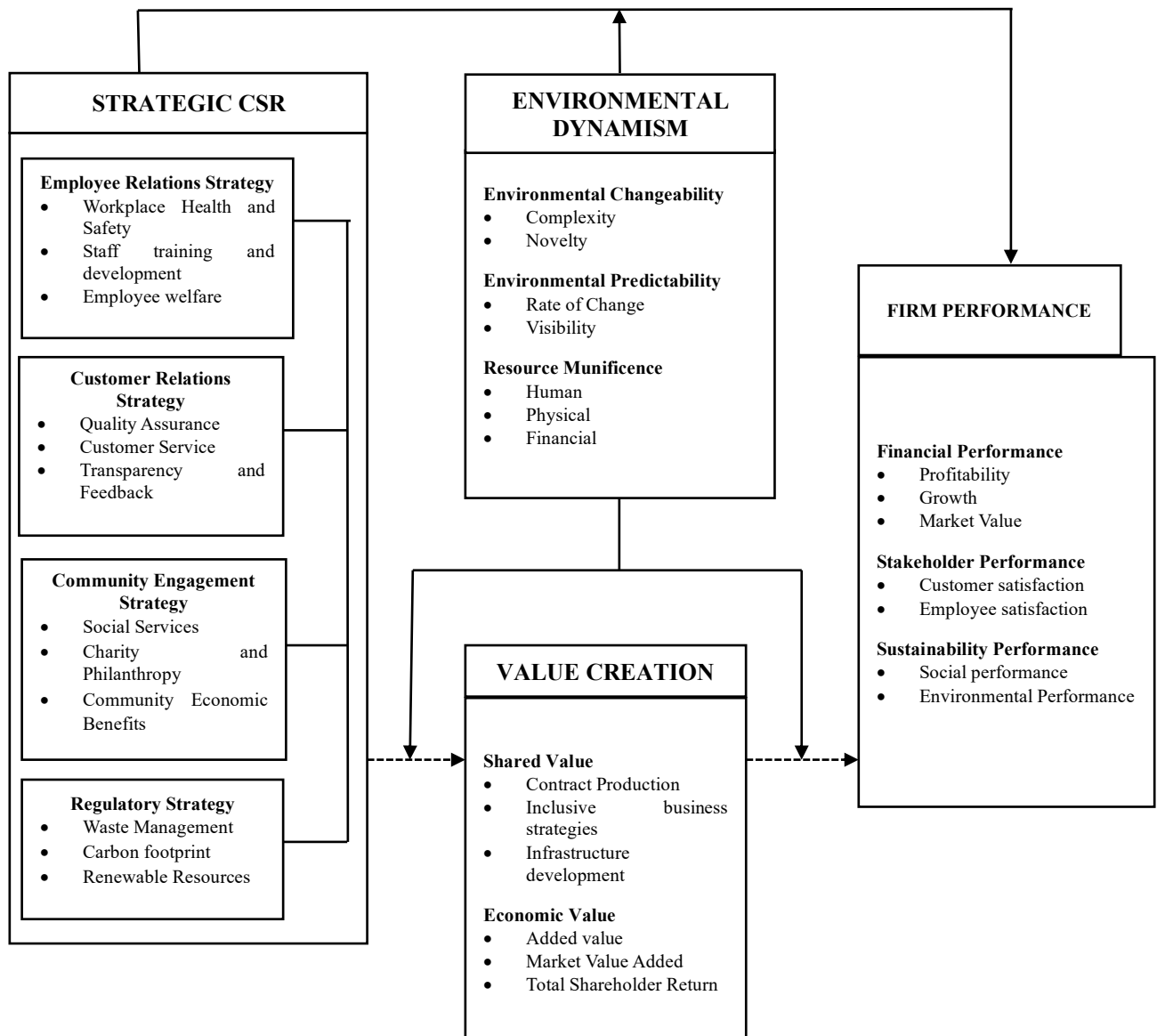


Figure 1: Theoretical Model linking Deployment of Strategic CSR with its Outcomes in Environmental Contexts.

6.1 Strategic CSR and Firm Performance

Execution of strategic CSR as a business strategy enables organizations to balance the interests of salient stakeholders who impact and are impacted by the achievement of organizational objectives and goals thereby creating an environment of peaceful co-existence and cooperation that leads to superior performance. We foresee the possibility for the existence of a relationship between the varied components of strategic CSR and firm

performance. Workplace health and safety, training and development, and employee welfare as embodied in the employees' relation strategy improve the morale and the motivation of the employees leading to improved performance (Mwangangi, 2018). Customer relation strategy in the form of quality guarantee, improved customer service, transparency, and feedback fosters customer loyalty and brand recognition, and subsequently improved performance. Respect for life, human dignity, the rule of law and the societies in which organizations operate leads to growth and development of cordial relations between corporations, the state, and societies in which those corporations do business. Good corporate-communal relations are foundations upon which better performing organizations are built. These relations not only become a crucial part of an organization's portfolio, but also a value creation leveraging capability and a bundle of resources relevant in long-term delivery of customer value and sustainable superb performance (Zubac, Hubbard & Johnson, 2010). Owing to the findings of previous research whose findings showed a relationship between some components of CSR and performance (Mwangangi, 2018; Al-Najjar, 2016; Pant & Piansoongnern, 2017; Husted & Allen, 2006), the authors, therefore, propose that:

Proposition 1: Execution of strategic corporate social responsibility will positively affect various dimensions of firm performance.

6.2 The Role of Value Creation Focus

Even though Strategic CSR presents the potential to influence the various dimensions of performance, the conditions under which such influence is exerted and sustained need attention. Under the reasoning of the RBV, Strategic CSR can be thought of a resource with attributes of strategic assets such that when deployed in an organization under normal circumstances will give rise to some intermediate state of capability as the strategy works on the systems to account for any variation in performance. We import this reasoning into the logic underpinning the cardinal responsibility of an organization of being to fulfill the financial obligations to the shareholder or investors by giving them a return on their investment. We observe that even though meeting shareholder obligations is key, yet the sustainability of this noble goal is dependent upon the value created and delivered to society. Corporations exist principally to create value and value is created for both the shareholders as the principal stakeholders and the other stakeholders who are affected by the organization's act of executing its strategies and achieving its objectives (Haksever et al., 2016). Value creation is, therefore, the act of combining organizational capabilities, competencies, and processes with the intention of delivering superior value to customers and economic profits to the organization. It is a catalyst and a competence that allows organizations to employ and combine resources at their disposal to not only satisfy their customers' needs but also build capabilities required for future success and longevity (Zubac et al., 2010)

Value created can either be economic or shared (Porter & Kramer, 2006; Wheelen & Hunger, 2010; Windsor, 2017). Economic value targets the shareholder as the key stakeholder and results in value addition to the organization and its standing in the market with the subsequent implication of guaranteeing the shareholder's long term financial security through increased shareholder return and wealth growth. Shared value is created as a result of organization generating surplus through addressing social issues of concern through the re-conception of products and markets along the value chain (Porter & Kramer 2006). Shared value, therefore, becomes the process of adopting operation practices and procedures that boost and enhance organizational competitiveness while advancing the economic interests of the company. Shared value creation purposes to create benefits to all the stakeholders benefiting the shareholders with stock appreciation and wealth growth, delivering quality and durable products to the customers, nurturing long term and mutually beneficial relationship with the suppliers, guaranteeing job security to the employees and promoting community success through job creation and corporate philanthropy. As a result of the findings of the previous research that has demonstrated a positive relationship between value creation, strategic CSR and firm performance (Husted & Allen, 2007; Talebenya et al., 2014; Gounder & Venkateshwarlu, 2017), the authors, therefore, propose that:

Proposition 2: There is a correlation between the CSR strategy deployed by a firm and value creation focus.

Proposition 3: Even though the deployment of CSR strategies affects firm performance, the degree of its effect is dependent on the nature of value creation focus adopted by the firm.

6.3 *The Role of Environmental Dynamism*

The emerging phenomenon so far described attracts typical characteristics of strategic thinking. A defining feature of strategic decisions is the attention given to the role of the external environment. Even though more recent scholarship has turned attention to the internal aspects of the firm through the RBV lens, calls have been made accompanied with evidence for the integration of environment focused theoretical approaches and with an internal focus on the firm (Mwazumbo, 2016; Kilika, 2012). The justification for the external environmental focus is due to the fact that Environmental dynamism has a bearing both on uncertainty and risk. Environmental stability-instability is a key determinant on the levels of uncertainty in the business environment that further determine the levels of risk that organizations can take or accommodate (Luxmore et al., 2012). Organization's ability to navigate the complex changes arising in the environment and to adapt to various scenarios it finds itself in determines how well it can execute strategies and conduct its operations. The environment is further complicated by the nature and level of resources available and at the disposal of the firm. Resources influence the managerial ability to exercise discretion and the organizational risk appetite. The higher the environmental dynamism, the higher the risk and managers in munificent environments have a higher appetite for risk making the relationship between munificence and dynamism to be inverse. The environment, therefore, determines strategic stance an organization will take and how well they will succeed. Use of strategic corporate social responsibility as a strategy for enhancement of competitive advantage and subsequent superior corporate performance will be dependent on the configurations of the environment and resources. Pursuant to the findings of the past researches that have showed a relationship between dynamism, strategic CSR and organizational outcomes (Baum & Wally, 2003; Goll & Rasheed, 2004; Luxmore et al., 2012), the authors thus propose that:

Proposition 4: Environmental dynamism mediates the relationship between CSR strategies adopted by a firm and firm performance

Proposition 5: The mediated effect of value creation on the relationship between CSR and firm performance will be moderated by the level of environmental dynamism.

Proposition 6: The relationship between CSR strategies deployed and value creation focus adopted is moderated by the extant level of environmental dynamism.

7.0 Conclusion

The purpose of the paper was to review extant conceptual, theoretical and empirical literature so as to provide an apprehension of the construct of Strategic CSR and its resultant outcomes in organizations and propose a fitting theoretical framework suitable for modeling the relationships among identified constructs in the emergent phenomenon. The construct was found to have a place in strategic management as a strategy that can enhance a firm's performance and competitive advantage. Strategic CSR, when combined with value addition through shared value, accords a firm a rare opportunity of simultaneously pursuing business goals and issues of social concern. The authors argued that the pursuit of profit maximization goal for shareholders does not have to be in isolation or competition with the needs of other salient stakeholders. The paper further highlighted the role played by the environment in governing the relationship between strategic CSR, value creation focus, and sustainable firm performance. The paper dispensed the conceptual understanding of each of the construct by identifying the relevant indicators as well anchoring each of the constructs on a theoretical framework premised on Stakeholder theory, RBV, Social Contract theory, Triple Bottom-line model and resource dependence theory.

In their presentation of this paper, the authors, however, are cognizant of certain limitations and constraints. First, though the literature was extensive, it was drawn from a few relevant disciplines considered to be key in the enhancement of the comprehension of the strategic management phenomenon in organizations. The paper, therefore, makes an invitation to the extant body of knowledge from a multidisciplinary approach with the intention of fortifying and enriching the ongoing discussion on the deployment of strategic CSR and its emergent outcomes. Secondly, the propositions the study makes are yet to be empirically validated. The authors therefore call on future researchers to consider the need for adoption of contexts upon which future studies can be based as well as translation of the proposed theoretical framework into an appropriate conceptual framework relevant in guiding

empirical studies that use the indicators of the constructs so as to validate the claims made by the propositions using factual data.

References

- Afrin, S. (2013). Traditional Vs. Strategic Corporate Social Responsibility: In Pursuit of Supporting Sustainable Development. *Journal of Economic Sustainable Development*, 4(20). https://doi.org/10.1007/978-3-642-28036-8_101507
- Agudelo, M. A., Davíðsdóttir, B. & Jóhannsdóttir, L. (2019). A Literature Review of the History and Evolution of Corporate Social Responsibility. *International Journal of Corporate Social Responsibility*, 4(1). <https://doi.org/10.1186/s40991-018-0039-y>
- Al-Najjar, F.J. (2016). Social Responsibility and its Impact on Competitive Advantage (An Applied Study on Jordanian Telecommunication Companies). *International Journal of Business and Social Science*, 7(2), 114-125.
- Ansoff, H. I. & McDonnell, E. J. (1990). *Implanting Strategic Management*. Cambridge: Prentice Hall.3
- Barney, J. (1991). Firm resources and sustained competitive advantage. *Journal of Management*, 17, 771-92
- Barney, J. (2001). "Is the resource-based view a useful perspective for strategic management research? Yes". *Academy of Management Review*, 26 (1), 41-6.
- Baum, J.R. & Wally, S. (2003). Strategic Decision Speed and Firm Performance. *Strategic Management Journal*, 24, 1107-1129
- Bondy, K. (2008). The Paradox of Power in CSR: A Case Study on Implementation. *Journal of Business Ethics*, 82(2).
- Brook, S. (2005). Corporate Social Responsibility and Strategic Management: The Prospects of Converging Discourses. *Strategic Change Journal* 14:401-411.
- Byerly, R. (2013). Business in Society: The Social Contract Revisited. *Journal of Organizational Transformation and Social Change*, 10 (1), 4-20
- Carrol, A. B. (2008). A History of Corporate Social Responsibility: Concept and Practices. *The Oxford Handbook of Corporate Social Responsibility*, Chapter 2:19-46.
- Carrol, A. B. (1991). The Pyramid of Corporate Social Responsibility: Toward the Moral Management of Organizational Stakeholders. *Business Horizons*, 34(4), 39-48.
- Castello, B.M. (2013). Shareholder Theory. In: Idowu, S.O., Capaldi, N. & Gupta, A.D (Eds). *Encyclopedia of Corporate Social Responsibility*. Springer, Berlin, Heidelberg.
- Cooper, D. & Schindler, P. (2008). *Business Research Methods*, 10th Edition, New York, McGraw-Hill/Irwin.
- Donaldson, L., and Davis, J. H. (1991). Stewardship theory or agency theory: CEO governance and shareholder returns. *Australian Journal of Management*, 16, 49-64.
- Dess, G.G., & Beard, D.W. (1984). Dimensions of organizational task environments. *Administrative Science Quarterly*, 29, 52-73.
- Dubach, B. & Machad, M. (2012). The Importance of Stakeholder Engagement in the Corporate Responsibility to Respect Human Rights. *International Review of the Red Cross*, 94 (887), 1047-1068.
- Elkington, J. (1998). Accounting for the Triple Bottom Line. *Measuring Business Excellence*, 2(3), 18-22.
- Ensign, P.C. (2001). Value Chain Analysis and Competitive Advantage. *Journal of general Management* 2(1),18-24.
- Freeman, R.E. (1984). *Strategic Management: A Stakeholder Perspective*. Englewood Cliffs, NJ: Prentice Hall.
- Freeman, R., Harrison, J., Wicks, A., Parmer, B., & Colle, S. (2010). *Stakeholder theory: The state of the art*. New York: Cambridge University Press.
- Gazzola, P. & Colombo, G. (2014). CSR Integration into the Corporate Strategy. *Cross-cultural Management Journal*, XVI, 2(6), 331-338.
- Goll, I. & Rasheed, A.A. (2004). The Moderating Effect of Environment Munificence and Dynamism on the relationship between Discretionary Social Responsibility and Firm Performance. *Journal of Business Ethics*, 49,41-54.
- Gounder, C. & Venkateshwarlu, M. (2017). Shareholder Value Creation: An Empirical Analysis of Indian Banking Sector. *Accounting and Finance Research*, 6(1), 148-157.
- Goyal, P. et al (2013). Corporate Sustainability Performance and Firm Performance Research. *Management Decision*, 51(2), 361-379.
- Haksever, G., Chaganti, R. & Cook, R. (2004). A Model of Value Creation: Strategic View. *Journal of Business Ethics*, 49(3), 295-307.
- Haycock, K., Cheadle, A. & Bluestone, K.S. (2012). Strategic Thinking: Lessons for Leadership from the Literature. *Library Leadership and Management Journal*, 26(3 /4), 1-23
- Herrala, M., Pakkala, P. & Haapasalo, H. (2011). Value Creating Networks- A Conceptual Model and Analysis. University of Oulu, *Research Reports in Department of Industrial Engineering and Management*, 4/2011.

- Hofman, P.S., Moon, J. & Wu, B. (2017). Corporate Social Responsibility under Authoritarian Capitalism: Dynamics and Prospects of State-led and Society Driven CSR. *Business and Strategy Journal*, 56(5), 651-671.
- Howieson, J., Lawley, M. & Hastings, K. (2016). Value Chain Analysis. An Iterative and Relational Approach for Agri-Food Chains. *Supply Chain Management*, 2 (3), 352-326.
- Husted, B.W. & Allen, D.B. (2006). Strategic Corporate Social Responsibility and Value Creation Among Large Firms: Lesson from the Spanish Experience. *Journal of International Business Studies* 37(6), 838-849.
- Husted, B.W. & Allen, D.B. (2007). Strategic Corporate Social Responsibility in Multinational Enterprises: Antecedent and Value Creation. *Journal of Business Ethics*, 74(4), 345-361.
- Kerlinger, F. N., & Lee, H. B. (Eds.). (2000). *Foundations of Behavioral Research*. Orlando, FL: Harcourt College Publishers.
- Kilika, J. (2012). *Institutional Context, Collaboration, Human Resource Development, Infrastructure and Performance of Universities in Kenya*. Unpublished PhD Thesis, Kenya: University of Nairobi.
- King, A. & Zeithaml, C. (2001). Competencies and Firm Performance: Examining Causal Ambiguity Paradox. *Strategic Management Journal* 22 (1), 75-99.
- Li, J. & Guo, H. (2018). Discussion on The Key Issues of Strategic Management of Corporate Social Responsibility in China. *Open Journal of Business and Management* 6, 944-952
- Luxmore, S.R., Tang, Z. & Hull, C.E. (2012). When Corporate Social Responsibility Matters: An Empirical Investigation of Contingencies. *International Journal of Corporate Governance* 3, 143-162.
- Lynch, R.L. (1990). *Corporate Strategy*, 4th Edition. Pearson Education Publishers, Boston.
- Madhani, D. P. (2010). *Resource Based View (RBV) of Competitive Advantage: An Overview*. ICFAI University Press.
- Mainardes, W.E., Ferreira, J.J. & Raposo, M.L. (2014). Strategy and Strategic Management Concept: Are They recognized by Management Students. *Economike a Management*, 18(1), 43-61.
- Marshall, A. (1920). *Principles of Economics*, 8th Edition. New York, Palgrave Macmillan.
- Matten, D. (2008). "Implicit" and "Explicit" CSR: A Conceptual Framework for a Comparative Understanding of Corporate Social Responsibility. *Academy of Management Review*, 33 (2), 404-424.
- Mc William, A. & Siegel, D.S. (2011). Creating and Capturing Value: Strategic Corporate Social Responsibility, Resource Based Theory and Sustainable Competitive Advantage. *Journal of Management*, 37(5), 1480-1495.
- Mc William, A. & Siegel, D.S. (2006). Corporate Social Responsibility: Strategic Implications. *Journal of Management*, 43 (1), 0022-2380.
- Medis, A., Yong, D., Khatibi, A. & Azam, F. (2016). Corporate Social Responsibility a Business Strategy or a Social Endeavour: Review of Literature for Sustainability Approach. *Journal of Economics & Sustainable Development*, 19, 93-125.
- Meyer, K.E., Wright, M. & Pruthi, S. (2009). Managing Knowledge in Foreign Entry Strategies: A Resource Based Analysis. *Strategic Management Journal*, 30 (5), 557-574.
- Mikolajek-Gocejna, M. (2016). The Relationship Between Corporate Social Responsibility Na Corporate Financial Performance- Evidence from Empirical Studies. *Comparative Economic Research*, 19(4), 68-84.
- Militaru, G.U. & Ionescu, S. (2006). The Competitive Advantage of Corporate Social Responsibility. *UPB Science Bulletin, Series D*, 68(2), 89-103.
- Mintzberg, H. (1994). The Rise and Fall of Strategic Planning. *Harvard Business Review, January/February Issue 1994*:1-14
- Murray, P. (2003). Organizational Learning, Competencies and Firm Performance: Empirical Observations. *The Learning Organization*, 10 (5), 305-316.
- Mwangangi, A. (2018). *Effect of Corporate Social Responsibility on Performance of manufacturing Firms in Kenya*. Unpublished PhD Thesis, Kenya: Jomo Kenyatta University of Agriculture and Technology.
- Mwazumbo, P.M. (2016). *Organizational Resources, Dynamic Capabilities, Environmental Dynamism and Organizational Performance at Large Manufacturing Companies in Kenya*. Unpublished PhD Thesis, Kenya: University of Nairobi
- Nachmias, C.F. & Nachmias, D. (2004). *Research Methods in Social Sciences*, 5th Edition. St. martin's Press.
- Niehueser, W. (2008). *Resource Dependency Theory: How Well does it Explain Behavior of Organizations? A European Perspective* Human Resources, Labor Relations and Organizations, pp192-219.
- Ntiamoah, B.E., Eyyiri, P.O. & Kwamega, M. (2014). Corporate Social Responsibility Awareness, Firm Commitment and Organizational Performance. *Journal of Human Resource and Sustainability Studies*, 2, 91-101.
- Pant, R. & Piansoongnern, O. (2017). Impact of Corporate Social Responsibility on Sustainable Competitive Advantage: A Case Study of Leading Noodle Companies in Nepal. *International Journal of Social Sciences and Management*, 9(4), 275-283.
- Porter, M.E. (1985). *Competitive Advantage: Creating and Sustaining Superior Performance*, Free Press. New York, McMillan.

- Porter, M.E. (1996). What is Strategy. *Harvard Business Review, Onpoint Article, November-December 1996*:1-20.
- Porter, M.E. & Kramer M.R., (2006). Strategy and Society: The link Between Competitive Advantage and Corporate Social Responsibility. *Harvard Business Review, 89*(1), 62-77.
- Porter, M.E. & Kramer M.R., (2011). Creating Shared Value. *Harvard Business Review, December 2006*:1-14.
- Reinhardt, F.L. & Stavins, R.N. (2010). Corporate Social Responsibility, Business Strategy and the Environment. *Oxford Review of Economic Policy, 26*(2),164-181.
- Roni, M. et al (2016). Sustainable Manufacturing Drivers and Firm Performance: Moderating Effect of Firm Size. *International Journal of Advanced and Applied Sciences, 4* (12)
- Rothaermel, F.T. (2017). *Strategic Management*, Third Edition. McGraw Hill Education, New York.
- Ruf, et al (2001). An Empirical Investigation of Relationship between Change in Corporate Social Performance: A stakeholder Theory Perspective. *Journal of Business Ethics 32*, 143.
- Saint, D.K. & Stanton, J. (2007). The Stakeholders and Shareholders Theory of Corporate Purpose. Work available at <http://www.knowledgeworks.com>.
- Salvioni, D.M., Gennari, F. & Bosetti, L. (2016). Sustainability and Convergence: The Future of Corporate Governance Systems. *Sustainability 2016, 8* (1203).
- Sekaran, U. (2003). *Research Method for Business: A Skill Building Approach*, 4th Edition. John Wiley, New York.
- Selyam, M. et al (2016). Determinants of Firm Performance: A subjective Model. *International Journal of Social Science Studies, 4* (7), 90-100.
- Slapper, T.F. & Hall, T.J. (2011). The Triple Bottom Line: What is it and How Does It Work? *Indiana Business Review Vol. 86* (1)
- Smith, W.L., Hillon, Y.C. & Liang, Y. (2018). Reassessing Measures of Sustainable Firm Performance: A Consultant Guide to Identifying Hidden Costs in Corporate Disclosures. *Business Strategy and the Environment, 2018*, 1-13.
- Talebenya, G., Salehi, M., Valipour, H. & Zahra, Y. (2014). An Empirical Study of Value Creation Criteria: A Case of Iran. *Timisoara Journal of Economics*.
- Taouab, O. & Issor, Z. (2019). Firm Performance: Definition and Measurement Models. *European Scientific Journal, 15*(1), 96-106
- Thompson, A. et al (2018). *Crafting and Executing Strategy: The Quest for Competitive Advantage*. McGraw Hill Education, New York.
- Wheelen, T. & Hunger, J. (2010). Concepts in Strategic Management and Business Policy: Achieving Sustainability. Pearson, Prentice Hall, New Jersey.
- Windsor, D (2017). Value Creation Theory: Literature Review and Theory Assessment. *Business and Society 360, 1*, 75-100.
- Yeager et al (2014). Community Engagement in Higher Education: Policy Reforms and Practice. Sense Publishers, Boston.
- Yuan, W., Bao, Y. & Verbeke, A. (2011). Integrating CSR Initiatives in Business: An Organizing Framework. *Journal of Business Ethics 101*(1), 75-92.
- Zubac, A., Hubbard, G. & Johnson, L. (2010). The RBV and Value Creation: A Managerial Perspective. *European Business Review, 22* (5), 515-538
- Zhang, J., Wang, Y. & Li, C. (2011). Maintainance Organization Value Chain Analysis and its Formalization. *Applied Informatics and Communication, ICAIC 2011 Communication in Computer and Information Science, 226*.

Estimating the Value of the Lebanese Oil Resources

Modeling and Forecasting Oil Price

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Abstract

The aim of this paper is to estimate the value of the Lebanese oil resources. It presents an overview of the natural resources within the Lebanese territories and economic zone. Furthermore, it analyses the oil spot price characteristics and volatility. It studies the oil future market while exploring the relation between speculation and spot oil price in the short run. Findings prove that in the short run, changes in oil inventories do not Granger cause changes in oil price, neither does the change in future prices. However, outcomes show that in the short run, the change in gold price granger causes the oil spot price. Additionally, in the aim of forecasting accurate oil price, the paper builds a Dynamic OLS equilibrium. The model includes the oil demand, the oil supply, the oil inventories, the USD/SDR exchange rate, the Gold price, and the open interest contracts in futures market as speculation effect. Eventually, with an estimate of the volume of the resources and the price forecasts until 2025, the paper forecasts the value of the Lebanese resources.

Keywords: Dynamic OLS, Future oil markets, Gold price, Lebanese oil resources, Open interest, Spot oil price

1. Introduction

The Levant basin contains large Petroleum resources, a discovery that dates more than a century. However, it was until the year 2010 that the global interest in these resources grows significantly. Lebanon, a country with no petroleum production whatsoever, is trying to draw benefits from the oil and gas reserves it holds mostly in its offshore economic zone. Lebanon imports the vast majority of its energy demand, and oil as a vital energy source represents a high significance to the Lebanese transportation, electricity production, and industries. Therefore, the oil price fluctuation impacts the Lebanese economy and wellbeing, particularly if the country starts producing its oil resources.

Oil price volatility will impact the Lebanese trade, the labor market, and the household expenditures. Hence, it is important to investigate the oil price volatility and to understand the factors influencing the price. Which aspects of the market interpret the price fluctuation? The two accepted common factors are the demand and supply. Besides that, the inventory levels might act as an absorbent for the demand and supply shocks, therefore influence prices. Furthermore, the volatility of the price and the open interest for the future contracts might conclude the impact of speculation on oil prices. Oil contracts are settled in the US dollar, meaning that for every oil contract transaction, a US dollar transaction is mandatory. Therefore, the exchange rate of the USD against major currencies might influence Oil price. Likewise, Gold price is known as a safe haven within the commodity market. In moments of low confidence in the oil markets, investors prefer investing in Gold, explaining the probable impact of Gold price on the oil price. Consequently, the paper hypothesis states that in addition to the global supply and demand, the following four factors may influence the oil prices: inventory levels, gold price, speculation, and exchange rates.

For this purpose, after investigating the price volatility and characteristics, the study explores the relation in the short run between the oil spot price and each of: the inventory levels, the speculation, and the Gold price. The paper then develops a dynamic OLS model where the oil price, the oil supply and demand, the inventories, the speculation, the gold price, and the SDR exchange rate are associated in a long-run relationship.

This paper is divided into 8 main sections, section one being the introduction. Section 2 presents the literature review. Section 3 explores an overview of the Lebanese resources. Section 4 investigates the oil price characteristics and volatility. Section 5 analyses the fundamental factors influencing the oil price. Section 6 inspects in a short run granger causality testing the relationship between the oil price and each of the Gold price, inventories, and the speculation impact. Eventually, section 7 builds a dynamic OLS model for oil price equilibrium in the long run, and the last section concludes.

2. Literature Review

The contemporary geological studies suggest the presence of petrol and heavy hydrocarbon in the Levant basin region. Though, investors did not show interest in any production, since the operations and processing were expensive, and the Lebanese civil war suspended any further work in the domain. However, after the civil war, geophysical experts regained interest and continued investigating the Lebanese offshore area. Likewise, Rahim (2013) studied a few aspects of the Lebanese oil and gas potential. Lebanon imports oil derivatives nearly 27% of his total value of imports, and about 13.4% of his GDP. The 3D seismic studied over 70% of the exploitation zone of 22730 sqm. The study showed that Lebanon has gas in his northern, central, and southern territorial water, and it holds 25 Trillion Cubic Feet (TCF) of natural gas.

Econometric modeling of energy demand provides information on income and price elasticity. Early papers study industrialized countries such as Pindyck (1980) or Douglas Bohi (1981) while more recent work has addressed the problem of co-integration among variables using primarily correction methods such as Bentzen (1993). Few studies have been directed towards investigating the demand for energy in the developing countries such as Munasinghe (1990) and Elton (1996). Furthermore, along with all other pricing theories, demand and supply for energy are the main factors that drive the oil and gas prices back to another equilibrium point. Zamani (2004) presented a forecasting model accounting for both the Organization of the Petroleum Exporting Countries (OPEC) oil supply and OECD stocks and non-OECD demand. Moreover, Shiu-Sheng Chen and Hung-Chyn Chen (2007) investigate the long-run relationship between oil prices and real exchange rates by using a monthly panel of G7 countries from 1972 to 2005. The study tests the co-integration between exchange rates and real oil prices. Results prove the link between the two variables and suggest that real oil prices might be the dominant source influencing the real exchange rates. In the next step, the study uses panel predictive regression to examine if real oil prices can forecast future real exchange returns. Results also suggest that real oil prices have significant forecasting power.

On another hand, Michael Ye, John Zyren and Joanne Shore (2002) forecasted the crude oil spot price using OECD Petroleum Inventory Levels. Their work analyzed how inventory levels influence the oil price, the study used dynamic OLS forecasting model. It demonstrates the relationship between OECD petroleum inventories and WTI

prices in a period from 1992 to 2001. The correlation coefficient proves the expected negative price-inventory relationship, yet the Johansen Co-integration test finds no co-integration relation between them.

Additionally, Ghalayini (2015) constructed a model for long-run equilibrium. Findings prove that in the short run, changes in oil inventories Granger cause changes in oil price. In the long run, however, findings prove that, the oil demand, the oil supply, the \$/SDR exchange rate, the speculation in future oil market and the oil inventories are associated in a long-run relationship.

In this work, other than exploring the Lebanese resources, the paper extends Ghalayini (2015) model by including Gold price as sixth explanatory variable, and implements the dynamic OLS as long-run equilibrium model.

3. Overview of the Lebanese resources

The interest in the petroleum resources within the Lebanese territory dates back to the French mandate since 1925. From that time, Lebanon onshore witnessed the drilling of several wells, some of them with depth up to 3000m, without any actual oil findings. In 2013, the British Spectrum surveys showed that the oil reserves in Lebanon could be worth 140 billion USD. In the same year, in a study of the northern offshore near the maritime border with Cyprus and Syria, the French survey Beicip-Franlab reported between 440 and 675 million of barrels of oil, and 15TCF of natural gas.

Furthermore, the US Geological Survey, in 2010, estimated a mean of 1.7 billion barrels of recoverable oil and a mean of 122 trillion cubic feet (TCF) of recoverable gas in the Levant Basin Province. Lebanese authorities have estimated that the country's waters could hold 96 trillion cubic feet of natural gas and 865 million barrels of oil after implementing studies on 45% of the territories and with a 50% probability.

While those numbers are a fraction of the reserves held by gas powerhouses such as Russia and Qatar, the U.S. Geological Survey estimates that the East Mediterranean basin, which also includes the territorial waters of Cyprus, Lebanon, and Egypt, may hold as much as four times the estimates.

Moreover, at this stage, all estimations of the resources stay inaccurate, and numbers presented are widely variable. The highest income to a country from exploring Oil and gas resources is the profit share from the production. Under the arrangement between the Lebanese Government through the Lebanese Petroleum Administration and the contractors, the ownership of the resources remains with Lebanon and the latter contracts the petroleum company to extract and develop the reserves.

Moreover, Lebanon will benefit mostly from its share from the production of the energy sources, even though and according to the arrangement, a minimal part of the production profit would be grant to the contractor company.

Furthermore, another profit to the government are royalties. Royalties are payments to the owner of a property, such as natural resources. In other terms, those who wish to use the resources to generate revenue will have to pay the owner of the property an amount called Royalty. Royalties represent a way to compensate the owner for the asset's use, along with taxes and profit shares.

Lebanon will benefit from the development of the oil and gas sector through the fiscal role. Such financial income thru generating taxes and other revenues to the government represents an important benefit to the country. One of the most important benefits for a country from the development of the oil and gas sector is likely to be its fiscal role in generating tax and other revenue for the government. Policymakers will also have to decide on the treatment of indirect taxes such as VAT and customs duties.

4. Oil price statistical characteristics and volatility

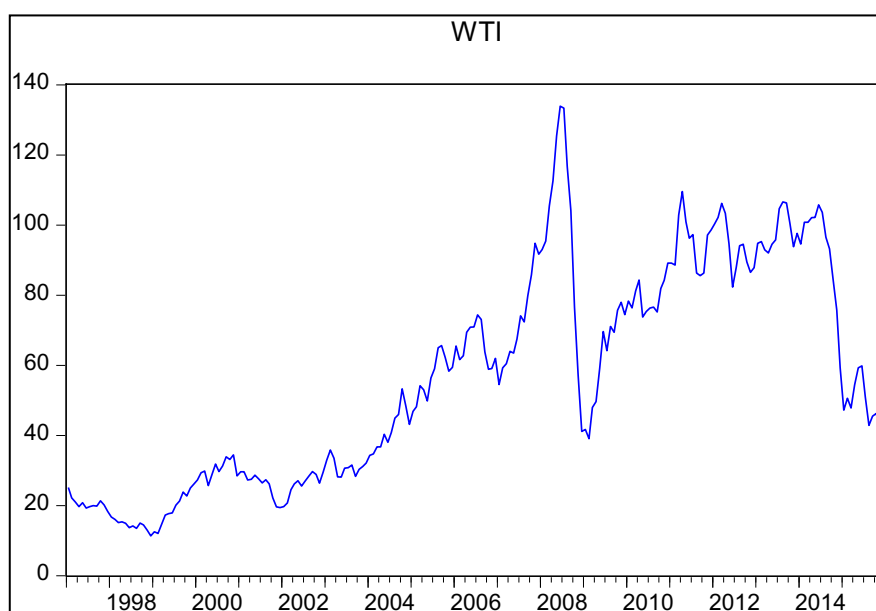
There are many types of oil. They differ in their resistance to flow, in how toxic they are, and how quickly they evaporate. The two most common differences are "light" or "heavy" according to the density of the crude and their

API gravity¹, as well as "sweet" or "sour" according to the quantity of sulfur in it. The lighter the crude is, the lower is its density, it flows easily at room temperature, it has a high API gravity, and low wax content. It also contains high concentrations of toxic composites. However, the Middle East area mostly include heavy oil reserves underground, therefore, it is more probable that the oil extracted from the Lebanese territory would hold the same aspects as the remaining middle east countries of heavy oil.

The three main oil benchmarks are: West Texas Intermediate (WTI) which has an API gravity of 39.6° API, the Brent Crude with 38.06° API, and the Dubai Crude is 31° API. The WTI benchmark listed in the New York Mercantile Exchange (NYMEX) is the most traded commodity, and it is used in this paper.

During the financial market crisis of 2008, the price of Oil experienced a significant decline from the 147.27\$ a barrel peak in July 2008, into a 30.28\$ a barrel low in December 2008 (Fig. 1). The price then recovered to an 85\$ a barrel average after the crisis. A major change in demand or supply implies a change in prices. On the other side, a major increase or decrease in oil and gas prices, affects both economic and political situations, and can lead to turmoil and wars.

Figure 1 : Monthly real WTI spot price



Monthly real WTI spot price (dollars per barrel) from 1 January 1996 until 31 December 2014 Source: realized by the author based on data from the US Energy Information Administration (EIA).

4.1. WTI descriptive statistics:

The paper calculates the monthly Real WTI and Real Henry Hub prices by dividing the nominal WTI and Nominal Henry Hub spot prices by the monthly US Consumer Price Index (CPI) based upon a 1982 Base. The Oil and Gas prices are from US Energy Information Administration (EIA) and CPI index from the US bureau of labor statistics. According to Jarque–Bera (13.25561), the series is not normally distributed with probability (0.001) is less than 5 %. The series is negatively skewed (-0.337351), which might result in negative outcomes. Kurtosis (2.03041) is less than three, with relatively low value, which implies greater investment risk.

4.2. WTI price volatility:

Volatility is a rate at which the price increases or decreases for a given set of returns ($R_t = \log p_t - \log p_{t-1}$). Volatility is measured by calculating the standard deviation of the annualized returns over a given period of time.

¹ API gravity: Means the American Petroleum Institute gravity, and it is a measure of how heavy or light petroleum liquid is, compared to water.

Generalized autoregressive conditional heteroskedasticity (GARCH) formulation has been first proposed by Bollerslev. Heteroskedasticity designates the irregular pattern of variation of a variable. Essentially, where there is heteroskedasticity, observations do not conform to a linear pattern. Instead, they tend to cluster. The result is that the conclusions and predictive value one can draw from the model will not be reliable. In finance, this model is used to estimate the volatility of returns.

It tests then an equation specification for the mean of the return series (1) and an equation for the conditional variance of the returns (2):

$$R_t = \log p_t - \log p_{t-1} = c + \epsilon_t \quad (1)$$

$$\delta_t^2 = \omega + \alpha \epsilon_{t-1}^2 + \beta \delta_{t-1}^2 \quad (2)$$

Where $\epsilon_t \approx N(0, \delta_t^2)$ and $\delta_t^2 = E(\epsilon_t^2)$.

4.2.1. Stationary tests:

The ADF (Dickey David & Fuller Wayne, 1979) unit root test estimates a regression for each series, hence simulating critical values based on each sample details and size. The process of testing the hypothesis adopts a null hypothesis of a unit root ($H_0: \alpha = 0$) versus the alternative of a stationary process $H_1: \alpha > 0$.

The Phillips Perron unit root test (PP) involves estimating a non-augmented version of regression without the lagged difference terms. PP unit root test practices a non-parametric method to control for serial correlation under the null hypothesis. H_0 and H_1 are the same as in the ADF test; yet, the unit root test in the PP is based on its own statistic.

The ADF and PP tests show that at level, there is a unit root in the real oil price in log form. However, taking in differences, prices become stationary, and the series is then integrated of order 1.

Table 1: ADF and Phillips Peron test results for monthly real WTI

		t-Statistic	Log rWTI Prob
At level	Augmented Dickey-Fuller test statistic	-2.01875	0.2786
At level	Phillips-Perron test statistic	-1.97223	0.2988
First Diff	Augmented Dickey-Fuller test statistic	-7.75312	0
First Diff	Phillips-Perron test statistic	-7.68895	0

ADF and Phillips Peron test results for monthly real WTI price series expressed in log, from 1 January 1996 until 31 December 2014. Source: Calculated by the author using Eviews data collected from EIA.

4.2.2. GARCH results:

After testing the stationary of the WTI real price, the unit root in the real oil price series in log form is confirmed by the Augmented Dikey Fuller (ADF) and Phillips-Perron tests. The paper then conducts the GARCH model, the probability values are written in parenthesis under each coefficient. Equation (3) represents GARCH (1,1) model estimations:

$$\delta_t^2 = 0.001407 + 0.270844 \epsilon_{t-1}^2 + 0.541476 \delta_{t-1}^2 \quad (3)$$

(0.1595) (0.0111) (0.0104)

The probability for the α and for β are significant (less than 5%). The sum of ARCH and GARCH ($\alpha + \beta$) is $0.270844 + 0.541476 = 0.81231$, indicating that the volatility shocks are persistent, and that oil price is volatile.

5. Fundamental factors influencing the Oil price

As a rule, the two factors that mostly affect any price are the supply and demand, therefore the typical fundamental reasons of price volatility reside in the change of the world supply or production and in the world demand or consumption. However, this change in supply and demand does not have the sole impact on prices and does not

seem to be the only trigger of the price volatility on the market, it is important to include several other factors that seem to affect oil price significantly.

Furthermore, inventories level is very crucial in estimating prices, it is considered as a precaution measure and as a balance point between the demand and supply. In other terms, a high production exceeding the world demand can result in increasing the inventories quantities. At the opposite, in times of low supply and an increase in the demand for energy, the countries will consume from their inventories to cover the lack and rectify the balance.

In addition, notably, all oil contracts are traded using the US dollar as an exclusive currency. The US dollar is the benchmark pricing for most commodities, and it is the reserve currency of the world, which explains the high dependency of oil on the US dollar. As an example, the Euro area imports most of its oil consumption, therefore, to reduce the impact of high oil price, the European Central Bank (ECB) prefers a higher EUR/USD rate.

Other than the exchange rates, the supply and demand chain, and inventories, the paper covers the impact of speculation on energy pricing. As a start, the financial future market answers the oil rates. A contract in the future market is an agreement that gives the buyer and seller the right to buy or sell oil barrels at a future date and with a predefined price, and the obligation to settle their part of the contract at that specified date.

Subsequently, the majority of traders are the speculators, who aim to make a profit from the change in prices. While trying to predict the future trend, they aim to buy on low prices and sell at the higher price, and in contrary.

5.1. Oil Demand:

The Organization of Economic Cooperation and Development (OECD), consisting of the advanced countries such as the US and most European countries, represent more than half of the world demand for Oil. Growth in the world economy, especially in the emerging economies, requires more energy. The world economy is expected to double over the next 20 years, according to the BP outlook; the transport sector contributes to the biggest part of the world's liquid fuel consumption, with a 60% share of total consumption. Currently, more than half of the world oil demand comes from only 17% of the world population, while India and China represent the two highest population in the world, their growing economy, and progress will probably lead to an excessive growth in the Oil demand.

5.2. Oil supply:

The Organization of the Petroleum Exporting Countries members produce about 40 percent of the world oil and represent about 60% of the world international oil trade, according to the EIA report in 2013. The other 60% of the world production reside in the non-OPEC countries, namely North America, and Russia.

OPEC production policies and production targets are a major factor in affecting oil prices. Changes in the Saudi Arabia policies and production frequently affect prices, because the kingdom represents OPEC's largest producer. During the period of increasing oil and gas prices, from 2003 until the financial crisis of 2008, OPEC's production levels were low, limiting its ability to respond to the surge in the demand and the increase in prices. The world supply about 91.7 million bbl. per day in 2015, the Middle East represents the highest share, with a 32.8% of the world supply (Oil Production levels, 2016).

5.3. Oil inventories:

The supply or demand impact can be absorbed by the inventories levels. Example, if supply and demand both increased, the impact on the prices can be minimal. While, if supply increased, and demand maintained the same pace, the level of inventories can absorb the impact, for a short term, until eventually affecting the oil and gas prices. Nearly 50 percent of total inventories are held as US Ending Stocks of Crude Oil mostly by the federal government in the Strategic Petroleum Reserve (SPR).

5.4. Oil Speculation:

Oil spot price is the current price of the commodity at which one can buy or sell for immediate delivery and payment, at a specific time. Futures prices are the settlement price that both the buyer and seller agree on, for future transactions, and for future deliveries. Futures represent the anticipation of investors concerning the

predicted future price of oil, especially for the long term. Futures also contain information about predicted future trends, movements, and anticipations. Hence, the future price does impact investments in spot prices. This large demand for futures contracts shakes the pricing of futures deliveries, same way as the demand for physical delivery affects spot prices.

5.5. Gold Price:

The link between gold prices and energy prices is strong. When the US dollar drops in price, the assets that are dominated in the USD increases in value, such as the gold and the energy prices. Moreover, the Inflation rate is another justification to the relation between gold and energy prices. When oil prices increase, inflation typically increases, and while gold is the "Safe Haven," it is the hedging commodity against inflation, meaning investments surges on gold, therefore gold prices increases as well.

5.6. Exchange rate:

Primarily, it is elementary to include the impacts of the world's biggest powers and economies, into the estimation model. One of the main indicators of the wellbeing of an economy in a certain country is the exchange rate of its national currency. Therefore, implementing a Special Drawing Rights (SDR) basket of the main influencer in the energy market can maintain a higher efficiency in the estimation model.

For this point, the IMF holds an SDR as a basket of the five main currencies in the world; the US dollar (USD), the Euro (EUR), the Chinese Renminbi (RMB), the Japanese Yen (JPY) and the British pound (GBP).

Since all oil and gas contracts are denominated in the United States Dollar, and since the European Union represents a major importer of oil, a significant increase in the price of oil implies a lower purchasing power petroleum products.

ECB monetary policy advises an appreciation of the EUR/USD parity, such improvement in the European currency makes it cheaper for the Europeans to buy oil and gas contracts. The appreciation of the euro since 2002 has helped protecting the euro area from the effects of the rising oil prices.

Japan's main consumption of oil is due to transportations, industrial, and chemical sectors. The nation consumes around 4million barrels of oil per day, according to the EIA and by that represents the fourth largest petroleum consumer in 2016.

China remains the world's largest energy consumer, with a 23% share of the global energy consumption, according to the annual BP report to the year 2016. Its oil production witnessed the largest decline ever, and its net oil imports increased by 9.6% the largest annual increase in the country's history. The BP report proclaimed that China's oil import dependency ratio rose to its highest 68% ratio, in 2016.

6. Short-run relationship between oil price and fundamental factors

The theory of supply and demand is simple; an increase in demand or in a decrease in supply will eventually end up with a higher price, while a decrease in demand or increase in supply will reflect lower oil prices. The other fundamental factors might differ in simplicity.

This paper proceeds by testing the short-run relation between the oil price and each of the following: inventories, futures contracts, and gold price.

6.1. Methodology:

A recognized way to statistically test whether one variable leads another or inversely is the granger causality testing, This test identified by Granger (1969), and using the F statistics, and the past values of the two variables X and Y examines whether a lagged information on a variable Y leads to any significant information about the other lagged variable X (4).

If yes, then Y does Granger-cause X. If not, then Y does not Granger-cause X

X does Granger-cause Y , if Y can be well predicted using the histories of both X and Y than by using the history of Y alone.

$$X_j = c_1 + \sum \alpha_j X_{t-1} + \sum \beta_j Y_{t-1} + u_t \quad (4)$$

Lag length and Stationary tests are an important step before going through the Granger Causality test. Thus, the prior step is to analysis whether individual series are stationary.

6.2. Variables for granger causality:

The variables for the WTI granger-causality Testings are as follow:

- The monthly real spot WTI price (OilP) collected from the EIA from January 2005 until December 2015, totaling 132 observations.
- Monthly future price series of each future WTI contract for 1, 2, 3 and 4 months (OilF1, OilF2, OilF3, and OilF4 respectively) collected from the EIA from January 2005 until December 2015, totaling 132 observations.
- The U.S. monthly Ending Stocks of Crude Oil in Thousand Barrels (Oil_inv) including SPR (strategic petroleum reserves, with mostly crude oil) collected from the EIA from January 2005 until December 2015, totaling 132 observations.
- The Monthly Gold price collected from FastMarkets & Denver Gold Group from January 2005 until December 2015, totaling 132 observations.

6.3. Stationary testing:

Lag length and Stationary tests are an important step before going through the Granger Causality test, the table 2 shows the results of “Augmented Dickey Fuller test” identified by Dickey and Fuller, to test the presence of a unit root. In addition, it shows the best lag to be used, using the Akaike information criterion (AIC). All variables are taken in log form.

Table 2 : ADF results for spot price, futures, and inventories

Variables	At level		At First Difference	
	t-Statistic	Prob.*	t-Statistic	Prob.*
Log OilP	-2.01875	0.2786	-7.75312	0.0000
log OilF1	-2.32288	0.1664	-7.5318	0.0000
log OilF2	-2.32288	0.1664	-7.43689	0.0000
log OilF3	-2.29732	0.1744	-7.4136	0.0000
log OilF4	-2.29654	0.1747	-7.41001	0.0000
log Oil_Inv	-2.07038	0.257	-7.53741	0.0000
log gold	-1.942538	0.3112	-6.181509	0.0000

Table 2: ADF test results for the oil price, oil futures, inventories, and gold price expressed in log, from January 2005 until December 2015. Source: Calculated by the author using Eviews. Data collected from EIA and FastMarkets & Denver Gold Group.

The ADF test results indicate that all series in log form are integrated of order 1. The study considers the series in difference before running the Granger causality testing.

6.4. Granger causality:

The Granger Causality Test follows a null hypothesis of "Ho: No Granger causality of one variable on the other." Using the F statistics, and past values of two variables results show acceptance or rejection of the null hypothesis. If rejected, then Y does Granger-cause X . If accepted, then Y does not Granger-cause X .

The Granger causality test results reported in table 3 indicate that neither the volume of inventories nor the future oil price for the four contracts, do granger cause the spot oil price. However, the results show that the gold price does Granger cause the oil price and that oil price does granger cause the volume of inventories.

Table 3: Granger causality test results

Null Hypothesis:	Obs	Lags (AIC)	F-Statistic	Prob.	Null hypothesis
D(logGOLD) does not Granger Cause D(logOilP)	127	4	2.82646	0.0326*	Rejected
D(logOilP) does not Granger Cause D(logGOLD)	127	4	1.51321	0.2163	Accepted
D(logOilP) does not Granger-Cause D(logOil_Inv)	127	4	2.97112	0.0222*	Rejected
D(logOil_Inv) does not Granger-Cause D(logOilP)	127	4	0.42698	0.7889	Accepted
D(logOilP) does not Granger-Cause D(logOilF1)	129	2	0.64032	0.5289	Accepted
D(logOilF1) does not Granger-Cause D(logOilP)	129	2	0.73589	0.4812	Accepted
D(logOilP) does not Granger-Cause D(logOilF2)	127	4	0.69513	0.5968	Accepted
D(logOilF2) does not Granger-Cause D(logOilP)	127	4	1.19284	0.3176	Accepted
D(logOilP) does not Granger-Cause D(logOilF3)	127	4	0.55694	0.6943	Accepted
D(logOilF3) does not Granger-Cause D(logOilP)	127	4	1.23042	0.3017	Accepted
D(logOilP) does not Granger-Cause D(logOilF4)	127	4	0.40406	0.8054	Accepted
D(logOilF4) does not Granger-Cause D(logOilP)	127	4	1.16187	0.3312	Accepted

Granger causality test results. Source: Calculated by the author. * Probability < 0.05 then Null Hypothesis is rejected.

7. Oil price Dynamic OLS model

The oil equilibrium model represents the relation between the spot oil price and the independent variables. In this model, the WTI nominal spot price represents the dependent variable. Moreover, and as independent variables, the model (5) includes the oil supply, oil demand, oil inventories, gold price, speculation, and exchange rate. In the process, the paper collected a quarterly average of the variables, during the period between the first quarter of 2000 and the first quarter of 2017 included, therefore totaling 69 numbers of observations.

$$OilPrice = C_0 + C_1Supply + C_2Demand + C_3Inventories + C_4Exchangerate + C_5Speculation + C_6Goldprice + U_t \quad (5)$$

With U_t is the noise disturbance term at time t .

7.1. The variables

The six independent variables seem to have a significant impact on the Oil price. These variables are taken in log form except for the SDR basket value.

1. The Oil demand represented by the World Petroleum and Other Liquids Consumption.
2. The Oil Supply as the OPEC Crude Oil Supply.
3. The Oil inventories represented by the U.S. Ending Stocks of Crude Oil and Petroleum Products including SPR.
4. The exchange rate represented by the SDR basket against the USD
5. The Speculation effect presented as the Oil Futures contract.
6. The Gold price.

Table 4 represents the Variables abbreviation in the model, their definition, and the source of the data. The paper collected all variables from the sources, and worked on calculating their quarterly average accordingly.

Table 4: Oil model variables

Variable	Source	Definition	obs
WTI	US EIA	WTI Quarterly average Price	69

Inv	US EIA	U.S. Ending Stocks of Crude Oil and Petroleum Products (Thousand Barrels)	69
Dem	US EIA	World Petroleum and Other Liquids Consumption quarterly Average million barrels per day	69
sup	US EIA	OPEC Crude Oil Supply-Average million barrels per day	69
SDRavr	IMF	Quarterly Average SDR value against the USD,	69
OpInt	US EIA	Oil Futures contract quarterly average	69
Gold	FastMarkets & Denver Gold Group	Quarterly Real Gold Price	69

Oil model variables. Series are from Q1-2000 until Q1-2017 included, therefore totaling 69 numbers of observations. All variables series are in log form except for the \$/exchange rate.

7.2. Econometric methodology:

The first step is to conduct a stationary unit root test on each variable to find the order of integration. The variables need to be integrated of the same order before testing for co-integration. This testing implements the Johansen co-integration test first implemented by Engel and Granger (1988). The test is relevant to the problem of the determination of long-run or “equilibrium” relationship in economics.

Afterward, the study requires building a dynamic Ordinary Least Square (DOLS) forecasting equation using the explanatory variables and seeking better forecasting results. The DOLS procedure developed by Saikkonen (1991) and Stock and Watson (1993), improves the robustness of the model, because using the dynamic OLS testing, the endogeneity of any of the regressors will not have any asymptotic effect on the estimates.

Coefficient results implemented into the equation complete the model and conclude the expected oil price for the upcoming years.

7.3. Oil model Stationary test:

While all variables are in log form, except for the USD/SDR, the Augmented Dickey-Fuller test statistics on each variable, as presented in table 5 show a unit root in all our variables at level and confirm that all variables are integrated in order 1 I (1).

Table 5: ADF test results for oil model

	At level		At first difference		Lag
	t-Statistic	Prob.	t-Statistic	Prob.	(AIC)
Lwti	-1.73042	0.4116	-6.846584	0.0000*	0
Ldem	-0.27042	0.9229	-9.525709	0.0000*	0
Lsup	-1.42651	0.5641	-5.458383	0.0000*	0
Linv	-0.00295	0.9546	-7.026954	0.0000*	0
Lopint	-0.54947	0.8741	-8.008827	0.0000*	0
Sdrav	-1.37506	0.5895	-7.886068	0.0000*	0
Lgold	-2.94171	0.0459	-24.66477	0.0001*	0

ADF test results expressed in log except for the SDR, quarterly from Q1-2000 and Q1-2017. Source: Calculated by the author using Eviews. Data collected from EIA and FastMarkets & Denver Gold Group.

7.4. Co-integration test results:

The Co-Integration tests proposed for time series data is Fisher-type test using a principal Johansen methodology. After proving that all variables in the model are integrated in order 1, the test of co-integration is now applicable. The Schwarz information criterion (SC) denotes the best number of lags and leads that eliminates serial correlation is 1.

The Johansen co integration test is the Unrestricted Cointegration Rank Trace Test and Maximum Eigenvalue. The Leads and Lags are 1 and 1, the results with linear deterministic trend are represented in table 6. Results indicate that the null hypothesis of $r = 1$ is rejected, which clearly implies 1 co-integration equation, and 1 long-run equilibrium relationship between the variables.

7.5. Dynamic OLS model:

The OLS method is used to estimate unknown parameters in a linear regression model. OLS estimates the coefficients of a linear equation of a set of independent variables by minimizing the sum of the squares of the differences between the observed dependent variable and those estimated by the linear equation. The OLS estimator is then said to be the best linear unbiased estimator if it meets a set of conditions.

Provided all series are I(1), DOLS by Stock and Watson (1993) procedure is employed to estimate the single cointegrating vector that characterizes the long-run relationship among the variables onto contemporaneous levels of the remaining variables, leads and lags of their first differences, and a constant, using ordinary least squares. The R-squared of our model is of 94.41%, which means that the DOLS model fits well the observed data, and our independent variables were able to explain 94% of the oil price change. The adjusted R-squared is lower than the R-squared at 91%, and the Durbin Watson stands at a robust value of 1.2923.

The root means Squared Error is low, and stands at 0.187, while the Mean absolute Error is at 0.149. Theil Inequality Coefficient is 0.023, and the variance proportion is small of only 0.014. The last step is to test if the regression is spurious by performing unit root tests on the residuals of the estimated OLS regression. The residual diagnostic tests adopted is No serial correlation, and it is based on a null of $E(\hat{\mu}_i, \hat{\mu}_j) = 0$.

Table 6 : Co-integration test results

No. of CE(s)	Eigenvalue	Statistic	Critical Value	Prob.
Hypothesized		Trace	0.05	
None *	0.85492	243.2195	150.5585	0.0000*
At most 1	0.433271	113.8782	117.7082	0.0852
At most 2	0.344397	75.83067	88.8038	0.2971
At most 3	0.293853	47.54333	63.8761	0.5272
At most 4	0.151772	24.23193	42.91525	0.8265
At most 5	0.103312	13.2033	25.87211	0.7222
At most 6	0.084255	5.89713	12.51798	0.4735
Hypothesized		Max-Eigen	0.05	
None *	0.85492	129.3413	50.59985	0.0000*
At most 1	0.433271	38.04755	44.4972	0.212
At most 2	0.344397	28.28734	38.33101	0.4356
At most 3	0.293853	23.3114	32.11832	0.3958
At most 4	0.151772	11.02863	25.82321	0.925
At most 5	0.103312	7.306168	19.38704	0.8788
At most 6	0.084255	5.89713	12.51798	0.4735

Co-integration test results. Calculated by the author

Table 7 : Dynamic OLS estimation results.

Variable	Coefficient	Std. Error	t-Statistic	Prob.
LSUP	5.773496	2.04733	2.820012	0.0074
LOPINT	0.187657	0.300454	0.62458	0.5357
LINV	-5.68981	1.469478	-3.872	0.0004
LGOLD	-0.03545	0.182081	-0.1947	0.8466
LDEM	5.253895	2.217811	2.368956	0.0226
SDRAVR	-4.88331	1.2113	-4.03147	0.0002
C	44.5236	14.05397	3.168045	0.0029

Dynamic OLS estimation results. Prepared by the author

Table 8 : Breusch-Godfrey serial correlation LM

F-statistic	4.618323	Prob. F(1,53)	0.0362
Obs*R-squared	5.370131	Prob. Chi-Square(1)	0.0205

Breusch-Godfrey serial correlation LM . prepared by the author using eviews.

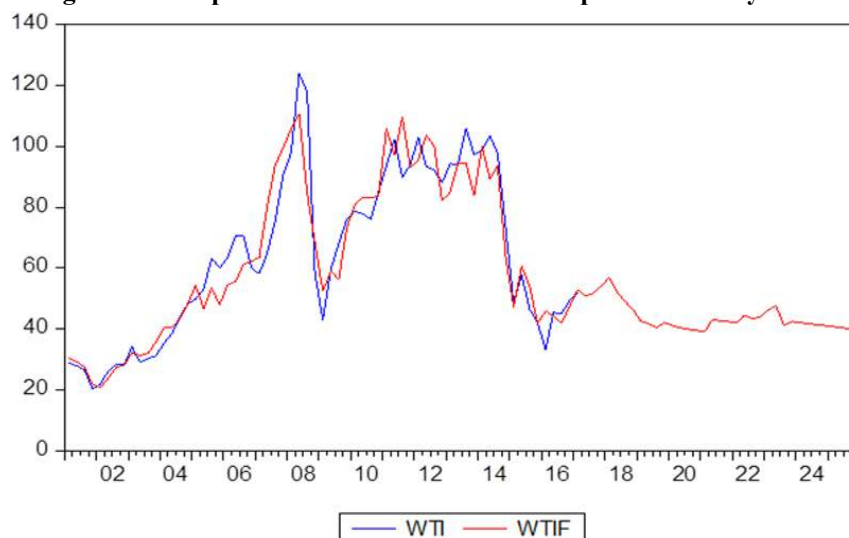
The probability $P=0.02 < 0.05$ show the robustness of the model and clarify that it does represent a fair and efficient estimation to the WTI oil price.

7.6. Results analysis and forecasts:

Findings show that supply, demand, inventories, and exchange are significant in oil price determination. Furthermore, regarding the sign of the coefficient, an increase of 1% in the supply variable decreases oil price by 5.7%, meaning that supply has a significant impact on the oil price. However, an increase of 1% in demand decreases the price by 5%, and an increase of 1% in inventories increases the price by 5%, which contradict theoretical assumptions. Yet, this might be explained that the demand shocks are absorbed by the inventories and what really impacts oil price is the supply level.

Moreover, the significant coefficient of USD/SDR contradicts the assumptions and shows that an increase of 1% in the exchange rate, meaning an appreciation of the USD increases oil price by 4%. Regarding the gold price and the speculation impact, the coefficients are minimal and not significant. Using the DOLS estimation equation (6), the paper forecasts the oil price until the fourth quarter of the year 2025, as showing in figure 2.

$$LWTI = 5.77349561696*LSUP + 0.18765743457*LOPINT - 5.68981323035*LINV - 0.0354510676936*LGOLD + 5.25389547917*LDEM - 4.88331230444*SDRAVR + 44.5236017986 \quad (6)$$

Figure 2: WTI price in USD and the forecasted price until the year 2025

WTI price in USD and the forecasted price until the year 2025. Prepared by the author.

8. Conclusion

This paper investigates the volume of the Lebanese oil resources and the oil price until 2025. The objective is to have an estimation of the oil resources value in US dollars when the production is expected to start. The bi-directional granger causality testing showed that neither the volume of inventories nor the future price granger cause the spot oil price. However, gold price does Granger cause the oil price, and oil price does granger cause the volume of inventories. The DOLS estimation demonstrated that the oil price, oil demand, oil supply, oil inventories, gold price, speculation, and exchange rate are associated in a long-run relationship. Furthermore, results show that the highest impact on price is due to the supply factor, which emphasizes the influence of the OPEC on the oil market.

Regarding the volume of the resources, the paper finds no position in any accurate estimation before the start of the exploration activities. Even after drilling, the well only shows a measure of its location, thus, field volumes parameters will be narrowed down with time. However, the most accurate estimates based on the seismic surveys show reserves of between 900 million barrels and the 1.8 billion barrels and the forecasted oil price until year 2025 suggest a price between 45 and 55 USD a barrel.

References

- Balabanoff, S. (1994). *The dynamics of energy demand in Latin America*. economics section economics.
- Bentzen, J. (1993). *Short- and long-run elasticities in energy demand: A cointegration approach*. Energy Economics.
- Chen, S., & Chen, H. (2007). *Oil prices and real exchange rates*. economic papers.
- Dickey David, A., & Fuller Wayne, A. (1979). *Distribution of the Estimators for autoregressive time series with a unit root* (Vol. 74). Journal of the American Statistical Association.
- Douglas Bohi, R. (1981). *Analyzing Demand Behavior: A Study of Energy Elasticities*. Retrieved from <https://researchgate.com>
- Elton, N. (1996). *The structure of Demand for electricity*. Retrieved from <https://researchgate.com>
- Engle, R., & Granger, C. (1988). *Co-integration and error correction: Representation, estimation*.
- Ghalayini, L. (2015). *Modeling and forecasting spot oil price*. Eurasian Business and Economics Society.
- Granger, C. (1969). *Investigating causal relations by econometric models and cross-spectral*.
- Hugyecz, A. (2012). *Cooperation in the petroleum industry in light of the corporate strategies*. International Relations.
- Masih, R., & Masih, A. (1996). *Stock-Watson Dynamic OLS (DOLS) and Error Correction Modeling Approaches to Estimating Long and Short Run Elasticities in a Demand Function* (Vol. 20). Mainland China Energy Economics.

- Munasinghe, M. (1990). *Energy Analysis and policy*.
- Anonymous. (2015). *Oil and Gas and the lebanese government*. Bank Med research Center.
- Anonymous. (2016). *Oil Production levels*. Organisation of petroleum exporting countries.
- Pindyck, R. (1980). *Uncertainty and Exhaustible Resource Markets*.
- Rahim, A. (2013). *Lebanon Petrol and gas*.
- Saikkonen, P. (1991). *Asymptotically efficient cointegration regression*. economic papers.
- Stock, J., & Watson, M. (1993). *A Simple Estimator of Cointegrating Vectors in Higher Order Integrated Systems*. *Econometrica*.
- Anonymous. (2013). *world Gas production*. International Energy Agency.
- Anonymous. (2013). *World oil production IEA*. International Energy Agency.
- Ye, M., Zyren, J., & Shore, J. (2002). *Forecasting crude oil spot price using OECD petroleum*. Springer.
- Zamani, M. (2004). *Monthly oil market Report*. OPEC.

Analysis of Factors Affecting the Interests of SMEs Using Accounting Applications

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Abstract

Technological developments in the world have entered the period of the industrial revolution 4.0. The impact on technological progress is a change in the perspective of manuals, business maps of the world, even in various aspects of economic, social, political, and cultural life. In line with the rapid development of technology, companies, and micro and small and medium enterprises (SMEs) increasingly need technology for the sustainability of their businesses. This study aims to analyse the factors that influence the interest of SMEs using accounting applications. The research method used is a deductive approach. The results of this study cannot yet reject the hypothesis that price, performance, stability, flexibility, implementation, customisation, and vendor support influence the decision to use accounting software.

Keywords: Accounting Information System, Accounting Software, SMEs

1. Introduction

The development of technology has changed the way and business around the world. Along with the development of these technologies, developments also occur in various aspects of life, for example, in the elements of economic, social, and cultural politics (Kurniawan & Diptyana, 2011). Currently, technological developments in the world have entered the period of the industrial revolution 4.0 (Tjandrawinata, 2017). There are at least three things that distinguish the industrial revolution 4.0 compared to the previous industrial revolution. These three things are the reasons why the transformation that is happening right now is not an extension of the digital revolution, but rather a new transformation revolution. First, innovation can be developed and spread far faster than before. The speed of the occurrence of breakthroughs in this era occurred on an exponential scale and no longer on a linear scale. Second, the reduction in marginal production costs and the emergence of platforms that can unite and concentrate several scientific fields have been proven to increase work output. Including the entire production, management, and governance system.

Third, the global revolution (information technology) has a significant influence in every field of industry, and even at the system level in many other business sectors (Tjandrawinata, 2017). Therefore, companies must follow the development of information technology to be able to maintain and win the competition (Kurniawan and

Diptyana, 2011). Furthermore, Kurniawan and Diptyana (2011) explained that it is not only large companies that utilise information technology, but micro, small and medium enterprises (SMEs) also utilise them to play an important role in their efforts to influence the country's economic and industrial growth (Kurniawan and Diptyana, 2011).

SMEs has a significant contributor to the Indonesian National Economics. Besides that, SMEs are also referred to as one of the pillars of economic growth in Indonesia. The contribution of SMEs sector to the gross domestic product (GDP) has been stretching in the last five years (Mutmainah, 2016; Rekart and Doktoralina, 2017). According to data from the Ministry of Cooperatives and Small and Medium Enterprises (SMEs) in 2016-2017 noted the contribution of the SMEs sector increased from 57.84% to 60.34% (Kemenkop-UKM RI, 2018). In addition, the SMEs sector has also assisted in absorbing domestic workers. Employment absorption in the SMEs sector grew from 96.99% to 97.22% in the last five years (Mutmainah, 2016).

According to Rekart, Bahari, Zahari, Doktoralina, and Ilias (2019); Rudiantoro and Siregar (2012), the enormous potential of SMEs is often constrained by capital problems to develop businesses. As a solution, the government runs the SMEs financing program. One such program is the People's Business Credit (KUR). However, the KUR program did not meet the targets and was not well utilised. One reason is the lack of adequate information in the form of financial statements produced. By SMEs, so that banks as KUR suppliers in lending tend to be more careful. Some (Rudiantoro and Siregar, 2012). The importance of applying accounting knowledge in the financial management of SMEs is considered to be poorly understood by entrepreneurs. There are still many small entrepreneurs who have not recorded their business financial statements properly. Some even did not take notes (Susilawati, Yuliati, and Khotmi, 2018). Then, the Government of Indonesia 17/2013 stated that there are obligations for small business actors to do accounting records. One way to deal with technical problems in the financial sector in SMEs is through the adoption of information technology (Kurniawan and Diptyana, 2011; Pramuka, 2012). However, this transition also does not always bring good effects for SMEs. According to Rahmawati and Puspasari (2017), there are also SMEs who consider manual recording to be more effective because given the size of the business activity concerned is relatively small. In Addition, most SMEs feel that the business they are involved in is a small business that is run only to fulfill their daily needs (Rahmawati & Puspasari, 2017). Thus, many small companies do not have a good financial accounting system.

SMEs are too focused on how to make unique products, while accounting and view of financial systems as a second choice, not as a priority. Then, SMEs also assume that the provision of accounting records will waste time and money. They feel disturbed by financial documents and think that the most important thing is to get the maximum profit (Putri, 2017). SMEs entrepreneurs who have large transactions expressed the opposite view, and they assume that it is not easy to process daily report that much data manually (Aboelimged, 2014; Ali, Rahman, & Ismail, 2012; Burgess & Paguio, 2016). Aboelimged (2014); Ali, Rahman, and Ismail (2012); Burgess and Paguio (2016) prove that business characteristics, the ability to innovate, external influences, compatibility have a significant effect on SMEs decisions in upgrading software. A computer application (software) program helps meet the needs of SMEs in managing data effectively and efficiently (Lestiawan & Mahmud, 2014). There are many types of accounting software but do not provide convenience in implemented for SMEs in Indonesia. Therefore, several factors considered in choosing software are some of these factors are price, performance, stability, flexibility, implementation, adjustment, and vendor support (Philip, 2001). Based on the problems that have been explained before, this research wants to explore the factors developed by Philip (2001) that influence the selection of accounting software by SMEs. Therefore, this study explores the use of accounting software by adding elements to the pattern of accounting activities carried out by SMEs based on the value of the transaction activity.

2. Literature Review

2.1 Small Medium Entrepreneurship

According to Law No.20/2008, SMEs is distinguished by several criteria through its net worth. First, IDR 50 million to IDR 500 million, and that does not include land and business premises, and the total annual sales are at

most around IDR 300 million. Second, IDR 50 million to IDR 500 million and does not include land and business premises, and the total annual sales are at most around IDR 300 million to IDR 2.5 billion. Third, A medium-sized business is a business that has a wealth of more than Rp 500 million to Rp. 1 billion excluding land and business premises, and total annual sales of a maximum of Rp. 2.5 billion to Rp. 50 billion.

Meanwhile, the Central Statistics Agency defines MSMEs based on the quantity of labour. Small business is a business that has a workforce of 5 people up to 19 people, while medium business is a business that has a workforce of 20 people up to 99 people. Whereas The Central Bank of Indonesia (2015), micro-business is a business run by the poor, owned by families, with local resources and using simple technology, and the business field is easy to get in and out. The amount of the worker, the assets of SMEs Rp 200 million excluding land and business buildings with an annual turnover of less than Rp 1 billion. In addition to its management mandatory by Indonesians and not a legal entity. Meanwhile, medium-sized businesses are defined as having assets of less than Rp. 5 billion for the industrial sector, and assets less than Rp 600 million excluding land, buildings with an annual turnover of less than Rp. 3 billion. Based on these definitions, SME is a form of productive economic enterprise, driven by individuals or business entities. In addition, he must have specific capital, limitations in business development, and not affiliated or controlled by the company.

2.2 Financial statements

Based on the Financial Framework and Financial Reporting Framework (KDPPLK) paragraph 7, the intended financial statements are part of the financial reporting process. The financial statements, i.e., including balance sheet, income statement, statement of changes in financial position (in cash flow statements, or cash flow statements), notes and other reports and explanatory material that is an integral part of the financial reporting. Based on the analysis, the existing elements of a financial statement can help decision-makers (Putra, 2018; Setiyawati & Doktoralina, 2019).

2.3 Accounting Information

According to Riahi-Belkaoui (2011), the accounting information as quantitative information about economic entities that are useful for economic decision making and determining choices between alternative actions. Thus, accounting information can be used for strategic planning, management oversight, and operational oversight (Susilawati, Yuliati, and Khotmi, 2018). Based on SAK EMKM (2018) paragraphs 2.2 and 2.8, accounting information must meet the criteria for disclosing economic benefits associated with financial account items that can be sure to flow into or out of the entity so that account items have costs that can be measured reliably.

2.4 Accounting Information System (AIS) at SMEs

AIS as a collection (integration) of sub-systems processes transaction data related to financial problems into financial information (Susanto, 2013). AIS also identifies data sets to communicate information to two or more components that interact with each other in achieving goals (Romney, Steinbart, and Cushing, 2015). Therefore, in line with business development that requires timeliness and accuracy in various assessment standards, computer computers are considered as the right choice (Aboelmagd, 2014).

2.5 Accounting Information System User Capability

Great personal ability will spur users to use accounting information systems. Cause's the impact of its use of AIS more effective and can increase the satisfaction of user (Kurnia, Choudrie, Mahbubur, & Alzougool, 2015; Purwati & Suparlinah, 2017; Romney et al., 2015; Susanto, 2013). The satisfaction of a user can see from the performance, information, economy, control, efficiency, and service (Susanto, 2013). The factors that influence a company in selecting a set of accounting software in general, i.e., Price, Performance, Stability, Flexibility, Implementation, Customization and Vendor support or support from sellers (Maharseni, 2018; Purwati & Suparlinah, 2017; Romney et al., 2015; Susanto, 2010). The vendor support is all vendor-related activities regarding facilities

provided by suppliers or sellers including telephone network installations, regular checks, and guarantees for repairs caused by virus attacks (Romney et al., 2015; Susanto, 2010).

3. Research Methods

3.1 Research model

This research is quantitative research with a deductive approach, with the descriptive statistical test (Ghozali, 2016; Sugiyono, 2015). The data analysed in this study were in the form of individual respondents' opinions. Collection and analysis techniques in the way of views of the subjects studied through the distribution of questionnaires.

3.2 Population and Sample

The population in this study were 31,116 SMEs registered in Department of SME and Trade of DKI Jakarta Province (2017). The technique of cluster Random Sampling is used. A total of 850 SMEs became the study sample (Sekaran & Bougie, 2016; Sugiyono, 2015).

3.3 Data Types and Sources

The type of data used in this study is quantitative data. Data sources used in this study are: (a) Primary Data, is data obtained from the first source both from individuals such as the results of a questionnaire (questionnaire) that has been answered by respondents then collected again by researchers; (b) Secondary data is data that has been collected by other parties and published by the data user community (Sekaran & Bougie, 2016; Sugiyono, 2015).

3.4 Definition of Variable Operations

The dependent variable of this study is the use of accounting software that is directly operated by the user (respondent). The measure of this variable is, through questions related to the use of accounting software on Operational of SMEs. The research variables consist of five types of variables that are considered to influence the decision to use accounting applications, such as:

- 1) Education level, i.e., elementary school (SD), junior high school (SMP), high school (SMU) or equivalent, Diploma (DIII), Bachelor (SI) and Postgraduate (S2 & S3). (Rudiantoro & Siregar, 2012).
- 2) Company Size. Determining the business size index is to give points to the answers in the questionnaire for questions about the number of employees, company assets, and company sales per year (Rudiantoro and Siregar, 2012).
- 3) Business duration is shown based on the age of the company based on the year since the establishment of the company up to this research (Rudiantoro and Siregar, 2012).
- 4) Accounting knowledge is seen based on the formal educational background studied by the owners of SMEs (Rudiantoro and Siregar, 2012).
- 5) Technology Utilization, seen from the quality of the system, the quality of information, user satisfaction, and the total benefits of the accounting application (Safitri and Setiyani, 2016).

4. Results and Discussion

4.1 Description of Respondent Data

Profile of respondents in this study include a) gender, 33.3% male respondents and 66.7% female respondents; b) age, respondents are dominated between the ages of 31-40 years which is equal to 47.77%.

4.2 Description of Research Variables

4.2.1 Description of the Education Level

The internal control variable consists of 1 question divided into four dimensions, i.e., Senior high school, Bachelor, Strata 2, or others. The following data explains the tendency of respondents' answers to the latest education level of SME owners.

Table 3: No of Employee

No of Employee	Frequency	Percentage (%)
< 4	318	37.41
5 – 19	509	59.88
20 – 99	23	2.71
> 100	0	0
Total	850	100

Sources: Data Processed (2019)

Based on Table 1, respondents with a high school education level are the most respondents in the study, amounting to 22.82%, while those who have the lowest level of education S2 are 2%.

4.2.2 Description of Company Size

The company size variable consists of four questions divided into four dimensions based on the characteristics of SMEs. Between the asset dimensions included one question, the number of employees comprised of 1 item, and the sales turnover dimension consisted of 1 subject. The following will be presented trends of respondents' answers on the firm size with frequency distribution and percentage approaches.

a. Asset

Table 2 presents the recapitulation of respondents' responses submitted to measure company size variables through asset dimensions. This asset dimension consists of 1 question:

Table 2: Respondent Asset Value

Value	Frequency	Percentage (%)
< Rp 50 million	168	19.77
Rp 50 – Rp 500 million	424	49.86
Rp 500 million – Rp 10 bio	258	30.37
> Rp 10 bio	0	0
	850	100

Sources: Data Processed (2019)

Based on Table 2 it can be seen that the respondents who had assets of Rp 50 million - Rp 500 million were the most respondents in the study, amounting to 49.86% while those who had assets <Rp50 million were the lowest respondents in this study amounting to 19.77%.

b. Number of employees

Table 3 presents the respondents' responses proposed to measure company size variables through the dimensions of the number of employees employed. This asset dimension consists of 1 question, namely:

Table 3: No of Employee

No of responde	Frequency	Percentage (%)
< 4	318	37.41
5 – 19	509	59.88
20 – 99	23	2.71
> 100	0	0
Total	850	100

Sources: Data Processed (2019)

Based on Table 3, it can be seen that respondents who have 5-9 employees are the most respondents in the study, amounting to 59.88% while those who have 20 - 99 people are the lowest respondents in this study, amounting to 2.71%.

c. Sales Turnover Value

Table 3 presents the recapitulation of respondents' responses proposed to measure the company size variable through the dimensions of the total sales turnover value. This asset dimension consists of 1 question, namely:

Table 4: Sales

Sales	Frequency	Percentage (%)
< Rp 300 mio	392	46.12
Rp 300 mio – Rp 2,5 bio	446	52.47
Rp 2,5 r - Rp 50 bio	12	1.41
> Rp 50 bio	0	0
Total	850	100

Sources: Data Processed (2019)

Based on Table 4, it can be seen that respondents who have a sales turnover value of Rp 300 million - Rp 50 billion are the most respondents in the study, amounting to 52.47% while those who have the sales turnover value are the lowest respondents in this study amounting to 1.41%.

4.2.3 Description of the Length of Business

Variable length of business consists of 1 question divided into 1 dimension, namely the dimension of the length of the business consisting of 1 question. Table 5 about the recapitulation of respondents' responses submitted to measure the company size variable through the dimensions of the length of the business.

Tabel 5: Business Ages

Business Ages (Year)	Frequency	Percentage (%)
< 5	248	29.17
6 – 10	370	43.53
10 – 15	183	21.54
> 15	49	5.76
Total	850	100

Sources: Data Processed (2019)

Based on Table 5, it can be seen that respondents who have a business length of 6-10 years are the most respondents in the study, amounting to 29.17%, while those who have a business life > 15 years are the lowest respondents in this study amounting to 5.76%.

4.2.4 Description of Accounting Knowledge

The accounting knowledge variable based on educational background consists of 1 question divided into one dimension, namely the educational background dimension, including accounting, management, economics, and others.

Tabel 6: Accounting Knowledge based on academic background

	Frequent	Percentage (%)
Accounting	142	16.71
Management	264	31.06
Economic	348	40.94
others	96	11.29
Total	850	100

Sources: Data Processed (2019)

Based on Table 6 it can be seen that respondents who have accounting knowledge based on the educational background are only 16.71%, the majority of respondents have an educational experience in other economics that is equal to 40.94% while in addition to economics it is the minority field of respondents that is equal to 11.29.

4.2.5 Overview of Utilization of Information Technology

The information technology utilisation variable consists of 4 questions divided into eight dimensions, which based on experience using Accounting Computer applications, accounting applications used, and respondents' explanation of choosing the accounting application.

Table 7: IT usage

	Frequeunt	Percentage (%)
Accounting software	324	38.12
Others	526	61.88
Total	850	100

Sources: Data Processed (2019)

4.2.6 Accounting Applications Used

Based on Table 7 it can be seen that respondents have used accounting applications 38.12% while 61.88% have not used accounting applications in the process of preparing financial statements for their business results.

Table 8: Application

	Frequency	Percentage (%)
Zahir Accounting	88	27.16
Accurate Accounting	62	19.14
MYOB	44	13.58
Microsoft Excell	117	36.11
Others	13	4.01
Total	324	100

Sources: Data Processed (2019)

From the 324 respondents who had used accounting applications, the most widely used Microsoft Excel applications were 36.11%, then Zahir Accounting 27.16%, Accurate Accounting 19.14%, MYOB 13.58% and other accounting applications 4 %. Then the dimensions of the accounting application selection criteria are measured using an ordinal scale through questions by answering Yes and No.

Tablel 9: Criteria

	Yes	%	No	%	Total
Business	204	62.96	120	37.04	324
Easy to use	298	91.98	26	8.02	324
Low price	177	54.63%	147	45.37%	324
Report	188	58.02	136	41.98	324
Security	137	42.28	187	57.72	324

Sources: Data Processed (2019)

Based on table 9, 62.96% of respondents use accounting applications because of the needs of their business activities. Furthermore, 91.98% of respondents stated the ease of use of accounting applications determines the selection of accounting applications. As much as 73.15% of respondents reported that the price of a more affordable accounting application license affects a variety of accounting applications. The quality of the results of financial statements produced by accounting applications determines the selection of accounting applications used from 58.02% of respondents. Meanwhile, application security has not been a determining factor in choosing accounting applications where 57.72% of respondents not to prioritise the security aspects of applications in the selection of accounting applications.

5. Conclusions & Suggestion

Based on the results of the study note, the level of education, company size, length of business, and accounting knowledge is not a determining factor in the selection of accounting applications. SMEs use accounting applications because of the needs of their business activities, ease of use of accounting applications, the price of more affordable accounting applications, the quality of the results of financial statements produced by accounting applications while application security has not been a determining factor in choosing accounting applications. Suggestion for academics, the results of this study can be used as additional references to enrich knowledge about the factors that influence the use of accounting applications. Limitations in this study include the selection of respondents who are still uneven and knowledge of accounting that is considered not to meet standards. For future research, it is advisable to choose respondents who have accounting knowledge and use more in-depth statistical methods.

References

- Aboelmaged, M. G. (2014). Predicting e-readiness at firm-level: An analysis of technological, organizational, and environmental (TOE) effects on e-maintenance readiness in manufacturing firms. *International Journal of Information Management*, 34(5), 639–651. <https://doi.org/10.1016/j.ijinfomgt.2014.05.002>
- Ali, A., Rahman, M. S. A., & Ismail, W. N. S. W. (2012). Predicting continuance intention to use accounting information systems among SMEs in Terengganu, Malaysia. *International Journal of Economics and Management*, 6(2), 295–320.
- Badan Pusat Statistik. (n.d.). Usaha Kecil.
- Bank Indonesia. (2015). Profil Bisnis Usaha Mikro, Kecil Dan Menengah (UMKM). Jakarta: Lembaga Pengembangan Perbankan Indonesia-Bank Indonesia.
- Burgess, S., & Paguio, R. (2016). Examining ICT application adoption in Australian home-based businesses: An innovation-decision process approach. *Journal of Enterprise Information Management*, 29(2), 276–299. <https://doi.org/10.1108/JEIM-02-2014-0012>
- Dinas Koperasi Usaha Kecil dan Menengah serta Perdagangan Provinsi DKI Jakarta. (2017). *Laporan Kinerja Pembangunan Koperasi Dan UMKM Di Provinsi DKI Jakarta*. Jakarta.
- Ghozali, I. (2016). Aplikasi Analisis Multivariate dengan Program IBM SPSS 23, Edisi Delapan. Penerbit Universitas Diponegoro. Semarang.
- Indonesia, Republic of. Peraturan Pemerintah (PP) tentang Pelaksanaan Undang-undang Nomor 20 Tahun 2008 tentang Usaha Mikro Kecil dan Menengah (2013). Indonesia.
- Indonesia, Republik. (2008). Undang-Undang No. 20 Tahun 2008 tentang Usaha Mikro, Kecil, dan Menengah. Jakarta: Sekretariat Negara.
- Kemenkop-UKM RI. (2018). *Perkembangan Data Usaha Mikro, Kecil, Menengah (UMKM) dan Usaha Besar (UB) Tahun 2016-2017*. Kementerian Koperasi dan UKM RI.
- Kurnia, S., Choudrie, J., Mahbubur, R. M., & Alzougool, B. (2015). E-commerce technology adoption: A Malaysian grocery SME retail sector study. *Journal of Business Research*, 68(9), 1906–1918. <https://doi.org/10.1016/j.jbusres.2014.12.010>
- Kurniawan, R., & Diptyana, P. (2011). Telaah Pemanfaatan Software Akuntansi oleh Usaha Kecil Dan Menengah. *The Indonesian Accounting Review*, 1(2), 107–116.
- Lestiawan, H., & Mahmud. (2014). Purwarupa Pembelajaran Mandiri Sistem Aplikasi Akuntansi Umkm Berbasis Web Dalam Pemberdayaan Usaha Masyarakat Jawa Tengah. *Prosiding SNATIF*, (2014), 445–452.
- Maharseni, N. W. R. (2018). Analisis Faktor-Faktor tingkat Penerimaan dan Penggunaan Aplikasi Akuntansi Berbasis Android menggunakan Pendekatan Technology Acceptance Model.
- Mutmainah, D. A. (2016). Kontribusi UMKM Terhadap PDB Tembus Lebih Dari 60 Persen.
- Philip, B. (2001). *Expert Talk Accounting Software*.
- Pramuka, B. A. (2012). Adopsi Teknologi Umkm Berorientasi Ekspor Untuk Pelaporan Keuangan : Studi Di Kabupaten Banyumas.
- Purwati, A. S., & Suparlinah, I. (2017). Faktor-Faktor Yang Mempengaruhi Manfaat Penggunaan Aplikasi Akuntansi Dea Untuk Menyusun Laporan Keuangan. *Sustainable Competitive Advantage-7 (SCA-7)*, 7(1), 411–420.
- Putra, Y. M. (2018). Pemetaan Penerapan Standar Akuntansi Keuangan EMKM Pada UMKM Di Kota Tangerang Selatan. *Jurnal Profita: Komunikasi Ilmiah Akuntansi Dan Perpajakan*, 11(2), 201–217.
- Putri, A. H. K. (2017). Pengaruh Faktor Latar Belakang Pendidikan Terhadap Kualitas Laporan Keuangan Melalui Pengetahuan AKuntansi Sebagai Variabel Intervening. *Ihtiyath: Jurnal Manajemen Keuangan*

- Syariah*, 1(2), 32–52.
- Rahmawati, T., & Puspasari, O. R. (2017). Implementasi sak etap dan kualitas laporan keuangan umkm terkait akses modal perbankan. *Kajian Akuntansi*, 1(1), 49–62.
- Rekarti, E., Bahari, Z., Zahari, N. M., Doktoralina, C. M., & Ilias, N. A. (2019). The Sustainability of Muslim Women Entrepreneurs: A Case Study in Malaysia. *International Journal of Financial Research*, 10(5), 430–439.
- Rekarti, E., & Doktoralina, C. M. (2017). Improving Business Performance: A Proposed Model for SMEs. *European Research Studies Journal*, 20(3A), 613–623.
- Riahi-Belkaoui, A. (2011). Accounting Theory. [Nachdr.]. *Andover: Thomson*.
- Romney, M. B., Steinbart, P. J., & Cushing, B. E. (2015). *Accounting Information Systems* (13th ed., Vol. 13th). Prentice Hall Upper Saddle River, NJ.
- Rudiantoro, R., & Siregar, S. V. (2012). Kualitas Laporan Keuangan UMKM Serta Prospek Implementasi SAK ETAP. *Jurnal Akuntansi Dan Keuangan Indonesia*, 9(1), 1–21. <https://doi.org/10.21002/jaki.2012.01>
- Safitri, M. E., & Setiyani, R. (2016). Pengaruh Motivasi Belajar, Computer Attitude Dan Fasilitas Laboratorium Akuntansi Terhadap Prestasi Belajar Komputer Akuntansi MYOB. *Economic Education Analysis Journal*, 5(1), 30–43.
- Sekaran, U., & Bougie, R. (2016). *Research Methods for Business: A Skill Building Approach* (7th Editio). John Wiley & Sons.
- Setiyawati, H., & Doktoralina, C. (2019). The importance of quality accounting information management in regional governments in Indonesia. *Management Science Letters*, 9(12), 2083–2092.
- Sugiyono. (2015). *Metode Penelitian Kuantitatif, Kualitatif dan R & D*. Bandung: Alfabeta.
- Susanto, A. (2010). *Information Technology for Business and Accounting. Prime Edition. Bandung: Lingga Jaya*.
- Susanto, A. (2013). Sistem Informasi Akuntansi. *Bandung: Lingga Jaya*.
- Susilawati, D., Yuliati, N. N., & Khotmi, H. (2018). Faktor-Faktor Yang Mempengaruhi Penggunaan Informasi Akuntansi Pada Usaha Mikro Kecil Menengah (Survei Pada UMKM Di Kecamatan Aikmel Lombok Timur). *Jurnal Aplikasi Akuntansi*, 2(1), 22–41.
- Tjandrawinata, R. R. (2017). Industri 4.0: Revolusi Industri Abad Ini Dan Pengaruhnya Pada Bidang Kesehatan Dan Bioteknologi. *Seminar Dan Konferensi Nasional IDEC*, 2(6), 512–518. <https://doi.org/10.5281/zenodo.49404>

Crowding-out Effect of Public Borrowing in Sri Lanka

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Abstract

The government of Sri Lanka has been disproportionately borrowing from the domestic banking and non-banking sectors to finance its budget deficit. These sectors also serve as funding sources for the country's private investors. The government's expansionary fiscal policy has increased its total income, but it may also raise interest rates and reduce private investment. This study estimates the crowding-out effect of public borrowing from domestic sources on private investment in Sri Lanka. Using time-series data from 1960-2014 sourced from the Central Bank of Sri Lanka and World Development Indicators, we develop an investment function with three independent variables, public borrowing, interest rate, and gross domestic product. Unit root tests and the autoregressive distributed lag and vector error correction models are also utilized. To test the long-run relationships among the variables, we conduct a bound test of co-integration, and the results show that there is long-run co-integration between the variables. Vector autoregressive models, variance decomposition analysis, the Granger causality test, and impulse response functions are used to analyse the results. The study provides evidence for the absence of a crowding-out effect in Sri Lanka as a result of public borrowing from domestic sources. This evidence has important implications of fiscal management in Sri Lanka. To avoid external indebtedness and unnecessary inflation due to debt financing, the government can rely on domestic sources without hurting private investment in the country.

Keywords: Crowding In Effect, Crowding Out Effect, Private Investment, Public Borrowing

1. Introduction

Sri Lanka has maintained huge budget deficits over the last thirty years, which has created high levels of debt. During that period, the Sri Lankan government's budget deficits have been about 7.5 percent of the country's GDP, and the debt level has reached about 90 percent of GDP (Central Bank of Sri Lanka, 2017). The Sri Lankan revenue mobilization has remained lower than the government's total expenditures; revenues have not been enough even to cover recurrent expenses. This situation has created high budget deficits over the past years and forced the government to rely on debt to finance its recurrent expenditures, which in turn has led the government to accumulate a huge debt stock (Central Bank of Sri Lanka, 2017, p. 192). Large budget deficits and high debt levels may have created a crowding-out effect on the economy as well as macroeconomic instability in the country. Researchers have presented different views about the relationship between public and private investment. Some researchers have shown that public borrowing from domestic sources (internal sources) crowds out private investment in the country. They argue that, *ceteris paribus*, large-scale public borrowing results in higher prices for the private sector, which is sensitive to interest rates. This leads to reduced investment due to lower rates of return; that is, the private sector is crowded out. Other researchers, however, have demonstrated that public borrowing produces a crowding-in effect on private investment. The crowding-in effect also originates from government deficit spending. However, such an effect is highly dependent on whether the spending increases

economic activity. An increase in economic activity that creates more opportunities for businesses and increases the profitability of business operations. Therefore, the private sector crowd-in effect can lead to improvements in consumer needs satisfaction. For example, government investment in infrastructure facilities like highways, roads, and power plants, as well as spending on education and health care may create a complementary impact on private investment by raising marginal productivity.

Many researchers, however, assert that loose fiscal policy crowds out private investment. Chhibber and van Wijnbergen (1988), Akkina and Celebi (2002), and Temin and Voth (2005) find evidence of a crowding-out effect which leads to reduced private investment. Conversely, Ramirez (1994), Hyder (2001), Naqvi (2002), Ouattara (2004), Chakraborty (2006), and Majumder (2007) conclude that public investment has a positive impact on the expectations of investors, thereby creating a crowding-in effect. This type of government spending will help to develop infrastructure, which encourages private investment in the country. Aschauer (1989) revealed that public investment in the United States has a significant, positive impact on private investment, especially when the public investment goes to infrastructure facilities that increase productivity. This reciprocal relationship between public and private investment is further proven by Greene and Villanueva (1991) and Blejer and Khan (1984). Finally, empirical investigations by Ahmed and Miller (2000), Cruz and Teixeira (1999), Atukeren (2005), and Erden and Holcombe (2005) on the crowding-out and crowding-in effects of public investment produce the mixed results. In Sri Lanka, the government borrows from different internal sources to finance its budget deficit, such as the Central Bank of Sri Lanka as well as private and public banks and the level of borrowing has reached alarming levels. This, in turn, will hamper the government's efforts to reduce the rates of inflation and poverty in the country. Otherwise, this excessive borrowing will create upward pressure on the economy by increasing the circulation of money in the marketplace.

As discussed above, public investment has differing consequences on private investment. While there is a significant number of papers analysing public investment's crowding-out effect on private investment, there are few studies relevant to the Sri Lankan context. Gupta (1992) conducted an empirical study to identify the crowding-out effect in ten Asian countries and revealed that the Ricardian Equivalence Theorem is rejected vis-à-vis India, Sri Lanka, Indonesia, and the Philippines. He also found evidence of crowding out in all the Asian countries studied except India. Chowdhary (2004) conducted a test to estimate the possible impacts of fiscal actions in the five least-developed countries in South Asia. He concluded that the price effect seems to be negative in Sri Lanka, but it is statistically insignificant. Therefore, we can conclude that it has no noticeable impact on the interest rate. Banda and Pridarshanee (2013) examined whether there is a crowding-out effect in Sri Lanka by using time series data from 1960 to 2007. To examine the impact of the budget deficit on private investment, the author used empirical tests based on the neoclassical flexible accelerator and Mundell-Fleming models. The results found that there is an absence of a financial crowding-out effect in Sri Lanka as a result of fiscal expansions. However, there is has been no research conducted in Sri Lanka using recent data. Furthermore, it may be argued that the main center of this study is internal public borrowing because the crowding-out effect is primarily generated by the use of domestic loan sources. Government borrowing from external sources does not impact internal funding and has little impact on private investment. The sources of domestic public financing that are directly relevant to the crowding-out effect include both bank and non-bank sources. However, the previous paper does not take this matter into account when estimating the crowding-out effect in Sri Lanka. Furthermore, a large body of literature has analysed the relationship between public and private investment, and the empirical findings of most provide mixed results. However, there has been limited research in developing, and emerging market economies on the interaction between public and private investment, and the results have likely changed over time because of structural reforms such as the deregulation of goods markets (domestic and foreign).

Given the above background, the main objective of this study is to investigate the relationship between public borrowing from domestic sources and private investment in Sri Lanka by estimating autoregressive distributed lag (ARDL) and vector autoregressive (VAR) models using three independent variables. The paper is organized as follows. The second section provides an in-depth of relevant literature. Empirical evidence of the crowding-out effect as well as its theoretical foundations are discussed. The third section analyses public and private investment in Sri Lanka. The fourth section provides model specifications and estimations. Section fifth analysis the estimated results, and finally, section sixth, concludes the paper and provides policy recommendations.

2. Literature Review

According to the crowding-out theory, when a government increases its borrowing to finance increased expenditures, the private sector is crowded out due to higher interest rates. There is some controversy in modern macroeconomics with respect to this effect because scholars disagree about how financial market behavior is affected by increased government borrowing. If expanded borrowings result in higher interest rates, due to increased demand for loanable funds, the private sector will face higher borrowing costs, leading to a reduction in private investment. When this occurs, we say that private investment is crowded out.

Moreover, capital investment and other interest-sensitive expenditures are also subject to the expansionary effects of government borrowings. Decreased capital investment by the business can reduce long-term economic growth. However, this crowding-out effect can be moderated by government expenditures on private-sector products, a multiplier effect. This stimulates fixed investments through the accelerator effect; in other words, private investment crowds in. This accelerator effect becomes more valuable when an economy is suffering from unused industrial capacity during periods of severe recession or depression. If the government finances its budget deficit by merely printing money, crowding out could be avoided. However, this would cause accelerating inflation in the economy.

The impact of public investment operates through various channels. However, most economists and researchers have focused on its potential effect on interest rates. Private investment can be affected by public expenditures either directly (real crowding out) or indirectly (financial crowding out). Engen and Hubbard (2004) studied the magnitude of potential adverse effects depending on the degree to which government borrowing increases interest rates and/or decreases private credit. However, government investment does not contribute to an increase in government revenue or real GDP, which may create other problems, such as public debt or inflation. Higher government spending creates upward pressure on interest rates, which discourages private investment. Other than the potential inflationary impact of government spending, most of the economic literature focuses considerable attention on its crowding-out or crowding-in effect on private investment. For developing countries, several empirical studies have examined the strong, long-run relationship between public and private investment (Atukeren, 2005; Rashid, 2005; Erden & Holcombe 2006). When the public sector borrows a lot of money from domestic sources, it will impact the country's growth. In the case of Sri Lanka, the government must pay serious attention to how an increase in the growth rate can be an accomplishment.

Bahmani-Oskooee (1999) discussed how the aggregate effect of public borrowing on the interest rate could be viewed from multiple perspectives. First, the neo-classical theory of interest rate explains that the financing of a government's budget deficit increases the supply of high-interest government bonds, which decreases private investment and creates a crowding-out effect. Second, the Keynesian theory asserts that expansionary fiscal policy causes little to no increase in interest rates, and will cause a rise in incomes and output. Therefore, according to this theory, there is a crowding-in effect rather than crowding-out (Aschauer, 1989). Third, the Ricardian equivalence theorem introduced by Barro (1974) posits that an increase in the deficit-financed through fiscal spending will be matched by a rise in taxes in the future, so interest rates and private investment will experience no change.

However, if the private fixed investment is crowded out that could be negatively impacted to the long-term economic growth. This can be moderated if the borrowed funds are used to finance productive investment in the country, such as education, research, and the like. However, this situation can be worsened if government investment is not productive or public money is wasted. This crowding-out effect is mainly seen on bank balance sheets. If the governments obtain a one-dollar loan from a bank, the bank will have one less dollar to lend to the private sector. A bank's response to a large amount of public borrowings will be to adjust its loan portfolio optimally, balanced along the risk-return spectrum.

When an economy is already in the potential output, crowding out can create a severe situation for the economy. Under this situation, the expansionary fiscal policy of the government encourages prices increases, which leads to increasing demand for the money. This will cause to the higher interest rates and crowds out an interest-sensitive spending. This can suppress market output, leaving no room for the accelerator effect. In an economy under full

employment, any increase in government purchases can result in resources being taken away from the private sector. That is sometimes identified as real crowding out (Albatel, 2003).

Crowding out of another sort, called the international crowding out, may occur because the prevalence of floating exchange rates; it can be explained by the Mundell-Fleming model. It occurs when government borrowing leads to the higher interest rates, which attract inflows of money in capital accounts from foreign financial markets. That leads to an appreciation of the foreign exchange rate and crowds out domestic exports subject to floating exchange rates. This prevents the demand-promoting impacts of the government deficit, but there are no negative impacts on long-term economic growth.

2.1 Empirical Results

2.1.1 Empirical Results Related to the Crowding-out Effect

Chhibber and van Wijnbergen (1988) estimated results using Turkish data and showed that a huge budget deficit financed by domestic sources results in a decline in private investment, which causes the real rate of interest to increase. They conclude that government sector fixed investment has a substantial and negative effect on private fixed investment. Rossiter (2002) shows that public investment crowded-out private investment, while public investment in structures has a weak crowding-in effect.

Temin and Voth (2005) argued that analysing interest rates are basically misguided; they show that in eighteenth- and early-nineteenth-century England, the private lending market balanced through the quantity ratio. The authors analysed the data by using a VAR model on amounts lent by Hoare's Bank and concludes a substantial crowding-out effect that is a 1% increase in debt led to 1% decrease in private lending significant at the 1% level.

2.1.2 Empirical Results Related to the Crowding-in Effect

Using data from Mexico, Ramirez (1994) shows that the impact of public investment is a crowding-in effect, not a crowding-out one. Ouattara (2004) shows similar results by using Johansen cointegration techniques and a bounds test approach to estimate the long-run private investment function using data from Senegal.

Hyder (2001) estimated the crowding-out hypothesis in Pakistan using the vector error-correction method on gross domestic product, public investment, and private investment. The results show a complementary relationship between public and private investment. Naqvi (2002) estimated the relationship between public investment, economic growth, and private investment in Pakistan. The results show that government investment positively impacts private investment and that economic growth generates both public and private investments.

Chakraborty (2006) analysed real and financial crowding-out effects using an asymmetric vector autoregressive model in India. The results showed that there is no evidence of direct crowding-out of private investment by public investment. The results showed that there is a mutual relationship with these investments. Furthermore, it revealed that there is no evidence of a real crowding-out effect.

Majumder (2007) examined the crowding-out effect of public borrowing on private investment in Bangladesh. The author estimated the investment function by using government borrowing, the interest rate, and GDP. The long-run relationship was estimated using the unit root test, an error correction model, and a co-integration test. The results did not show any crowding-out effect; rather, they showed evidence of a crowding-in effect, though results were somewhat ambiguous.

However, most attention has been given to developing countries with high-interest rates and a history of fiscal management. Mukhtar and Zakaria (2008) examined the relationship between interest rates and budget deficits in Pakistan from 1960 to 2005. The authors conclude that government budget deficits do not significantly impact on the nominal or real interest rate in Pakistan. Moreover, Pandit (2005) investigated the relationship between budget deficits and the long-term nominal interest rate in Nepal, covering the period of 1975-2003. The author concludes that there is a positive correlation, but the relationship between budget deficits and the long-term nominal interest

rate of government securities was insignificant. Also, the author concluded that neither the demand for nor supply of long-term government securities was market-based.

2.1.3 Mixed Empirical Results

Erden and Holcombe (2005) estimated the differences between developed and developing countries in terms of the crowding-out effect by assessing the role of public investment as a determinant of private investment. The authors applied a flexible accelerator model of private investment to both developed and developing countries to identify differences in their investment behaviour. The results showed that public investment complements (crowds-in) private investment in developing countries. Moreover, the results showed that, in developing economies, private investment is constrained by the relatively low level of available bank credit. In contrast, the results showed that public investment crowd out private investment in developed economies.

Mitra (2006) estimated the crowding-out effect in India by using a structural vector auto regression (SVAR) model to analyse the behaviour of private investment, government investment, and GDP. The results revealed that public investment crowds out private investment. However, public investment had a positive impact on the country's economy in the long run.

A seminal study conducted by Aisen and Hauner (2008) analysed the impact of budget deficits on interest rates by using the generalized method of moments on panel data from 60 advanced and emerging countries. The authors showed that budget deficits significantly and positively affect interest rates. Furthermore, they explained that these impacts depend on the interaction term, and, when budget deficits or domestic debts are high and financial depth or openness is low, the effect is significant.

Akinboade (2010) examined the relationship between the government budget deficit and interest rate in South Africa using the Granger causality method. The author concluded that the budget deficit had no impact on the interest rate. Chakraborty (2012) examined whether there is any evidence of a financial crowding-out effect due to financial deregulation of the interest rate in India in recent years. The author also found that there is no relationship between budget deficit and interest rates.

Government borrowing impacts private investment through the lending rate, according to the principal. However, in many developing countries like Sri Lanka, the equilibrium interest rate can be insensitive to market perceptions. Reinhart and Sbrancia (2011) argued that government debt does not affect interest rates. However, government debt can affect private credit due to government interventions such as administrative controls (e.g., a high legal reserve ratio, control of interest rates, and direct intervention in credit allocation).

Based on the literature, we can conclude that many factors influence the effect of public borrowing on private investment, and these factors vary from country to country depending on their socioeconomic and political makeup. The effect also depends on the various sectors and industries in each economy. As such, it is difficult to predict the effect for any one country, indicating that further research is needed.

3. Analysis of the impact of macroeconomic variables on private investment in Sri Lanka

The main purpose of this section is to analyse the present trends in terms of macroeconomic variables which can impact private investment in Sri Lanka. Figure 1: Public borrowing from domestic sources (PBD) line graph shows the Sri Lanka's public borrowing from domestic sources from 1960 to 2014. Domestic sources are the primary source of funding for the government, and the public debt figures show the money taken by the public sector that is no longer available to potential private users. This discussion centres around internal public borrowing because of its potential crowding-out effect. Government borrowing from external sources does not impact internal fund availability, so it has little impact on private investment. Domestic borrowing from the Central Bank of Sri Lanka also does not play a role in creating any crowding-out effects because its purpose is to fund the government without distorting the funds available to the private sector. Sources of domestic public borrowing that are directly relevant to a crowding-out effect include the bank and non-bank sources.

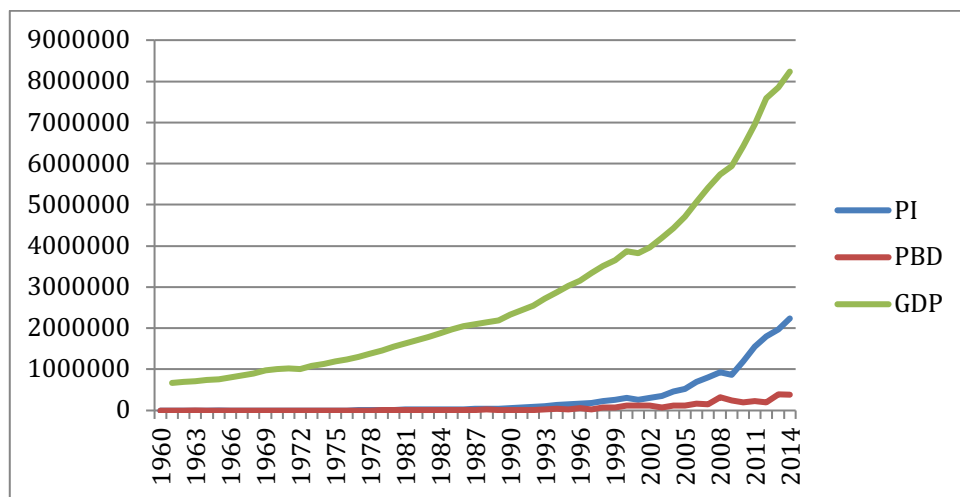


Figure 1. Public borrowing from domestic sources (PBD), Private investment (PI), Gross domestic product (GDP) 1960-2014

Source: Authors' calculations.

Figure 1: public borrowing from domestic sources (PBD) line graph shows the increasing trend in public borrowing from domestic sources (PBD). From 1970 to 1979, the PBD remained flat. From 1979 to 1992, it started to increase slightly, and between 1992 to 1995, PBD decreased somewhat. From 1998 to 2002, PBD increased sharply. The most unique characteristic of this graph is that after 2008, there was a drastic increase in PBD to finance the budget deficit of the country.

Private investment refers to investment made by the private sector, including investments both local and abroad. According to figure 1: private investment line graph shows the, after the 1979 an increase in private investment began, and it increased slightly up to 1990. From 1990 to 2000, it increased, and it decreased slightly between 2000 and 2001. From 2001 to 2008, private investment increased sharply, and it slightly decreased between 2008 and 2009.

Figure 1: gross domestic product line graph shows the country's gross domestic product, which can be defined as the total amount of all goods and services domestically produced. The GDP graph shows an increasing trend, and after 2000 it increased dramatically.

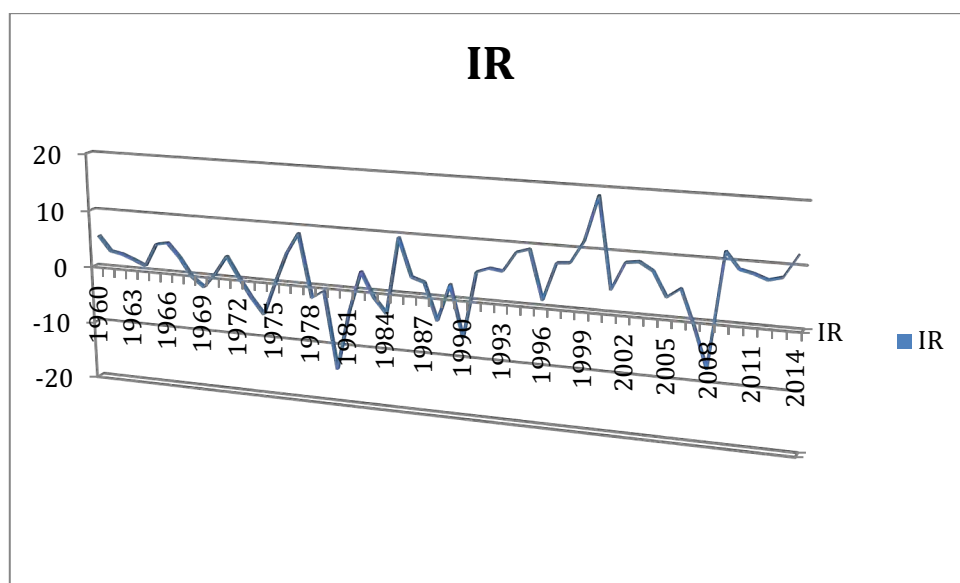


Figure 2. Real interest rate 1960-2014

Figure 2 shows Sri Lanka's real interest rate from 1960-2014. Real interest rate refers to the real weighted average interest rate on advances given by different banks.

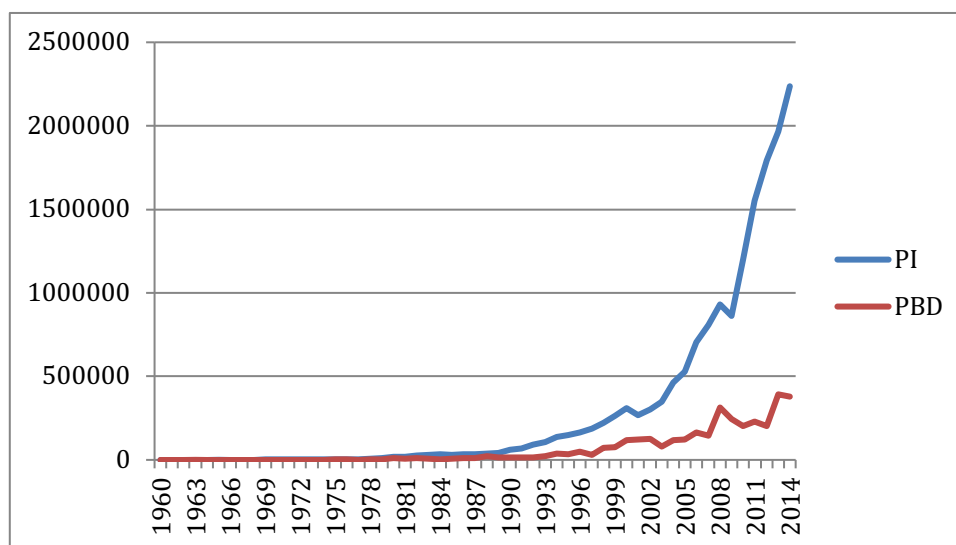


Figure 3. Public borrowing and private investment 1960-2014

Note. Source: Authors' calculations.

Figure 3 superficially indicate a positive relationship between public borrowing and private investment in Sri Lanka. However, the graphical illustration does not provide any evidence regarding the crowding out of the private investment as a result of public borrowing in Sri Lanka. Therefore, we will use an econometric model to empirically identify whether crowding out is an issue in Sri Lanka.

4. Data and Model Specification

4.1 Data

This section presents the basic data used for this study. This study uses extensive time-series data for Sri Lanka for a period of 54 years from 1960 to 2014. The sample data was primarily obtained from The Annual Report of the Central Bank of Sri Lanka (2017) and World Development Indicators.

4.2 Model Specification

Cruz and Teixeira (1999) use four approaches: the computable general equilibrium (CGE) model, the IS-LM model, an estimation of the investment function, and a model of the supply-side impact. Considering its relative advantages and higher relevancy, we selected the investment function approach to address the crowding-out issue in Sri Lanka. To estimate the private investment demand function in Sri Lanka, we focused on domestic public borrowing and gross domestic product as explanatory variables as well as interest on advances (weighted average). According to the theory, the coefficients of GDP are expected to assume positive signs, and those of interest rate are expected to assume negative signs. Public borrowing from domestic sources may be either positive or negative depending on the liquidity position of the country's economy, the psychological effect on private investors, and the nature of loan-backed public expenditures. The theoretical framework shows the relationship between private investment and public borrowing, GDP, and interest rate. It can be expressed in the following function.

$$PI = f(PB, GDP, IR), \quad (1)$$

Where,

PI = Private investment

PB = Public borrowing

GDP = Gross domestic product

IR = Interest rate

4.2.1 Nature of the variables

Private investment refers to investment made by the private sector, including both local and international ones. Public borrowing includes all domestically sourced funds borrowed by the government itself and public sector corporations. Gross domestic product refers to the total amount of goods and services domestically produced. Interest rate refers to the weighted average interest rate on advances given by different banks. All the data for variables is taken in real terms. For convenience, all the analytical variables except real interest rate, that is, real private investment, real public borrowing, and real GDP, data are taken at log level.

The model has the following form:

$$LRPI = f(LRDPB, LRGDP, RIR) \quad (2)$$

4.2.2 Method of Estimation

We use yearly time series data for the analysis, and most of the time series are non-stationary. If the series are non-stationary in the regression, the regression results will suffer from the spurious regression problem. To prevent this, we conduct a prior determination of the unvaried properties of the time series. The series holds the same order of integration, and the combination of non-stationary series that gives a stationary combination can be identified through co-integration techniques. Co-integration testing includes two steps. The first step is checking the stationarity of the data by using unit root tests. The second step is conducting a co-integration test to identify the existence of a long-run relationship. In our analysis, the Augmented Dickey-Fuller (ADF) test is performed to check for the stationarity of the variables. In implementing the ADF unit root test, we verify that each variable in the function is regressed on a constant. We analyse the dynamic interactions and long-run relationships among the variables of private investment in the model using a bounds test of co-integration developed by Pesaran, Shin, and Smith (2001). To establish the existence of a long-run relationship, we use the ARDL co-integration method. The vector error correction method is used to check the speed of adjustment of the variables. We also use VAR models to analyse the results and use a Granger causality test, variance decomposition analysis, and impulse response function techniques.

5. Results and Discussion

As a prerequisite for the co-integration test, we use the ADF and Phillips-Perron (PP) tests, including the constant without the deterministic trend and with the deterministic trend. The real interest rate (RIR) only rejects the null hypothesis of a unit root in the level form; therefore, the unit root tests were conducted at the first differences level by using the ADF and PP tests for the other three variables: LRGDP, LRPI, and LRPBD. The results of these tests indicate that the RIR is stationary at the I(0) and the other three variables are stationary at the I(1), as shown in Tables 1 and 2.

Table 1. ADF and PP unit root tests at level

Level	ADF		Phillip Peron Test		Order of Integration
	Constant	Constant with trend	Constant	Constant with trend	
LRPI	0.7708 (0.819)	-2.3019 (0.4255)	0.6805 (0.8427)	-2.1467 (0.5087)	Ho not rejected
LRPBD	-1.1459 (0.6909)	-4.5522** (0.0031)	-1.2753 (0.6347)	-4.4956** (0.0037)	Mixed Results
LRGDP	1.934 (0.9998)	-1.058 (0.9263)	1.8763 (0.9997)	-1.2934 (0.8789)	Ho not rejected
RIR	-4.546*** (0.0005)	-5.33*** (0.0003)	-4.5434*** (0.0005)	-5.3173*** (0.0003)	I(0)

Note. *, **, *** indicate rejection of the null hypothesis at the 10, 5, and 1 percent levels of significance. Source: Authors' calculations.

Table 2. ADF and PP unit root tests at first differences

First Difference	ADF		Phillip Peron Test		Order of Integration
	Constant	Constant with trend	Constant	Constant with trend	
LRGDP	-5.6397***	-5.9114***	-5.5783***	-5.7907***	I(1)
LRPI	-5.9912***	-5.9384***	-5.988***	-5.9344***	I(1)
LRPBD	-10.621***	-10.5169***	-16.458***	-16.341***	I(1)

Note. *, **, *** indicate rejection of the null hypothesis at the 10, 5, and 1 percent levels of significance. Source: Authors' calculations.

All the variables are non-stationary at the level form except for RIR in both the ADF and PP tests. Therefore, we conducted the unit root test using both the ADF and PP at the first differences, including a constant without the trend and with the trend. The results in Table 2 show that LRGDP, LRPBD, and LRPI are stationary of I (1) at the 1% significance level. The above results indicate conditions for using the ARDL-bound test approach because none of the variables in the model are I(2) or higher.

Table 3. ARDL long-run form and F-bound test

Optimal lag length	(1,4)	
F-Statistic	4.029	
Outcome	Co-integrated	
	Lower Bounds (0)	Upper Bounds (1)
10 percent level	2.508	3.356
5 percent level	2.982	3.942
1 percent level	4.118	5.2

Note. ***, **, and * denote significance at the 1%, 5%, and 10% levels, respectively. Source: Authors' calculations.

Table 3 shows the results of the ARDL long-run form and F-Bound test. According to the bounds testing, the calculated F-statistic is 4.0296, which is greater than the upper bound critical value of 3.942 at the 5% significance level. The results of the bounds testing confirmed the long-run co-integration between private investment, public borrowing from domestic sources, GDP, and interest rate.

To establish the existence of a long-run relationship, we use the ARDL co-integration method and estimate the long-run parameters by using the maximum order of the lag. The model is estimated by using the ARDL (1,0,1,0) specification, and the estimated results are calculated by normalizing private investment in the long run.

Table 4. Result of the ARDL (1,0,1,0) long-run model

Variable	Coefficient	Standard error	T-Statistics	Probability
LRPBD***	0.839967	0.288459	2.911911	0.0055
LRGDP	0.328667	0.421760	0.779276	0.4397
RIR	-0.000631	0.007543	-0.083700	0.9337
C	-1.494383	1.765588	-0.846394	0.4016

Note. Dependent Variable: D (LRPI). ** and *** represent the 5% and 1% significance levels, respectively. Source: Authors' calculations based on CBSL data.

Table 4 shows the result of the ARDL (1,0,1,0) long-run model. The estimated coefficients of the long-run relationship showed that for public borrowing from domestic sources (LRPBD) the coefficient sign is positive and significant at the 1% level. This means that, when all other variables are equal, a 1% increase in LRPBD leads to an approximately 83% increase in the private investment (LRPI). This result provides evidence to conclude an absence of financial crowding out in Sri Lanka and, quite unexpectedly, shows financial crowding in Sri Lanka.

The relationship between GDP and private investment was positive and not statistically significant. According to the LR GDP coefficient, a 1% increase in GDP would increase private investment by approximately 32%.

The coefficient of the real interest rate had a negative sign and was not statistically significant. The RIR coefficient indicated that a 1% increase in the interest rate would lead to a 1.49% decrease in private investment.

Table 5. Diagnostic and specification tests for co-integration

Test Objective	Test	Test Statistics	Probability
Heteroskedasticity	Breusch - Pagan Godfrey	1.626655	0.1715
Serial Correlation	Breusch-Godfrey Serial Correlation LM Test	0.436735	0.6489
Normality	Histogram-normality Test-(Jarque-Bera)	2.083165	0.3528

Note. Source: Authors' calculations.

Table 5 displays the diagnostic and specification tests for co-integration. This study used different diagnostic and specification tests on the error correction model, and the results shown in Table 5. The Breusch-Godfrey serial correlation LM Test does not show any evidence of a serial correlation in the disturbance of the error term. The Breusch-Pagan Godfrey heteroskedasticity test indicated that the errors were independent of the regressors. The Cusum test suggested that the model was correctly specified. The Jarque Bera normality test shows that the errors were normally distributed.

The results of the short-run dynamic obtained from the error correction model (ECM) equation are associated with a long-run relationship.

Table 6. ARDL (1,0,1,0) model error correction model results

Variable	Coefficient	Standard error	T-Statistics	Probability
LRPI(-1)	0.814288	0.067280	12.10301	0.00000
LRPBD	0.155992	0.053557	2.912661	0.0055
LRGDP	4.942668	0.895533	5.519246	0.00000
LRGDP(-1)	-4.881630	0.922675	-5.290735	0.00000
RIR	-0.000117	0.001407	-0.083335	0.9339
C	-0.277525	0.397083	-0.698910	0.4881
CointEq (-1)	-0.185712	0.037470	-4.956362	0.00000

Note. Dependent variable: Private Investment. Source: Authors' calculations based on CBSL Data.

Table 6 shows the ARDL (1,0,1,0) model error correction model results. The value of the equilibrium correction coefficient calculated by the ECM model is -0.1857, and it is highly significant. This indicates a correct sign and a relatively low-speed adjustment towards equilibrium after a shock. The results indicate that the short-run impact

of a change in public borrowing from domestic sources on private investment would be positive at the 10% significance level. Also, LRGDP(-1) shows a negative sign, and the coefficient is significant at the 1% level. GDP shows a positive sign and has a highly substantial degree in the short run. In the short term, the interest rate coefficient is negative and not significant.

We use VAR models to analyse the results, and we use a variance decomposition analysis, Granger causality test, and impulse response function.

Table 7. Granger causality test

Null Hypothesis	Chi-Square	Outcome
LRGDP does not cause the LRPI	2.997519(0.2234)	Accept the null hypothesis
LRPBD does not cause the LRPI	3.309426(0.1911)	Accept the null hypothesis
RIR does not cause the LRPI	0.876210(0.6453)	Accept the null hypothesis
LRPI does not cause the LRGDP	12.04047(0.0024)***	Reject the null hypothesis
LRPBD does not cause the LRGDP	5.367268(0.0683)	Accept the null hypothesis
RIR does not cause the LRGDP	2.477280(0.2898)	Accept the null hypothesis
LRPI does not the LRPBD	8.031584(0.0180)***	Reject the null hypothesis
LRGDP does not cause the LRPBD	0.246268(0.8841)	Accept the null hypothesis
RIR does not cause the LRPBD	0.096280(0.9530)	Accept the null hypothesis
LRPI does not cause the RIR	0.941352(0.6246)	Accept the null hypothesis
LRGDP does not cause the RIR	2.678537(0.2620)	Accept the null hypothesis
LRPBD does not cause the RIR	2.035854(0.3613)	Accept the null hypothesis

Note. Source: Authors' calculations.

Table 7 shows the results of the Granger causality test. The dependent variable interest rate in the table shows the p-values of GDP, PBD, and PI are more than 5%; therefore, we cannot reject the null hypothesis. Rather, we accept the null hypothesis. That means GDP, PBD, or PI cannot affect the interest rate. In the table, the dependent variable GDP shows that the probability values of the interest rate and public borrowing from domestic sources are more than the 5%, so we can conclude that the interest rate and public financing from internal sources cannot affect GDP. However, the p-value of private investment is less than 5%, that means private investment can affect the GDP of Sri Lanka, and the variable is at the 1% significance level. The Granger causality results for the dependent variable PBD show that the interest rate and GDP cannot affect PBD. However, LRPI can affect LRPBD. The results for the dependent variable PI show that the LRGDP, LRPBD, and RIR cannot affect private investment.

5.1 Variance Decomposition Analysis

The relative importance of each random shock (or innovation) is shown in the behavior of the variables obtained from the variance decomposition analysis. Variance decomposition helps to quantify the proportion of variations of the dependent variable explained by each of the independent variables. Tables 8 and 9 show the results of the variance decomposition approach, describing the variations in the three variables due to the one standard deviation in innovation.

Table 8. Variance decomposition of LRPI and LRGDP

Period	Variance decomposition of LRPI					Period	Variance decomposition of LRGDP				
	S.E.	LRPI	LRGDP	LRPBD	RIR		S.E.	LRPI	LRGDP	LRPBD	RIR
1	0.06	100.00	0.00	0.00	0.00	1	0.00	26.44	59.27	14.28	0.00
2	0.97	99.00	0.01	0.69	0.28	2	0.01	39.57	39.02	20.3	1.09
3	0.11	98.95	0.05	0.76	0.22	3	0.01	39.91	39.07	18.46	2.53
4	0.12	98.16	0.10	1.34	0.38	4	0.01	38.15	40.9	16.28	4.65
5	0.13	97.47	0.17	1.83	0.50	5	0.01	35.25	43.5	14.96	6.27
6	0.14	96.99	0.26	2.14	0.59	6	0.02	32.11	46.15	14.28	7.45
7	0.14	96.66	0.37	2.3	0.65	7	0.02	29.01	48.6	14.06	8.30
8	0.14	96.42	0.51	2.34	0.71	8	0.02	26.14	50.73	14.18	8.94
9	0.15	96.2	0.67	2.34	0.77	9	0.02	23.57	52.49	14.5	9.42
10	0.15	95.98	0.85	2.32	0.83	10	0.02	21.34	53.93	14.93	9.78

Table 9. Variance decomposition of LRPBD and RIR

Period	Variance decomposition of LRPBD					Period	Variance decomposition of IR				
	S.E.	LRPI	LRGDP	LRPBD	RIR		S.E.	LRPI	LRGDP	LRPBD	RIR
1	0.14	4.74	0.00	95.25	0.00	1	5.24	0.16	0.08	0.54	99.20
2	0.15	13.78	0.42	85.68	0.11	2	5.50	4.55	0.37	0.49	94.57
3	0.16	20.89	0.38	78.15	0.56	3	5.63	5.96	0.37	3.38	90.27
4	0.16	26.29	0.36	72.81	0.53	4	5.69	6.08	0.41	5.01	88.49
5	0.17	29.92	0.36	69.19	0.52	5	5.71	6.13	0.44	5.40	88.01
6	0.17	32.34	0.37	66.74	0.53	6	5.71	6.19	0.46	5.48	87.85
7	0.18	33.91	0.40	65.11	0.56	7	5.71	6.25	0.48	5.49	87.75
8	0.18	34.94	0.44	64.01	0.59	8	5.72	6.30	0.50	5.50	87.67
9	0.18	35.62	0.49	63.26	0.61	9	5.72	6.35	0.52	5.51	87.6
10	0.18	36.07	0.55	62.73	0.63	10	5.72	6.38	0.53	5.52	87.54

In the first and tenth years, the variation in LRPI attributed to LRPI itself is 100 and 95.98 percent, respectively. It seems that the highest share of difference in LRPI is explained by itself. The impact of the LRGDP on LRPI is increasing, in the long run, accounting for 0.00 and 0.85 percent, LRPBD on LRPI is a small increase in the long run, accounting for 0.00 to 2.32 LRPBD on LRPI is a small increase in the long run accounting for 0.00 to 2.32 in the first and tenth years respectively. In the first and tenth years, the variation in LRPI attributed to RIR is 0.00 and 0.83 percent, respectively.

In the first and tenth years, the variation in LRGDP attributed to itself is 59.27 and 53.93 percent, respectively. It seems that the most prominent share of variation in LRGDP is explained by itself. However, in the long run, LRPBD on LRGDP increased from 14.28 to 14.93 in the first and tenth years, respectively. Furthermore, the impact of the IR on LRGDP also increased by 0.00 and 9.78 percent in the first and tenth years, respectively. However, the impact of LRPI on LRGDP is decreasing in the long run, accounting for 26.44 and 21.34 percent in the first and tenth years, respectively.

In the first and tenth years, the variation in LRPBD attributed to LRPBD is 95.25 and 64.01, respectively. It seems that a significant share of change in LRPBD is explained by itself. The long-run impact of the LRPI on LRPBD increased drastically, from 4.74 to 36.07 percent in the first and tenth years, respectively. The impact of RIR on LRPBD also increased in the long term, from 0.00 to 0.63 percent in the first and tenth years, respectively. However, the effect of the LRGDP on LRPBD decreased in the long run, accounting for 0.00 and 0.55 percent in the first and tenth years, respectively.

In the first and tenth years, the variation in RIR attributed to RIR itself is 99.2 and 87.54, respectively. It seems that a higher share of the variation in IR is explained by itself. The impact of the LRPI on the RIR increased in the

long run, from 0.16 to 6.38 percent in the first and tenth years, respectively. The impact of LRGDP on RIR also increased in the long run, from 0.08 to 0.53 percent in the first and tenth years, respectively. The impact of the LRPBD on RIR also decreased in the long run, accounting for 0.54 and 5.52 percent in the first and ten years, respectively.

5.2 Impulse Response Analysis

The impulse response functions present the accumulated responses of the variables to a one standard deviation structural shocks. Figure 6 shows the accumulated response of the variables to shocks of one standard deviation. Figure 6. Impulse response functions

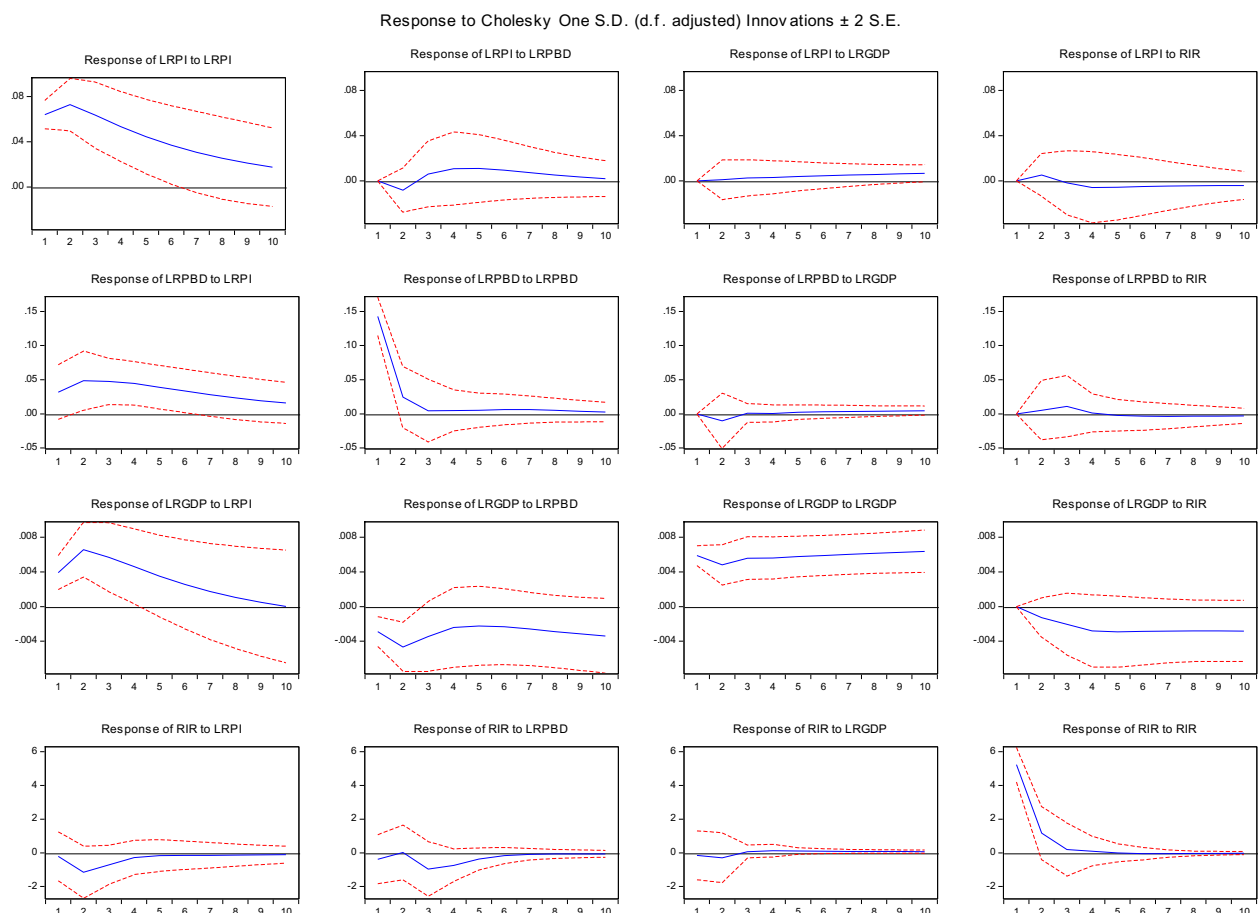


Figure 6. Impulse response functions

The first graph shows the response of LRPI to LRPI explains the effect of one positive shock on one standard deviation to private investment. Private investment will show the increasing positive relationship up to second periods after that will become the decreasing positive relationship. The response of LRGDP to LRPI graph shows that LRGDP will have a positive relationship from one to ten periods. Up to the second year, it shows increase positive relationship after that it will become the decreasing positive association with the LRPI and year 10 it will become zero impact. The response of LRPBD to LRPI graph shows that they will have a positive increasing relationship up to first period after that LRPBD will have decreasing the positive impact on LRPI. The response of the RIR to LRPI graph shows that the RIR will have a negative association with LRPI. Up to first periods, the result shows that the decreasing negative relationship after that up to the fifth period the result shows the increasing negative relationship and become constant up to a ninth period and year 10 it will become the zero impact.

This study provides evidence of a positive relationship between public debt from domestic sources and private investment in Sri Lanka. Public borrowing would not lead to a decrease in private investment in Sri Lanka when increasing the government borrowing from domestic sources increases interest rates by increasing demand for

loanable funds. All other matters being equal, higher prices will lead to reduced investment because of the lower rate of return. However, this means nothing because the Sri Lankan interest rate is directed by the Central Bank of Sri Lanka rather than the automatically adjusted by the market. This shows that the government has effectively used accommodative monetary policy to control the pressure of interest rates and private investment in Sri Lanka in the long run.

Moreover, the Sri Lankan government is able to maintain a positive balance between its capital and financial accounts by adopting unilateral liberalization of its capital account. Sri Lankan government to able do this by borrowing heavily from multilateral and bilateral donors and the Euro dollar markets. Furthermore, the significant values of worker remittances have also helped to manage this positive condition in the county.

6. Conclusion and Recommendation

The current study examined the crowding-out effect of public borrowing on private investment in Sri Lanka. The results of the study confirm that there is no crowding-out effect in Sri Lanka from public borrowing. Our estimated results show that when public borrowing from domestic sources is increased, it positively impacts private investment in Sri Lanka. This indicates an absence of the crowding-out effect due to public borrowing from domestic sources. To test reverse causality, we used the Granger causality test, and the results show that private investment can affect GDP and public borrowing in Sri Lanka. There are few findings supporting this positive effect of public borrowing on private investment from a macroeconomic point of view. To do this, we analysed macroeconomic issues and identified factors, such as the employment of effective monetary policy by the government to mitigate the crowding-out effect, liberalization of the financial market, and increased foreign remittance in the recent decades, that create a crowding-in effect rather than a crowding-out one in Sri Lanka.

The absence of a crowding-out effect emphasizes the possibility that governments can finance budget deficits through the domestic sources without influencing private investment. This shows the Central Bank of Sri Lanka has successfully mitigated the crowding-out effect of public borrowing from internal sources through an accommodative monetary policy. Liberalization in the financial markets effects monetary expansions through short-term capital inflows. Therefore, the Sri Lankan government changed its method of borrowing from conventional foreign lenders to some emerging lenders. During the last few decades, this has increased the foreign remittance of the country, and it appears to have eased constraints. This indicates the ability of the Sri Lankan government to employ an accommodative monetary policy to decrease the negative impacts of government borrowing from domestic sources.

References

- Ahmed, H., & Miller, S. M. (2000). Crowding-out and crowding-in effects of the components of government expenditure. *Contemporary Economic Policy*, 18(1), 124-133. <https://doi.org/10.1111/j.1465-7287.2000.tb00011.x>
- A.A.S.Priyadarshane and O.G.Dayarathna Banda (2013). Budget Deficit and Financial Crowding out-Evidence from Sri Lanka. *Sri Lanka Journal of Economic Research*.
- Aisen, H., and Hauner D.(2008). Budget deficits and interest rates. *IMF working papers, interenational monetary fund*, 08/42.
- Akinboade, O.A. (2004). The relationship between budget deficit and interest rates in South Africa:some econometrics results. *Development Southern Africa*, 21(2).
- Akkina, K. R., & Celebi, M. A. (2002). The determinants of private fixed investment and the relationship between public and private capital accumulation in Turkey. *The Pakistan Development Review*, 41(3), 243-254. <https://www.jstor.org/stable/41260468>
- Albatel, A.H. (2003). Government budget deficit and the crowding out of private sector investment in Saudi Arabia. *Journal of king saud university administrative science quarterly*, 17(1),1-28.
- Aschauer, D. A. (1989). Is public expenditure productive?. *Journal of Monetary Economics*, 23, 177-200. [https://doi.org/10.1016/0304-3932\(89\)90047-0](https://doi.org/10.1016/0304-3932(89)90047-0)
- Atukeren, E. (2005). Interaction between public and private investment: Evidence from developing countries. *Kyklos*, 58(3), 307-330. <https://doi.org/10.1111/j.0023-5962.2005.00290.x>

- Bahmani-Oskooee, M. (1999). Do federal budget deficits crowd out or crowd in private investment?. *Journal of Policy Modeling*, 21(5), 633-640. [https://doi.org/10.1016/S0161-8938\(98\)00005-2](https://doi.org/10.1016/S0161-8938(98)00005-2)
- Barro, R. J. (1974). Are government bonds net wealth?. *Journal of Political Economy*, 82, 1095-1117. <https://doi.org/10.1086/260266>
- Blejer, M.I. and M.S.Khan (1984). Government Policy and Private Investment in Developing countries. *Staff Papers (International Monetary Fund)* 31(2), pp. 379-403.
- Central Bank of Sri Lanka (1960-2017). *Annual report*. Colombo, Sri Lanka: Central Bank of Sri Lanka.
- Chakraborty, L. S. (2006). *Fiscal deficit, capital formation, and crowding-out: Evidence from India* (Working Paper No. 43). New Delhi: National Institute of Public Finance and Policy.
- Chakraborty, L. (2012). Interest rate determination in India: Empirical evidence on fiscal deficit-interest rate linkages and financial crowding out, economics institute Newyork, *Economics working paper archive*, wp_744.
- Chhibber, A., & van Wijnbergen, S. (1988). *Public policy and private investment in Turkey* (Working Paper No. 120). Policy, Planning and Research Department Working Papers. Washington, DC: World Bank. <http://documents.worldbank.org/curated/en/459531468760494990/Public-policy-and-private-investment-in-Turkey>.
- Chowdhary, K. (2004). Deficit financing in LDEs: Evidence from south asia. *Faculty fo commerce-economics working papers (wp04-18)*, Department of economics, university of Wollongong.
- Cruz, B. O., & Teixeira, J. R. (1999). The impact of public investment on private investment in Brazil, 1947-1990. *Cepal Review*, 67, 75-84. <http://hdl.handle.net/11362/10677>
- Cumbers, A., & Birch, K. (2006). *Public sector spending and regional economic development: Crowding-out or adding value?*. Glasgow: Centre for Public Policy for Regions, University of Glasgow.
- Engen, E. M., & Hubbard, R. G. (2004). Federal government debt and interest rates. *NBER Macroeconomics Annual*, 19, 83-138. <https://doi.org/10.1086/ma.19.3585331>
- Erenburg, S. J. (1993). *The relationship between public and private investment* (Working Paper No. 85). Annandale-on-Hudson, NY: The Jerome Levy Economics Institute. <http://dx.doi.org/10.2139/ssrn.155370>
- Erden, L., & Holcombe, R. G. (2005). The effects of public investment on private investment in developing economies. *Public Finance Review*, 33(5), 575-602. <https://doi.org/10.1177/1091142105277627>
- Erden, L., & Holcombe, R. G. (2006). The linkage between public and private investment: A cointegration analysis of a panel of developing countries. *Eastern Economic Journal*, 32(3), 479-492. <https://www.jstor.org/stable/40326291>
- Greene, J., & Villanueva, D. (1991). Private investment in developing countries: an empirical analysis. *Staff Papers, International Monetary Fund Economic Review*, 38(1), 33-58. <https://doi.org/10.2307/3867034>
- Guptha, K.L. (1992). Budget deficits and economic Activity in Asia. London:Rutledge.
- Hyder, K. (2001). Crowding-out hypothesis in a vector error correction framework: A case study of Pakistan. *The Pakistan Development Review*, 40(4), 633-650. <https://www.jstor.org/stable/41260355>
- Majumder, A. M. (2007). *Does public borrowing crowd-out private investment? The Bangladesh evidence* (Working Paper No. 0708). Dhaka: Bangladesh Bank Policy Analysis Unit.
- Mitra, P. (2006). Has government investment crowded-out private investment in India?. *American Economic Review*, 96(2), 337-341. <https://doi.org/10.1257/000282806777211621>
- Mukhtar, T., & Zakaria, M. (2008). Budget deficits and interest rates: an empirical analysis for Pakistan. *Journal of Economic Cooperation*, 29(2), 1-14.
- Naqvi, N. H. (2002). Crowding-in or crowding-out? Modelling the relationship between public and private fixed capital formation using co-integration analysis: The case of Pakistan 1964-2000. *The Pakistan Development Review*, 41(3), 255-275. <https://www.jstor.org/stable/41260469>
- Ouattara, B. (2004). *Modelling the long run determinants of private investment in Senegal* (Working Paper No. 04/05). Nottingham: The University of Nottingham, Centre for Research in Economic Development and International Trade (CREDIT). <http://hdl.handle.net/10419/8176>
- Pandit R. (2005). The impact of fiscal deficit on long term nominal interest rate in Nepal. *Economic Review*, 113-133. https://www.nrb.org.np/ecorev/pdf/vol17_art6.pdf
- Pesaran, M. H., Shin, Y., & Smith, R. J. (2001). Bounds testing approaches to the analysis of level relationships. *Journal of Applied Econometrics*, 16(3), 289-326. <https://doi.org/10.1002/jae.616>
- Ramirez, M. D. (1994). Public and private investment in Mexico, 1950-90: An empirical analysis. *Southern Economic Journal*, 61(1), 1-17. <https://doi.org/10.2307/1060126>
- Rashid, A. (2005). Public/private investment linkages: A multivariate cointegration analysis. *The Pakistan Development Review*, 44(4), 805-817.
- Reinhart, C. M., & Sbrancia, M. B. (2011). *Financial repression redux*, Finance and Development, volume.48, No.2, June.
- Rossiter, R. (2002). Structural cointegration analysis of private and public investment. *International Journal of Business and Economics*, 1(1), 59-67.

Temin, P., & Voth, H. J. (2005). Credit rationing and crowding out during the industrial revolution: Evidence from Hoare's Bank, 1702–1862. *Explorations in Economic History*, 42(3), 325-348.
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Modeling and Forecasting the Infrastructure Investments Needs in Lebanon

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Abstract

The aim of this paper is to model and forecast the infrastructure investment needs in Lebanon. It divides the Lebanese infrastructure into ten main sectors, and it represents an analysis of each sector. The article collects data of the government expenditures on projects for each sector from the Lebanese council of development and reconstruction. The expenditure on each sector represents a different impact on the Lebanese growth and the Gross Domestic Product, the article analyses the impact in an assessment approach. Findings emphasize the importance of social infrastructure in promoting growth, especially Education sector. Furthermore, findings stress the high volume of expenditure on waste water and solid waste management sector. The article proceeds by modeling the infrastructure investment need using Dynamic OLS equilibrium. The study encloses ten Dynamic OLS models, one for each sector, having the investment needs as the dependent variable, and as independent variables the Lebanese Gross Domestic Product and the Lebanese population. Eventually, the paper forecasts the Lebanese infrastructure investment needs for each sector until the year 2025. Results emphasize the unfair low expenditure on Education and other social infrastructures, and the high expenditures on inefficient sectors such as the waste water and solid waste sector, and the electricity sector. The study eventually recommends a better distribution of infrastructure investments within the Lebanese expenditures.

Keywords: Lebanese Infrastructure, Education, Investment Needs, Government Expenditures, Dynamic OLS, Solid Waste

1. Introduction

The term "infrastructure" originated in the 19th century, referring mainly to military installation. However, the economy encountered the importance of infrastructure in the new era that started during the great depression in 1929, within the framework of the new business theories of J. M. Keynes (Keynes, 1936). Since this era, the importance of what defines "below" and "structure" grows significantly. Over the last decade, actualities proved the strong relation between investing in infrastructure and sustainable business growth (Aschauer, 1989). It is the essential facilities and systems serving a country and an effective way to create jobs and restore growth. Therefore, the place of infrastructure in business is crucial to the business development. The growth of a country goes hand in hand with the development of its infrastructure.

Infrastructure refers to any type of permanent installations, which generates and helps operating other services and commodities over a long period. It includes technical, physical structures and basic services such as transportation, water and electric systems, and telecommunication. It also includes social Infrastructure, that are services essential to enable, sustain, or enhance social living conditions; such as Education, Public Health and Environmental planning.

The main objective of this article is to estimate and forecast the infrastructure investment needs in Lebanon. This interpretation is set to analyze the infrastructure sectors in Lebanon, and to estimate the demand until 2025. Based on the resulted needs, the study recommends a better distribution of expenditures. The data collected are from the Lebanese Council for development and reconstruction covering expenditures on all projects granted for each sector since the year 1992 after the civil war until the year 2016. For this purpose, the paper includes 6 sections, section 1 is the introduction, and section 2 represents the literature review. Followed by section 3 that analyses the ten main infrastructure sectors. In section 4, the paper builds ten Dynamic OLS models, one for each sector. Section 5 forecasts the investment needs, and section 6 concludes.

2. Literature Review

During the last decade, the ownership of the world's economic infrastructure shifted from the public sector to the hands of specialist private investors after acquisitions and privatization transactions. The global population will witness a 25% increase by the year 2040, meaning an almost 2 billion people. Rural to urban migration will continue with the urban population growing by 46%, triggering massive demand for infrastructure support (Heathcote, 2017). Moreover, infrastructure is a very lucrative area for investment (Heintz, Pollin, & Garret-peltier, 2009). This applies in developed countries and in emerging countries.

In general, infrastructure is an investment that is, in most cases, a public good. The main characteristic of infrastructure is that it is neither rivalry nor exclusive, meaning that it does not hold a competition of usage between a person and another. The Return on Investment differs between projects and between types of infrastructure. The cost and the profit aimed for variables upon each project distinctly. Economies of scale represent the production function of infrastructure, the higher volume of projects, the cheaper the marginal cost of the production.

Based on predicted GDP growth, Fay & Tito Yepes estimated worldwide infrastructure investment requirements by region and income group (Fay & Tito, 2003). The estimation is based on a dynamic model that relates demand for infrastructure with the structural change and growth in income. This method provides an indication of the investment required to satisfy the consumer and the producer demand. The succeeding researches present a modification to Fay & Yepes's estimations, namely Yepes (Yepes, 2004) for East Asia and the Pacific, Estache (Estache, 2004) for Sub Saharan Africa, and Fay & Morrison (Fay & Morrison, 2005) for Latin America.

Furthermore, Isabel Chatterton and Olga Susana Puerto Estimate the infrastructure investment needs in the south Asia region. Using forecasting equations, their study concludes that for the next decade, South Asia will need large investments in infrastructure to encounter the needs of its regional economy. The estimated results of their model suggest that electricity and roads will demand the largest proportion of investment, followed by telecommunication and water and sanitation (Chatterton & Susana, 2011).

In a clear vision, and backed by statistical numbers, Salameh studies the importance of Iraq's oil reserves, and its low-cost production yet explains how the Iraqi infrastructure represent a constraint to the Oil and Gas sector and to the country's development. The reasons according to Salameh are the lack of a well-organized development, geopolitical issues, incorrect governmental decisions, political instability, wars since 1979, and the lack of technologies such as 3D seismic survey (Salameh, 2013).

Furthermore, there are many theoretical and empirical evidence suggesting the strong correlation between education and business growth. For instance, (Aghion, Boustan, Hoxby, & Vandebussche, 2009) studied and proved the causal impact of Education on business growth and presented empirical evidence from the U.S. as statistical data. Sapir and Guntram justify the slow growth in the European Union's comparing to the US, as a

result of investing only 1.1 percent of its gross domestic product in higher education, compared to 3 percent in the U.S (Sapir & Guntram, 2013). Bader and Yaacoub analyzed the education sector in Lebanon, as a study in the central administrative of statistics and EU twinning project, and Bank Med issued an analysis emphasizing the importance of the Lebanese Education and presented highlights of its main aspects (Bader & Yaacoub, 2012).

Sharma and Bhanumurthy concluded that the Indian economy has been growing at an average of 8%, accompanying such a growth; there will be an increase in demand for infrastructure services, for consumption and for production. This fact can be due to the strong link between infrastructure and growth, productivity, equity and poverty in India. One of the main obstacles of the development in the country is the infrastructure deficit (Sharma & Bhanumurthy, 2017). The study proves the long-run linkage between income and infrastructure variables by applying the co-integration technique, and the long-run demand is estimated by using the Stock and Watson's dynamic OLS technique.

3. Overview of the Lebanese ten main infrastructure sectors

The economy in Lebanon survives on an aging infrastructure, heavily damaged during the civil war, and after the July 2006 war. One of the biggest obstacles facing the Lebanese industry in their expansion path is the infrastructure deficit. In 1992, shortly after the Lebanese Civil war, the Lebanese government formed the Council of Development and reconstruction (CDR). The council covers the various infrastructure sectors. The council works in accordance with the Lebanese government, and in conjunction with the various ministries related to each sector. The council conducts studies, assigns projects for each sector, and awards contracts to achieve the development and reconstruction projects.

According to the data collected from the CDR, the distribution of contracts over the main sectorial groups are close to a 25% for transportation, 17% for solid waste, 15% for water supply and wastewater, 12% for electricity and 10% for education. Every project granted can be funded nationally, from the Lebanese treasury, or from foreign funding, that also can be as loans or as grants (infrastructure Contracts awarded, 2017).

From the year 1992, after the creation of the CDR, and shortly after the end of the Lebanese civil war, the Lebanese government and CDR created several projects, of which some are implemented and others under process. This article divides the infrastructure into ten main sectors, and collects the total expenditure spent on each. The ten main sectors are: Electricity, telecommunication, transportation, education, public health, environmental planning, Agriculture, Water Supply, Waste water and Solid Waste, and finally a sector including all other projects.

3.1. Electricity sector:

Electricity is a key infrastructure in the country, and it fuels several daily activities. Many Problems face the Electricity sector, of which financial, institutional and technical. The operational expenses are relatively high, the electricity links between the old and new grid are not flexible, and some distribution poles are rusty and old. Numerous accumulated problems and chronicle difficulties linked to the technical, administrative as well as financial shortage appear when dealing with the electricity sector. Electricité du Liban (EDL) or Electricity of Lebanon is a public institution under the control of the Ministry of Energy and Water. This public enterprise is unable to meet the Lebanese demand for electricity, and it is fronting a critical stage. Founded in 1964, and delegated the duty to generate, transmit and distribute electrical energy in Lebanon. EDL currently controls over 90% of the Lebanese Electricity sector, according to the UNDP. EDL lacks effective management, monitoring, and strategic decision-making. In addition, the Human resources face a huge deficiency, and the sector needs new qualified employees and managers. This public institution needs electronic accounting programs, and standby systems, to prevent thefts aggressions, and monitor the billing and payment processes.

3.2. Telecommunication sector:

Lebanon has several communication systems, mostly telephone landline system, mobile, Radio, and television broadcasting, and internet services. It is notable, that the telecommunication infrastructure consists widely on being well connected internationally as well as locally. For this purpose, the government installed two submarine fiber

optic cable; One to connect Lebanon with Syria and Egypt, and the other to connect Lebanon with Cyprus, Crete, and France.

The development of the internet is principally poor, due to corruption, and illegal supply of internet services, in many regions. The connection is mostly very slow, and with limited storage comparing to other countries. Moreover, posts sector is young in Lebanon, and With "LibanPost" as the national post office in Lebanon, it is founded in 1998. It is a private institution, and it operates in many regions in the country, covering almost all of Lebanon. Posts services in Lebanon, requires numbering of Lebanese streets and properties, installing mailboxes, rehabilitating the post offices with proper equipment.

3.3. Transportation sector:

The slow public transportation system in Lebanon strongly deters the business status, mostly after the Lebanese civil war. Moreover, due to population growth and the refugees' crisis, the situation is getting more critical. After the Lebanese war, specifically after the year 1992, The Lebanese government, presented and implemented many programs and plans for the reconstruction of Lebanon's transportation System. It consists on main and secondary roads as well as penetrator roads, bridges, and roundabouts, tunnels and highways.

However, the country faces a significant absence of metros, trains, and subways, although there is a vital need for them, especially in the greater Beirut area. One of the main problems, caused by the inefficient transportation System, is the traffic occurring mainly in Beirut, and its suburbs. Lebanon ranks high worldwide in a number of cars, with a ratio of 434 cars per 1000 persons. Distribution of vehicles is by 90% cars, and only 2% buses (Vehicle distribution, 2015).

3.4. Education sector:

Education sector represents one of the most important infrastructures in every community. It is the key for a better future, and for assuring the healthy development and progress of the society. The Education sector is a main contributor to the Lebanese GDP, and its contribution is consistently expanding. During the year 2014, Public Expenditures stand at approximately at 641 million USD, 1.6% of the GDP while private education contributed of about 4.4% of the GDP (Lebanon's National Accounts, 2015).

Although spending on education is an investment for the future, and a catalyst for the progress and development of all other sectors of the economy, the total expenditure on education in Lebanon is still low relatively to the Middle East region. It represents only 7% of public expenditures, comparing to an 18.6% in the Middle East and North Africa, and a 14.2% worldwide. According to statistics from the World Bank Development indicators, concerning the Public Education, and comparing with other Arab Countries, where Oman spend 5.4% of their GDP on the education sector, and Tunisia spend 6.2%, Lebanon in 2012 only spent 1.6% of its GDP public expenditures on education (Lebanon National Accounts, 2015), a percentage that has been decreasing since 2006 (Public Education statistics, 2015).

3.5. Public health sector:

In Lebanon, the expenditure on Health per capita has been increasing since 2005, representing both public and private expenditures. According to the CDR, the percentage of the governmental share of the total private, public expenditures is increasing as well. It represented a low 35.8 % of the total healthcare expenditures in 2007, but witnessed an increase into reaching more than half of the total expenditures by the year 2013, (CDR Expenditures on Health, 2014).

Ministry of health adopted many goals to improve the performance of hospitals and health hubs in all regions. The government should provide health services provision as an alternative to the expensive private health system. According to the World Economic Forum for the 2016-2017, Lebanon ranked 34 in Healthcare in the Global Competitive Index, out of 138 economies.

3.6. Environmental planning sector:

Lebanon witnesses several environmental problems, such as air pollution, sea, rivers and ground water pollution, Bad protection of touristic and archaeological sites, and others. Lebanon has very weak anti-pollution measures and poor management of the present and future environmental crisis. The problems increased during the civil war and remained until today. Furthermore, the garbage crisis of the year 2015 left Lebanon's streets filled with rotting trash. Environment and regional planning should recover from the continuing problems and worries, to protect what is left of touristic sites, as well as providing a clean environment to the coming generations.

Moreover, in 2014, Lebanon ranked fifth worldwide in Pollution index, which is an estimation of overall pollutions, with the biggest weight given to the air pollution, then to water pollution, and with a slight weight to other pollutions. The country also ranks second in 2014, in drinking water pollution worldwide, according to the CIA factbook. Noting that the environmental planning goes hand in hand with the GDP per capita growth.

3.7. Agriculture sector:

In Lebanon, the agriculture sector contributes in about 17% of the total value of exports, while the sector only contributes to 6.3% of the GDP. According to the Food and Agriculture Organization in 2010, 67% of the Lebanese territory is agriculture areas. The state can help the sector, by implementing laws and regulations to prevent foreign competitors in the Lebanese markets. The agriculture market is not stable, due to many economic, environment and climate factors, the state should take cautions and help the national farms and agricultural entities. Moreover, additional water resources should be built, like lakes, dams and irrigation facilities. Lebanon geographical location and climate are a good advantage for the production. With the help of the state, the sector of agriculture can limit the obstacles, be more profitable and contribute in a higher percentage of export, while protecting the environment.

3.8. Water Supply sector:

Lebanon does not use non-conventional water resources and almost no reuse whatsoever of treated wastewater. The country has 40 rivers of which 17 are considered permanent, and about half of Lebanon's water supply is sourced from groundwater. The major aquifers in Lebanon are contained in limestone, which means that rainwater and snowmelt are rapidly absorbed into the subsurface.

The Lebanese government expenditures on water supply and management witnessed a high increase since the year after the Lebanese war, and until 2016. The percentage of expenditure on water supply projects over the total government expenditure on all infrastructures grew from 0.6% in 1992 and reached more than 9% at the year 1997, as of numbers collected from the CDR. The ratio remained almost the same since 1997 until 2016, which emphasize the continuous investments and interest of the Lebanese government to ensure better water supply management to the country.

3.9. Waste water and the solid waste sector:

Until the early nineties, wastewater facilities in Lebanon were incomplete and lacked any treatment plants. Therefore, the water pollution in the country kept worsening, polluting the sea, the beaches and threatening the sanitary environment. The insufficiency of wastewater services is due to the insufficient spending to this sector, to the absence of proper management and structure, and the absence of any modern methods for wastewater disposals. Solid waste refers to any garbage due to items consumed and left behind after a human activity, and which hold no value and therefore neglected and need to be disposed of. Solid wastes can be solid, liquid, and semi-solid or containerized gaseous material.

Moreover, proper management of the wastewater and solid waste management is very critical and urgent in Lebanon. The country is suffering from poor infrastructure and disposal of waste, to the point, it reached a garbage crisis in 2015. The severe trash crisis left the capital Beirut, and many other cities drawn in solid waste and garbage for many months, with no sight of healthy solutions.

Projects granted to the solid waste and water waste sector had very little interest in the years following the war, which explains the problems the country is facing today. However, recent expenditures to the sector gain more insight and more percentage of the total government expenditures. In 1992, only 5% of the government expenditure

was to the solid waste and water waste sector, but accumulated projects from 1992 until 2016 reached more than 25% of the total government spending according to the projects granted by the CDR (The solid waste and water waste report, 2017). The biggest challenges facing the household waste in Lebanon is dealing with waste by recycling and sorting, and finding landfill locations, ordinary dumps or landfill sites for final dumping.

3.10. Other sectors:

Other sectors include projects granted for sovereign services, Public buildings, management, and implementation and oil and gas industry. The need of the Lebanese public institutions resides on the construction or renovation of government facilities. The public spending on these other sectors represents 6.6% of the total government spending, from 1992 until the end of 2016, as of data from the CDR (Other sectors reports, 2017). Furthermore, any project granted needs management, researching, and implementation, regarding the importance of specialization, integrity, training, and experience.

4. Infrastructure investment needs models

This study aims the projection of the Lebanese infrastructure investments needs for the future. Following Fay (2001) and Fay and Yepes (2003), the study utilizes time-series data and estimate separate demand functions for each infrastructure sector mentioned earlier. Using the estimated income elasticity, the study will eventually project the investment need for each sector up to 2025, based on estimated Lebanese GDP by the IMF.

Studies that are specific for studying a country's GDP and infrastructure demands used the Dynamic OLS (DOLS) methodology developed by (Stock & Watson, 1993). This methodology initiates more robust estimators for small samples and corrects the bias, simultaneity and serial correlation problems. For instance, (Masih & Masih, 1996) for China, (Al Azzam & Hawdon, 1999) for Jordan, as well as (Sharma & Bhamumurthy, 2014) for India. Knowing that variables in this study might encounter similar problems, it is appropriate to employ DOLS methodology to estimate the elasticity.

4.1. Variables:

The variables in log form are the government infrastructure investments in each sector as dependent variable collected from the Lebanese CDR, and the GDP and population growth as independent variables collected from the IMF. Variables cover yearly data from 1992 until 2016 included.

Table 1. Model Variables and description

Variable	Description	Source
Lgdp	Lebanese Real GDP growth	IMF
Lpop	Lebanese Population	IMF
Lelec	Expenditures on Electricity - in millions of USD	CDR
Ledu	Expenditures on Education - in millions of USD	CDR
Lenv	Expenditures on Environmental planning - in millions of USD	CDR
lpbheal	Expenditures on Public health - in millions of USD	CDR
lwaste	Expenditures on Waste water - in millions of USD	CDR
ltelecom	Expenditures on Telecommunication - in millions of USD	CDR
Ltran	Expenditures on Transportation - in millions of USD	CDR
lother	Expenditures on all other sectors - in millions of USD	CDR
Lagr	Expenditures on agriculture - in millions of USD	CDR
lwtrsup	Expenditures on water supply - in millions of USD	CDR

4.2. Augmented Dickey-Fuller test:

The study estimates the unit root of the series by applying the augmented dickey and Fuller tests (ADF). The table 2 shows the results, suggesting that most infrastructure variables are at level. However, GDP and the population independent variables are integrated to the order 1.

Table 2. ADF test results

	At level		At first difference		Lag
	t-Statistic	Prob.	t-Statistic	Prob.	
Lgdp	-0.15017	0.9326	-4.01922	0.0055*	0
Lelec	-10.3075	0.0000*	-1.94389	0.3077	0
Lpop	0.812505	0.9917	-4.10504	0.005*	2
Ledu	-4.80565	0.0008*	-3.47672	0.0184*	0
Lenv	-4.10386	0.0043*	-4.10386	0.0043*	0
lpbheal	-12.8202	0.0000*	-1.83563	0.3549	0
lwaste	-5.69349	0.0001*	-1.97053	0.2967	0
ltelecom	-7.46009	0.0000*	-0.95895	0.75	0
Ltran	-5.08504	0.0004*	-3.47719	0.0183*	0
lother	-0.12101	0.9362	-4.59326	0.0015*	0
Lagr	-2.07144	0.2569	-4.44959	0.0021*	0
lwtrsup	-7.81207	0.0000*	-2.06394	0.2598	0

ADF test results for yearly data expressed in log, from 1992 until 2016. Source: Calculated by the author using Eviews data collected from the Lebanese CDR and IMF. *significant at 5%

4.3. Lag Length criteria and Co-integration:

The paper proceeds by applying the lag length criteria and accordingly the co-integration analysis, using the Johansen and Juselius (1990) multivariate co-integration analysis. The study takes into consideration which variables are at level, and which is integrated at first difference before applying the co-integration testing. Table 3 represents the results of Johansen co-integration test (Trace Statistics) for each model. Furthermore, the table represents the Lags and leads that justify the co-integration between the variables. Moreover, the results suggest having a co-integration relation in all the models, between the dependent variable and the independent variables at specific lags and leads.

Table 3. Co-integration test results for the ten models

Model 1 (electricity)	Hypothesized No. of CE(s)	Eigenvalue	Trace	0.05 Critical Value	Prob.**
Lag and Lead : 1 2	None *	0.981307	95.21002	29.79707	0
	At most 1	0.194869	7.659249	15.49471	0.5025
Model 2 (telecom)	Hypothesized No. of CE(s)	Eigenvalue	Trace Statistic	0.05 Critical Value	Prob.**
Lag and Lead : 1 2	None *	0.753957	44.01494	29.79707	0.0006
	At most 1	0.377001	14.56773	15.49471	0.0686
Model 3 (transportation)	Hypothesized No. of CE(s)	Eigenvalue	Trace Statistic	0.05 Critical Value	Prob.**
Lag and Lead : 1 2	0.721625	44.41063	29.79707	0.0005	0.0006
	0.409836	14.99852	15.49471	0.0593	0.0686
Model 4 (Education)	Hypothesized No. of CE(s)	Eigenvalue	Trace Statistic	0.05 Critical Value	Prob.**
Lag and Lead : 1 2	None *	0.981307	95.21002	29.79707	0

	At most 1	0.194869	7.659249	15.49471	0.5025
Model 5 (public health)	Hypothesized No. of CE(s)	Eigenvalue	Trace Statistic	0.05 Critical Value	Prob.**
Lag and Lead : 1 2	None *	0.786425	44.41727	29.79707	0.0005
	At most 1	0.46378	13.5419	15.49471	0.0964
Model 6 (Environment)	Hypothesized No. of CE(s)	Eigenvalue	Trace Statistic	0.05 Critical Value	Prob.**
Lag and Lead : 1 2	None *	0.637071	27.96252	29.79707	0.0288
	At most 1	0.14482	4.650944	15.49471	0.096
Model 7 (Agriculture)	Hypothesized No. of CE(s)	Eigenvalue	Trace Statistic	0.05 Critical Value	Prob.**
Lag and Lead : 1 1	None *	0.680145	37.09998	29.79707	0.006
	At most 1	0.364234	10.88259	15.49471	0.2188
Model 8 (water Supply)	Hypothesized No. of CE(s)	Eigenvalue	Trace Statistic	0.05 Critical Value	Prob.**
Lag and Lead : 1 2	None *	0.810821	45.2569	21.13162	0
	At most 1	0.340364	8.546617	14.2646	0.3258
Model 9 (Waste)	Hypothesized No. of CE(s)	Eigenvalue	Trace Statistic	0.05 Critical Value	Prob.**
Lag and Lead : 1 1	None *	0.786719	43.39518	29.79707	0.0008
	At most 1	0.464357	12.49227	15.49471	0.1348
Model 10 (Others)	Hypothesized No. of CE(s)	Eigenvalue	Trace Statistic	0.05 Critical Value	Prob.**
Lag and Lead : 1 2	None *	0.860221	54.7484	29.79707	0
	At most 1	0.310364	9.491491	15.49471	0.3219

Trace Statistic and lag and lead test results for each of the ten models. Prepared by the author using eviews and excel. Data collected from the Lebanese CDR and the IMF

4.4. Stock-Watson Dynamic OLS models:

After the unit root testing and after establishing the presence of co-integration for each sector model, the study estimate the long-run elasticity of these models using the Dynamic OLS technique developed by Saikkonen (Saikkonen, 1991) and Stock and Watson (Stock & Watson, 1993).

$$\begin{aligned} \text{LELEC} &= C(1)*\text{LGDP} + C(2)*\text{LPOP} + C(3) & (1) \\ \text{LTELECOM} &= C(1)*\text{LPOP} + C(2)*\text{LGDP} + C(3) & (2) \\ \text{LTRAN} &= C(1)*\text{LGDP} + C(2)*\text{LPOP} + C(3)*\text{LTRAN}(-1) + C(4) & (3) \\ \text{LEDU} &= C(1)*\text{LGDP} + C(2)*\text{LPOP} + C(3) & (4) \\ \text{LPBHEAL} &= C(1)*\text{LGDP} + C(2)*\text{LPOP} + C(3)*\text{LPBHEAL}(-1) + C(4) & (5) \\ \text{LENV} &= C(1)*\text{LGDP} + C(2)*\text{LPOP} + C(3) & (6) \\ \text{LAGR} &= C(1)*\text{LGDP} + C(2)*\text{LPOP} + C(3) & (7) \\ \text{LWTRSP} &= C(1)*\text{LPOP} + C(2)*\text{LGDP} + C(3)*\text{LWTRSP}(-1) + C(4) & (8) \\ \text{LWASTE} &= C(1)*\text{LGDP} + C(2)*\text{LPOP} + C(3)*\text{LWASTE}(-1) + C(4) & (9) \\ \text{LOTHERS} &= C(1)*\text{LPOP} + C(2)*\text{LGDP} + C(3) & (10) \end{aligned}$$

This technique improves the robustness of the model because the endogeneity of any of the regressors will not have any asymptotic effect on the estimates. Therefore, the DOLS equations are as follow from equation (1) until (10) for each infrastructure as follow:

4.4. Result of the Dynamic OLS estimation models:

The forecasted values for log (electricity) represent low root mean error (0.23), and a low mean absolute error (0.23) as well as a minimal Theil Inequality coefficient (0.02), which validates the accuracy and efficiency of the model again. Furthermore, the Electricity estimation model is represented in equation (11) with the probability of each coefficient and the model characteristics:

$$\text{LELEC} = -2.23806574309 * \text{LGDP} + 4.64935158488 * \text{LPOP} - 43.1062867912 \quad (11)$$

P: 0.0514 P: 0.0308 P: 0.0458

R-squared: 0.81 S.E. of regression: 0.0922 Durbin-Watson: 1.242

The forecasted values for log (telecommunication) have a low root mean error (0.014), low mean absolute error (0.012) as well as a minimal Theil Inequality coefficient (0.001), with a correlation of +99.5% between the values. Telecommunication estimation model is represented in equation (12)

$$\text{LTELECOM} = 3.41634633494 * \text{LPOP} - 1.53984680348 * \text{LGDP} - 31.3670682282 \quad (12)$$

P: 0.0044 P: 0.013 P: 0.008

R-squared: 0.94 S.E. of regression: 0.047 Durbin-Watson: 1.042

The forecasted values for log (transportation) sector represent slightly low root mean error (0.03), and a low mean absolute error (0.012) as well as a minimal Theil Inequality coefficient (0.002). The correlation between the forecasted data and the actual data stands at 99.3%. The Transportation estimation model is in equation (13):

$$\text{LTRAN} = -0.18975565 * \text{LGDP} + 0.34915036 * \text{LPOP} + 0.90805249 * \text{LTRAN}(-1) - 2.836672 \quad (13)$$

P: 0.21 P: 0.301 P: 0.00 P: 0.44

R-squared: 0.99 S.E. of regression: 0.049 Durbin-Watson: 2.64

The forecasted numbers for log (Education) represent fair equations of estimation with a root mean squared Error of 0.22, Mean absolute Error of 0.19 and a Theil Inequality Coefficient of 0.017. However, the correlation constant is a positive 86%. The Education equation along with substitute coefficient is in equation (14):

$$\text{LEDU} = -15.3354198654 * \text{LGDP} + 32.8075467524 * \text{LPOP} - 352.360087336 \quad (14)$$

P: 0.075 P: 0.043 P: 0.035

R-squared: 0.792 S.E. of regression: 0.732 Durbin-Watson: 1.04

The forecasted values for log (Public Health) are accurate, with very low mean squared Error (0.03), Mean Absolute Error (0.02) and very low Theil Inequality (0.003). The public health equation of estimation with the probabilities of each coefficient is represented in equation (15).

$$\text{LPBHEAL} = 0.22853 * \text{LGDP} - 0.5124087 * \text{LPOP} + 0.8486695 * \text{LPBHEAL}(-1) + 6.641195 \quad (15)$$

P: 0.27 P: 0.19 P: 0.00 P: 0.118

R-squared: 0.99 S.E. of regression: 0.06 Durbin-Watson: 1.11

The forecasting results represent high efficiency in estimating future needs of environmental planning. Having low Root mean Squared Error (0.11), low Mean absolute error (0.05) and low Theil inequality coefficient (0.01), The DOLS estimation equation substituted with its coefficient is presented in equation (16).

$$\text{LENV} = -8.9174997069 * \text{LGDP} + 21.3725875798 * \text{LPOP} - 240.04110061 \quad (16)$$

P: 0.003 P: 0.006 P: 0.0003

R-squared: 0.97 S.E. of regression: 0.21 Durbin-Watson: 1.06

The forecasted values for log (agriculture) represent fair root mean error (0.3), and a fair mean absolute error (0.22) as well as a slightly low Theil Inequality coefficient (0.003), which validates the accuracy and efficiency of the model. After implementing the coefficients, the DOLS equation (17) is, therefore:

$$\text{LAGR} = -4.44173814388 * \text{LGDP} + 13.0624472445 * \text{LPOP} - 153.464915062 \quad (17)$$

P: 0.05 P: 0.003 P: 0.001

R-squared: 0.92 S.E. of regression: 0.34 Durbin-Watson: 1.41

The estimation equation (18) for log (WaterSupply) represents Root mean squared error of (0.23), low Mean Absolute Error (0.19) and a low Theil inequality Coefficient (0.01).

$$\text{LWTRSP} = -0.16705122 * \text{LPOP} + 0.31768 * \text{LGDP} + 0.7693391 * \text{LWTRSP}(-1) + 1.26958 \quad (18)$$

P: 0.83 P: 0.47 P: 0.00 P: 0.88

R-squared: 0.98 S.E. of regression: 0.14 Durbin-Watson: 1.15

The forecasted test statistics of the Waste water and solid waste equation (19) have low Root mean squared error (0.03), low Mean Absolute Error (0.02) and a Theil inequality Coefficient of (0.002).

$$\text{LWASTE} = 0.10680103 * \text{LGDP} - 0.26700073 * \text{LPOP} + 0.94386 * \text{LWASTE}(-1) + 3.630151 \quad (19)$$

P: 0.83 P: 0.47 P: 0.000 P: 0.883

R-squared: 0.99 S.E. of regression: 0.06 Durbin-Watson: 1.20

Finally, the other sectors estimation equation (20) has low Root mean squared error (0.15), low Mean Absolute Error (0.12) and a low Theil inequality Coefficient (0.01).

$$\text{Lothers} = 0.0648970296948 * \text{LPOP} + 1.83056995581 * \text{LGDP} - 11.2853407935 \quad (20)$$

P: 0.91 P: 0.0001 P: 0.089

R-squared: 0.98 S.E. of regression: 0.07 Durbin-Watson: 2.36

5. Forecasted Infrastructure investment needs until 2025

After conducting the Dynamic OLS estimation for each sector, the article uses the DOLS estimation equations along with the IMF data for the Lebanese projected GDP growth and projected population growth until 2025. The article hence forecasts the infrastructure investment needs in Lebanon. Results are shown in table 4, showing the ten sectors with the projected demand for investment for each until 2025, numbers as the percentage of each sector out of the total investment needs.

Table 4. Forecasted Percentage of each infrastructure investment needs until 2025

Forecasted data of:	2019	2020	2021	2022	2023	2024	2025
Electricity investment needs	10%	9%	8%	8%	7%	7%	7%
Telecommunication Investments needs	6%	5%	5%	5%	5%	5%	5%
Transportation Investments needs	24%	24%	24%	25%	23%	23%	23%
Education Investment needs	9%	8%	8%	8%	9%	9%	9%
Public Health Investment needs	2%	2%	2%	2%	2%	2%	2%
Environmental Planning Investment needs	1%	1%	1%	1%	1%	1%	1%
Agriculture Investment Needs	3%	3%	3%	3%	3%	3%	3%
Water supply Investment needs	8%	8%	8%	8%	8%	8%	8%
water and solid Waste Investment needs	30%	33%	33%	33%	35%	36%	35%
Other investment needs	7%	7%	7%	7%	7%	7%	7%

Projected infrastructure investment needs using estimation equations, unit is the percentage of each sector out of the total investment needs. Data collected from IMF. Prepared by the author

5.1. Results Analysis:

The government expenditure on infrastructure ends with inefficient distribution of projects and an unfair financing to a different sector. In more details, since 1992, the water and solid waste sector absorb the highest percentage of the expenditure (almost 27%); and the second-highest sector is the transportation sector. Together, the two sectors aggregate more than 50% of the Lebanese government expenditures. Despite that, the government could not organize the transportation sector, which still holds several problems. On the same subject, the Waste management sector should not absorb such a high amount of financing and percentage of expenditure, knowing that the government can implement innovative and technical strategies and researches to ensure proper management of waste without having such high cost. If the country continues using same strategies the transportation and the waste management sector will continue holding the highest percentage of expenditures. Lebanon, might spend more than 58% of its total expenditures on wastewater and transportation, and therefore, widen the problem of inefficient distribution.

Moreover, the educational and agriculture sectors are heavily undervalued, and do not absorb their fair percentage of expenditure. First, the Agriculture sector currently represents 6% only of the Lebanese GDP, and the government transfers only 3.5% of the total expenditure to the agriculture sector. To add, according to the estimations, if the government continues with the same strategy, the percentage might drop to a critical level of less than 2.8% in 2025. Second, the most positively correlated sector with the Lebanese GDP/capita growth is the education sector, with a significant 95% correlation. Despite this fact, the Lebanese Government distributes less than 8% of its total expenditures on the Education sector, and as per the estimations, the percentage will not change significantly. The same applies for all vital social infrastructure, namely environmental planning and public health.

5.2. Recommendations:

Lebanon needs improvements in its distribution strategies, which might lead to business growth and sustainability. The country needs to manage the waste sector properly, by lowering its share of expenditures significantly, and by performing better management and control. On another hand, the country might not be spending fair enough on its education sector, and it also has no proper research and development studies. Therefore, the paper highly recommends increasing the expenditure on Education. Likewise, the country needs spending more on other social infrastructures such as the public health and the environmental planning.

Furthermore, expenditures on the electricity sector seem not efficient, and the EDL is not capable of supplying the Lebanese market, due to technical losses, aging plants, and improper management. The paper suggests a decrease of expenditures on electricity, and an increase in its management and control. Finally, the agriculture seems lacking the fair share of expenditures, knowing that the country holds high potential in this key infrastructure field.

6. Conclusion

This paper aimed a proper estimation of the infrastructure investment needs in Lebanon. First, the analysis showed the importance of Education among other social infrastructures that are not having their sufficient share of expenditures from the Lebanese government. However, the study showed the high spending on waste water and solid waste sector, knowing that despite this immense expenditure on it, this sector is incapable of finding a solution to the garbage crisis, nor to sewers problem. The study also showed the inefficiency of the Electricity sector to supply energy to the market, as well the unfair spending to the agriculture sector with its outdated technologies.

Furthermore, the paper built Dynamic OLS models, one for each of the ten main infrastructures. The estimation equation used the data of expenditures from the CDR as amount of projects granted in millions of dollars. It also collected the real and projected numbers of GDP and population from the IMF. The DOLS equations are then used to forecast the infrastructure investments need in Lebanon until the year 2025.

Results proved the immense share of the waste water and solid waste sector despite its efficiency. It also showed the unfair low expenditure on education, public health, and environmental planning sectors. Therefore, it is

recommended to gain better management in the lagging sectors of waste and electricity, and to have higher expenditures on Education and social sectors.

References

- Keynes, J. (1936). The general theory of employment, investment, and money.
- Aschauer, D. (1989). *Is public expenditure productive?* (2 ed., Vol. 23). Journal of Monetary economics
- Heathcote, C. (2017). Forecasting infrastructure investment needs for 50 countries, 7 sectors through 2040. World Bank. Infrastructure and public private partnership BLOG.
- Heintz, J., Pollin, R., & Garret-peltier, H. (2009). How Infrastructure Investments Support the U.S. Economy: Employment, Productivity and Growth. Political Economy Research Institute (PERI).
- Fay, M., & Tito, Y. (2003). Investing in infrastructure: what is needed from 2000 to 2010? The World Bank.
- Yepes, T. (2004). *Expenditure on Infrastructure in East Asia Region*. The World Bank.
- Estache, A. (2004). *Infrastructure services in developing countries: Access, Quality, Costs and Policy Reform*. policy research working papers
- Fay, M., & Morisson, M. (2005). *Infrastructure and Sustainable development*. World Bank.
- Chatterton, I., & Susana, P. (2011). *Estimation of infrastructure investment needs in the south asia region executive summary*.
- Salameh, G. (2013). *Iraq: An Oil Giant Constrained by Infrastructure & Geopolitics*. USAEE / IAEE Working Paper Series.
- Aghion, P., Boustan, L., Hoxby, C., & Vandenbussche, J. (2009). *The Casual Impact of Education on Economic Growth: Evidence from U.S.* 2009. Cambridge, Massachusetts: Harvard University.
- Sapir, A., & Guntram, B. (2013). *European Macroeconomics & Governance*.
- Bader, L., & Yaacoub, N. (2012). *Education in Lebanon*. Beirut: Central administrative of statistics and EU twining project.
- Sharma, C., & Bhanumurthy, N. (2017). *Estimating infrastructure needs for India*. (2015). Public Education statistics. World Bank.
- (2017). *infrastructure Contracts awarded* . Council of development and reconstruction .
- (2011). *Telecommunication sector*. CIA factbook.
- (2015). *Vehicule distribution* . CIA factbook.
- (2015). *Lebanon National Accounts* . World Bank Development Indicators.
- (2014). *CDR Expenditures on Health*. Council for development and reconstruction.
- Fay, M., & Tito, Y. (2003). *Investing in infrastructure: what is needed from 2000 to 2010?* The World Bank.
- Stock, J., & Watson, M. (1993). *A Simple Estimator of Cointegrating Vectors in Higher Order Integrated Systems*. Econometrica.
- Masih, R., & Masih, A. (1996). *Stock-Watson Dynamic OLS (DOLS) and Error Correction Modeling Approaches to Estimating Long and Short Run Elasticities in a Demand Function* (Vol. 20). Mainland China Energy Economics.
- Al Azzam, A., & Hawdon, D. (1999). *Estimating the demand for energy in Jordan: a stock-watson dynamic OLS (DOLS) approach*. Amman: Surrey Energy Economics Center (SEEC).

How has the Chinese Yuan Evolved since the 2005 Reform?

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Abstract

This study employs the bootstrap method to explore the evolution of the Chinese yuan. We use the following three random walks to characterize the evolution of the yuan: an IID-parameterized random walk, an ARCH(3)-parameterized random walk, and a GARCH(1,1)-parameterized random walk. To proceed, we use the bootstrap method to generate 10,000 artificial yuan series from each random walk and compute the return from the trading rule (i.e., moving average or trading range break) for each of the 10,000 artificial yuan series. Then, we construct a 95% percentile interval with these 10,000 returns to determine if the interval contains the return computed from the actual yuan series. Using daily exchange rate data from 22 July 2005 to 19 July 2019, our results show that, of the three random walks, the GARCH(1,1) random walk best portrays the yuan since the 2005 exchange rate system reform.

Keywords: Yuan, Bootstrap, Random Walk, Moving Average, Trading Range Break

JEL Classification: C22, G15

1. Introduction

On 5 August 2019, the Treasury Department of the United States accused China of currency manipulation and designated it a currency manipulator, a historic move that it had not exercised since the Clinton administration. The designation came after China allowed its official currency, the yuan or the renminbi (RMB), to depreciate to an exchange rate of over 7-to-1 against the U.S. dollar. The U.S. Treasury Department claimed:

In recent days, China has taken concrete steps to devalue its currency, while maintaining substantial foreign exchange reserves despite active use of such tools in the past. The context of these actions and the implausibility of China's market stability rationale confirm that the purpose of China's currency devaluation is to gain unfair competitive advantage in international trade.

China refuted that the U.S. accusation was groundless and not in agreement with the facts. Wang Chunying, a spokesperson for the State Administration of Foreign Exchange of China, said: "China will keep its foreign exchange management policies stable and consistent. It is the U.S.'s escalating trade friction that has affected the exchange rate of the yuan, to which the market has already fully responded."

In an annual report of China's economic policies, released on 9 August 2019, the International Monetary Fund (IMF) did not seem to be on the U.S. side. The IMF said that China actually took steps to prop up the yuan's value after it declined against the dollar between mid-June and early August 2018. Overall, the yuan was broadly stable in 2018, depreciating by just 2.5 percent against a basket of foreign currencies. IMF staff concluded the yuan's value in 2018 was broadly in line with medium-term fundamentals and desirable policies. That is, it is basically not over- or undervalued.

For many years before July 2005, China pegged the yuan to the U.S. dollar at 8.27 RMB per dollar. On 21 July 2005, the People's Bank of China (i.e., the central bank of China) initiated a major reform for the yuan, switching it from a fixed rate system to a managed floating exchange rate system, under which the yuan is allowed to float in a narrow margin around a fixed base rate with reference to a basket of foreign currencies, including the dollar, the euro, and the Japanese yen. Figure 1 shows the exchange rate between the yuan and the dollar from 22 July 2005 to 9 August 2019.

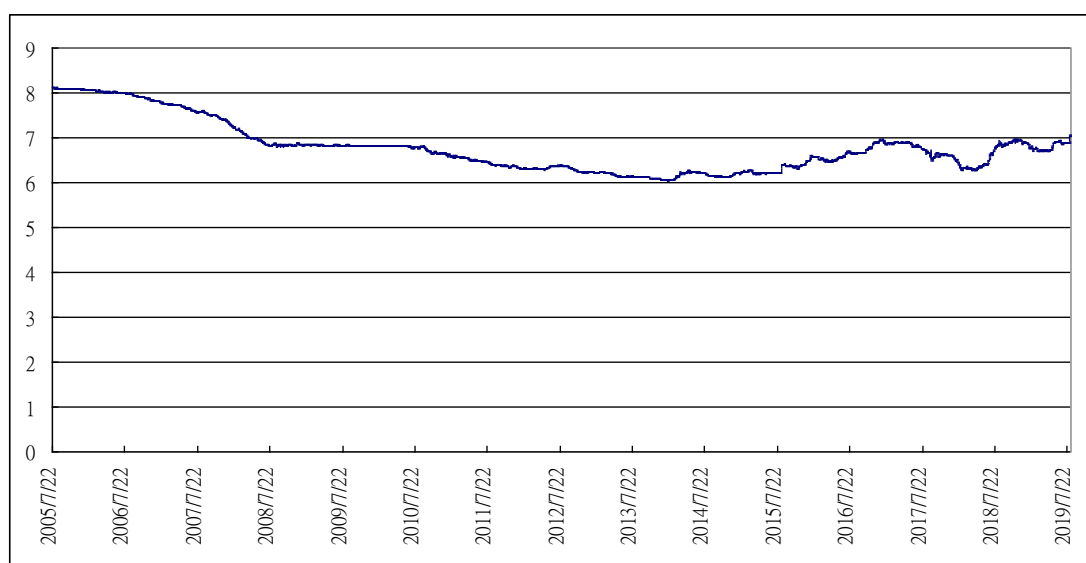


Figure 1. Yuan per US Dollar: 22 July 2005 – 9 August 2019

Given the growing importance of the yuan in the foreign exchange market over the past two decades, an interesting question among many financial economists is: How has the yuan evolved since the exchange rate system reform¹ on 21 July 2005? That said, this study attempts to explore the evolution of the yuan from 22 July 2005 up to 19 July 2019, a total of 14 years of daily exchange rate data. However, for time series data, we are constrained by the fact that we have just one series of historic data to study. It is not surprising that previous empirical findings based on different time series data are, to a certain degree, divided on how the yuan or other currencies have evolved. Given one and only one sample of time series data, is there a technique to use this only sample to assign a measure of accuracy to a statistic related to the data? The bootstrap method of Efron (1979) can be adapted for such a situation. Simply put, the bootstrap enables us to generate at random a large number of artificial data series from a given random process such that each of these artificial data series will preserve the statistical properties of the actual data series. Based on these artificial data series, we can construct a percentile interval to assign a measure of accuracy to the statistic of interest.

Accordingly, this study employs the bootstrap method to explore which of the following three popular random walks² best portrays the evolution of the Chinese yuan: IID-parameterized random walk, an ARCH(3)-

¹ See Funke and Rahn (2005), Goh and Kim (2006), and Ogawa and Sakane (2006).

² See Giddy and Duffy (1975), Mussa (1979), Meese and Rogoff (1983), Milhoj (1987), Hsieh (1988), Baillie and Bollerslev (1989), and Diebold and Nerlove (1989).

parameterized random walk, and a GARCH(1,1)-parameterized random walk³. In this study, the statistic of interest is the returns from two popular trading rules (moving average and trading range break), computed from either the actual yuan series or the artificial yuan series. Specifically, we use the bootstrap to generate at random from each random walk 10,000 artificial yuan series such that each of these 10,000 artificial yuan series will possess the statistical properties of the actual yuan series; then we compute the return from a given trading rule for each of these 10,000 artificial series; and finally we construct a 95% percentile interval with these 10,000 returns to determine if it contains the return computed from the actual yuan series.

The rest of the paper will proceed as follows: Section 2 gives a brief description of the bootstrap method; Section 3 describes the two trading rules (moving average and trading range break) used; Section 4 presents our empirical results; and Section 5 concludes this study.

2. The Bootstrap Method

Simply put, the bootstrap⁴ for this study is to fit each random walk to the actual yuan series to obtain estimated parameters and residuals. The residuals are redrawn with replacement to form a scrambled residual series which is then used with the estimated parameters to generate artificial yuan series for a given random walk. Each of the three random walks is written as $\log(P_t) = \log(P_{t-1}) + \varepsilon_t$. For the IID random walk, ε_t 's are independent and normally distributed⁵; for the ARCH(3) random walk⁶, $\varepsilon_t = \sigma_t z_t$, where $\sigma_t^2 = \alpha_0 + \alpha_1 u_{t-1}^2 + \alpha_2 u_{t-2}^2 + \alpha_3 u_{t-3}^2$ and $z_t \sim N(0,1)$; and for the GARCH(1,1) random walk, $\varepsilon_t = \sigma_t z_t$, where $\sigma_t^2 = \alpha_0 + \alpha_1 u_{t-1}^2 + \beta \sigma_{t-1}^2$ and $z_t \sim N(0,1)$.

As an illustration, we use the GARCH(1,1) random walk to demonstrate how to implement the bootstrap by taking the following steps: (i) Based on the actual yuan series, we estimate the three parameters (i.e., α_0 , α_1 , and β) using the maximum likelihood method; (ii) Using these three estimates, we obtain a series of residuals. That is, $\{e_1, e_2, \dots, e_{3511}\}$; (iii) For each j (where $j = 1, 2, \dots, 3511$), we randomly pick a residual from the residual series to generate an artificial yuan series with 3511 observations⁷; (iv) We compute the returns from each of the two trading rules for buy and for sell using this artificial yuan series; (v) Repeating steps (i) – (iv), we generate 10,000 returns (denoted by $R_1^b, R_2^b, \dots, R_{10000}^b$) for buy and 10,000 returns (denoted by $R_1^s, R_2^s, \dots, R_{10000}^s$) for sell computed from the 10,000 artificial yuan series.

Following Efron and Tibshirani (1993), we construct a 95% percentile interval such that the 2.5th percentile and 97.5th percentile of the 10,000 returns (for buy and for sell) computed from 10,000 artificial yuan series are, respectively, the lower and upper limits for the interval. Specifically, arranging the 10,000 returns in ascending order such that $R_{(1)}^b \leq R_{(2)}^b \leq \dots \leq R_{(9999)}^b \leq R_{(10000)}^b$ for buy and $R_{(1)}^s \leq R_{(2)}^s \leq \dots \leq R_{(9999)}^s \leq R_{(10000)}^s$ for sell, we have that the 95% percentile interval⁸ is $[R_{(251)}^b, R_{(9750)}^b]$ for buy and $[R_{(251)}^s, R_{(9750)}^s]$ for sell. That said, we determine if the returns (for buy and for sell) from each of the two trading rules computed from the actual yuan series lie within their respective 95% percentile intervals.

³ We have tested for the ARCH(3) and GARCH(1,1) effects in the two random walks. The two random walks are found adequate for modeling the conditional heteroscedasticity of the data at the 5% significance level.

⁴ For space reason, we are unable to provide a detailed description of the bootstrap. For details, see Efron (1979) and Efron and Tibshirani (1993).

⁵ We have also employed the IID random walk with error terms that are independent and Student-t distributed. The results are similar to our present results with error terms that are independent and normally distributed.

⁶ We have tried out ARCH(1) and ARCH(2) random walks. The results from these two random walks are not better than those from ARCH(3) random walk.

⁷ There are 3511 observations for the 14 years of daily yuan exchange rates from 22 July 2005 to 19 July 2019.

⁸ That is, $R_{(251)}^b$ and $R_{(9750)}^b$ are the 2.5th and 97.5th percentiles of the 10,000 returns for buy; $R_{(251)}^s$ and $R_{(9750)}^s$ are the 2.5th and 97.5th percentiles of the 10,000 returns for sell.

Our bootstrap implementation can better be understood from a different perspective. Suppose the yuan literally follows (say) the above GARCH(1,1) random walk. Then the actual yuan data series is simply a sample drawn from this GARCH(1,1) random walk. Hence, there is a high likelihood that the return computed from this actual yuan data series lies within the 95% percentile interval constructed using the 10,000 returns computed from this GARCH(1,1) random walk yuan series.

3. The Two Trading Rules

The two trading rules⁹ used in this study are moving average (MA) and trading range break (TRB). The n -day moving average (MA) on day t is

$$M_{t,n} = \frac{1}{n} \sum_{k=t-n+1}^t P_k = \frac{1}{n} [P_{t-n+1} + P_{t-n+2} + \dots + P_{t-1} + P_t] \quad (1)$$

where P_k is the yuan value on day k .

According to the MA rules, buy and sell signals are emitted by a short MA and a long MA. Buy (sell) signals are emitted when the short MA rises above (falls below) the long MA by a pre-specified percentage band. When a signal is emitted, the MA rules require that the position be maintained until the short MA penetrates the long MA again. A popular MA rule is (1, 200), where the short MA is one day and the long MA is 200 days. Since some individual investors trade on short-term basis, such MA rules as (1, 20) and (1, 50) are often in use. To implement, we use the following six MA rules: (1, 20), (1, 50), (1, 100), (1, 150), (1, 200), and (1, 250).

According to the TRB rules, a buy signal is emitted when the current exchange rate rises above the local maximum (the maximum rate over the past certain number of days) and a sell signal is emitted when the current exchange rate falls below the local minimum (the minimum rate over the past certain number of days). In notation, an m -day local maximum on day t and an m -day local minimum on day t are defined respectively as

$$L \max[m, t] = \max[P_{t-m}, P_{t-m+1}, \dots, P_{t-1}] \quad (2)$$

$$L \min[m, t] = \min[P_{t-m}, P_{t-m+1}, \dots, P_{t-1}] \quad (3)$$

where P_k ($k = t-m, t-m+1, \dots, t-1$) is the yuan value on day k . That is, a buy signal is emitted if $P_t > L \max[m, t]$ and a sell signal is emitted if $P_t < L \min[m, t]$. To implement, we use local maximums and minimums over the proceeding 20, 50, 100, 150, 200, and 250 days.

The data used for this study are 14 years of daily yuan exchange rates from 22 July 2005 to 19 July 2019 (a total of 3511 observations), retrieved from the DataStream database. We compute daily return R_t from day $t-1$ to day t as the log difference of the yuan from day $t-1$ to day t . That is,

$$R_t = \log(P_t) - \log(P_{t-1}) \quad (4)$$

⁹ See Murphy (1999) and Edwards et al. (2007) for details on these two trading rules.

Table 1. Parameter estimates for ARCH(3) and GARCH(1,1) random walks

Process	Parameter	Estimates
ARCH(3) random walk	α_0	0.000043 (46.293422)
	α_1	0.170519 (21.792180)
	α_2	0.062322 (6.774321)
	α_3	0.072446 (5.923094)
GARCH(1,1) random walk	α_0	0.000011 (23.634343)
	α_1	0.069476 (23.598324)
	β	0.652238 (142.423076)

Notes: Estimations are done by maximum likelihood. Numbers in parentheses are standard t -ratios.

Table 2. Daily returns computed from actual yuan series

Rule	<u>Moving average</u>		<u>Trading range break</u>	
	Buy	Sell	Buy	Sell
(1, 20)	0.000143	-0.000038	0.000138	-0.000036
(1, 50)	0.000212	0.000047	0.000154	-0.000056
(1, 100)	0.000198	0.000021	0.000212	-0.000063
(1, 150)	0.000131	-0.000055	0.000091	-0.000071
(1, 200)	0.000065	-0.000102	0.000050	-0.000044
(1, 250)	0.000159	0.000027	-0.000011	-0.000036

4. Empirical Results

Table 1 shows the parameter estimates for the ARCH(3) and GARCH(1,1) random walks. Table 2 presents daily returns from the two trading rules based on actual yuan series. In Tables 3-5, "Median" is the median value of the 10,000 daily returns computed from 10,000 artificial yuan series, " $R_{(25)}$ " and " $R_{(97.5)}$ " denote the 2.5th and 97.5th percentiles of the 10,000 daily returns for buy and for sell. For instance, under the (1, 20) MA rule for buy in Table 3, Median = 0.000051, $R_{(25)} = -0.000016$, and $R_{(97.5)} = 0.000141$. That is, $[-0.000016, 0.000141]$ is a 95% percentile interval. For visual clarity, those 95% intervals are shaded if the daily returns in Table 2 computed from the actual yuan series lie within their respective 95% intervals.

Table 3. Daily returns computed from IID random walk yuan series

Rule	<u>Moving average</u>		<u>Trading range break</u>	
	Buy	Sell	Buy	Sell
(1, 20) Median	0.000051	-0.000060	0.000167	0.000005
$R_{(251)}$	-0.000016	-0.000113	0.000120	-0.000061
$R_{(9750)}$	0.000141	-0.000011	0.000224	0.000073
(1, 50) Median	0.000149	0.000031	0.000051	0.000102
$R_{(251)}$	0.000083	-0.000027	-0.000009	0.000039
$R_{(9750)}$	0.000230	0.000087	0.000117	0.000163
(1, 100) Median	0.000125	0.000018	0.000015	-0.000012
$R_{(251)}$	0.000071	-0.000037	-0.000048	-0.000068
$R_{(9750)}$	0.000187	0.000071	0.000076	0.000063
(1, 150) Median	0.000104	-0.000009	-0.000177	-0.000112
$R_{(251)}$	0.000049	-0.000058	-0.000231	-0.000182
$R_{(9750)}$	0.000167	0.000053	-0.000120	-0.000051
(1, 200) Median	0.000022	-0.000109	-0.000244	0.000034
$R_{(251)}$	-0.000039	-0.000172	-0.000301	-0.000024
$R_{(9750)}$	0.000092	-0.000051	-0.000178	0.000097
(1, 250) Median	0.000017	-0.000148	-0.000210	-0.000158
$R_{(251)}$	-0.000047	-0.000216	-0.000262	-0.000219
$R_{(9750)}$	0.000082	-0.000074	-0.000136	-0.000098

Notes: Shaded $R_{(251)}$ and $R_{(9750)}$ are the 95% percentile intervals containing the daily returns computed from the actual yuan series.

Table 3 shows the daily returns computed from the artificial IID random walk yuan series. Two MA rules for buy and four MA rules for sell result in that the daily returns from the actual yuan series lie within their respective 95% intervals. For instance, the (1, 200) MA rule for buy results in that the daily return of 0.000065 from the actual yuan series lies within $[-0.000039, 0.000092]$. On the other hand, only one TRB rule for buy and three TRB rules for sell result in that the daily returns from the actual yuan series lie within their respective 95% intervals.

Table 4. Daily returns computed from ARCH(3) random walk yuan series

Rule	<u>Moving average</u>		<u>Trading range break</u>	
	Buy	Sell	Buy	Sell
(1, 20) Median	0.000018	-0.000052	0.000092	0.000051
$R_{(251)}$	-0.000039	-0.000116	0.000037	-0.000009
$R_{(9750)}$	0.000081	0.000009	0.000161	0.000116
(1, 50) Median	0.000090	0.000011	0.000287	-0.000269
$R_{(251)}$	0.000025	-0.000050	0.000219	-0.000212

	$R_{(9750)}$	0.000164	0.000078	0.000352	-0.000338
(1, 100)	Median	0.000084	0.000019	0.000357	-0.000032
	$R_{(251)}$	0.000022	-0.000035	0.000281	-0.000097
	$R_{(9750)}$	0.000159	0.000091	0.000428	0.000040
(1, 150)	Median	0.000096	0.000020	0.000246	0.000136
	$R_{(251)}$	0.000030	-0.000049	0.000183	0.000081
	$R_{(9750)}$	0.000168	0.000091	0.000320	0.000198
(1, 200)	Median	0.000052	-0.000032	0.000317	0.000157
	$R_{(251)}$	-0.000011	-0.000094	0.000246	0.000092
	$R_{(9750)}$	0.000127	0.000039	0.000395	0.000226
(1, 250)	Median	0.000102	0.000030	0.000219	0.000048
	$R_{(251)}$	0.000039	-0.000032	0.000153	-0.000010
	$R_{(9750)}$	0.000173	0.000095	0.000291	0.000112

Notes: Shaded $R_{(251)}$ and $R_{(9750)}$ are the 95% percentile intervals containing the daily returns computed from the actual yuan series.

Table 4 shows the daily returns computed from the ARCH(3) random walk yuan series. The results in Table 4 are roughly similar to those in Table 3. Three MA rules for buy and four MA rules for sell result in that the daily returns from the actual yuan series lie within their respective 95% intervals. On the other hand, only one TRB rule for buy and one TRB rule for sell result in that the daily returns from the actual yuan series lie within their respective 95% intervals.

Table 5. Daily returns computed from GARCH(1,1) random walk yuan series

Rule	Moving average		Trading range break		
	Buy	Sell	Buy	Sell	
(1, 20)	Median	0.000189	-0.000044	0.000181	-0.000202
	$R_{(251)}$	0.000108	-0.000115	0.000116	-0.000269
	$R_{(9750)}$	0.000275	0.000045	0.000260	-0.000131
(1, 50)	Median	0.000110	-0.000011	0.000071	-0.000011
	$R_{(251)}$	0.000035	-0.000079	0.000005	-0.000077
	$R_{(9750)}$	0.000188	0.000055	0.000146	0.000079
(1, 100)	Median	0.000131	-0.000063	0.000179	-0.000114
	$R_{(251)}$	0.000049	-0.000139	0.000106	-0.000181
	$R_{(9750)}$	0.000220	0.000021	0.000252	-0.000051
(1, 150)	Median	0.000127	-0.000121	0.000063	-0.000041
	$R_{(251)}$	0.000055	-0.000188	-0.000010	-0.000110
	$R_{(9750)}$	0.000206	-0.000049	0.000141	0.000037
(1, 200)	Median	0.000115	-0.000125	0.000057	-0.000134
	$R_{(251)}$	0.000043	-0.000192	-0.000005	-0.000188

	$R_{(9750)}$	0.000193	-0.000044	0.000126	-0.000071
(1, 250)	Median	0.000093	-0.000060	0.000041	-0.000165
	$R_{(251)}$	0.000021	-0.000129	-0.000016	-0.000231
	$R_{(9750)}$	0.000173	0.000014	0.000109	-0.000094

Notes: Shaded $R_{(251)}$ and $R_{(9750)}$ are the 95% percentile intervals containing the daily returns computed from the actual yuan series.

Table 5 shows the daily returns computed from the artificial GARCH(1,1) random walk yuan series. Five MA rules for buy and for sell result in that the daily returns from the actual yuan series lie within their respective 95% intervals. That is, 10 out of 12 percentile intervals contain the daily returns computed from the actual yuan series. In addition, five TRB rules for buy and three TRB rules for sell result in that the daily returns from the actual yuan series lie within their respective 95% intervals. That is, eight out of 12 percentile intervals contain the daily returns computed from the actual yuan series. In sum, the GARCH(1,1) random walk produces many more percentile intervals than the other two random walks.

5. Conclusion

For time series data, we are constrained by the fact that we have only one dataset of their history. Hence, it is not uncommon that previous empirical findings based on different time series data are, to a certain degree, divided over issues related to exchange rate. This study employs the bootstrap method to explore which of the three random walks best characterizes the evolution of the yuan. Using 14 years of daily yuan exchange rates from 22 July 2005 to 19 July 2019, our results show that, of the three random walks, the GARCH(1,1) random walk generates the most 95% percentile intervals which contain the returns computed from the actual yuan series. Given our results, we claim that the GARCH(1,1) random walk best portrays the yuan since China's exchange rate system reform on 21 July 2005.

References

- Baillie, R. T. and Bollerslev, T. (1989) The message in daily exchange rates: A conditional-variance tale, *Journal of Business & Economic Statistics*, **7**, 297-305.
- Diebold, F. X. and Nerlove, M. (1989) The dynamics of exchange rate volatility: A multivariate latent factor ARCH model, *Journal of Applied Econometrics*, **4**, 1-21.
- Edwards, R. D., Magee, J. and Bassetti, W.H.C. (2007) *Technical Analysis of Stock Trends*, 9th edition, AMACOM, New York.
- Efron, B. (1979) Bootstrap Methods: Another Look at the Jackknife, *Annals of Statistics*, **7**, **1**, 1-26.
- Efron, B. and Tibshirani, R. (1993) *An Introduction to the Bootstrap*, Chapman and Hall, New York.
- Funke, M. and Rahn, J. (2005) Just how undervalued is the Chinese Renminbi? *World Economy*, **28**(4), 465-489.
- Goh, M. H. and Kim, Y. (2006) Is the Chinese Renminbi undervalued? *Contemporary Economic Policy*, **24**(1), 116-126.
- Hsieh, D. A. (1988) The statistical properties of daily foreign exchange rates: 1974-1983, *Journal of International Economics*, **24**, 129-145.
- Meese, R. A. and Rogoff, K. (1983) Empirical exchange rate models of the seventies: Do they fit out of sample? *Journal of International Economics*, **14**, 3-24.
- Milhoj, A. (1987) A conditional variance model for daily deviations of an exchange rate, *Journal of Business and Economic Statistics*, **5**, 99-103.
- Murphy, J. J. (1999) *Technical Analysis of the Financial Markets*, New York Institute of Finance, New York.
- Mussa, M. (1979) Empirical regularities in the behavior of exchange rates and theories of the foreign exchange market, in K. Brunner and A. H. Meltzer, eds., *Carnegie-Rochester series on public policy*, **11**, North-Holland, Amsterdam.
- Ogawa, E. and Sakane, M. (2006) Chinese yuan after Chinese exchange rate system reform, *China & World Economy*, **14**(6), 39-57.
- Siegel, J. J. (2002) *Stocks for the Long Run*, 3rd edition, McGraw-Hill, New York.

Effect of Fiscal Policy on the Real Sector of the Nigerian Economy: A Focus on Government Capital Expenditure and Agricultural Sector Contribution to GDP

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Abstract

Government expenditures play key roles in the operation of all economies. It refers to expenses incurred by the government for the maintenance of itself and provision of public goods, services, and works needed to foster or promote economic growth and improve the welfare of people in the society. This study examined the effect of fiscal policy on real sector growth in Nigeria. Focusing on government capital expenditure and its effect on the growth of the agricultural sector in Nigeria. The study adopted the ex-post facto research design and regression analysis as methodology using ARDL. Descriptive statistics and graphs were also used to complement the regression result. The result from the study found that there is a significant and positive effect of government capital expenditure on the growth of the agricultural sector in Nigeria. The implication of the study is that fiscal policy through government capital expenditure will increase the agricultural sector growth and thereby increases its contributions to the growth of the economy. This means that when there is enough revenue, the government only spends more money on infrastructural development that can help the agriculture sectors to grow by having access to good road and electricity. The result is an indication that government capital spending in Nigeria has been able to spur the economic growth of Nigeria through agricultural sector output. Based on the findings, the study makes the following recommendations; Government of Nigeria should adhere strictly to the implementation of government spending so as to increase the level of real sector development in Nigeria which will have the capacity to stimulate economic growth and create employment.

Keywords: Government Capital Expenditure, Agriculture, Fiscal Policy, Financing, Growth

1. INTRODUCTION

The performance of any economy is determined to a large extent by the level of activities in the real sector of the economy, but the critical role of the fiscal policy in sustaining a vibrant and stable economy through real sector cannot be overlooked. The achievement of macroeconomic goals, namely full employment, the stability of price level, high and sustainable economic growth and external balance through real sector economy, from the time past, has been a policy priority of every government. Almost all economies of the world, irrespective of the state of the

economy (developing or developed), the government intervenes in undertaking fundamental roles of allocation, stabilization, distribution, and regulation especially when the market proves inefficient. The government particularly pursues key macroeconomic objectives such as economic growth and development, full employment, price stability, and poverty reduction through the application of several policies to rejuvenate the real sector of the economy.

Real sector is a term that has been in focus for several years, mainly because of the economic downturn experienced globally in the recent past. Real sector of the economy is a key variable that measures the worth or strength and competitiveness of a country with other countries, and it plays a very important role in stabilizing the country's economy through its contribution to GDP (Akinmulegun, 2014). In Nigeria, issues of real sector development are intricate and reflect a mixture of both domestic and international characteristics. On the domestic front, the real sector comprises of agricultural, manufacturing, building and construction, wholesale and retail and the services sectors, while activities in the international oil market are intertwined with global economic developments. Consequently, the sectoral policy must adequately address issues related to enhancing the capacity of the private sector to drive real sector activities and hence, achieve higher levels of growth (Ubesie, 2016).

Increasing revenue level, especially the oil revenue, is the characteristic phenomenon of the Nigerian budget every year so as to ensure the growth and development of the real sector. The effect of fiscal policy implementation on the real sector of the Nigerian economy has not been as positive as has been expected in recent time. Both fiscal policy implementation and real sector growth are considered to be very significant for economic growth in any nation (Oyeleke and Ajilore, 2014), but studies about their contribution has research gaps, as little attention has been given to the contributions of fiscal policy implementation on real sector of the economy, particularly in Nigeria using agricultural sector and manufacturing sector as real sector.

Despite the emphasis placed on fiscal policy implementation in the management of the economy, the Nigerian economy is yet to come on the path of sound growth and development through real sector growth. This situation has largely been circulated to the entire sectors of the economy (Oyeleke and Ajilore, 2014).

Further, a lot of empirical studies (Arikpo, Ogar, and Ojong (2017); Ubesie (2016); Osinowo (2015); Raymond and Adigwe (2015) and Peter (2015)) have found that real sector of the economy is measured with one variable as well as fiscal policy. In this study, we will decompose the real sector of the economy into two variables (Agricultural sector contribution to GDP and manufacturing sector contribution to GDP). This is necessary because the real sector is referred to as the absence of excessive fluctuations in the macroeconomy such as agricultural sector which are the major measure of real sector growth. Based on this premise, the study is thus designed to investigate the effect of fiscal policy on the real sector of the Nigerian economy. Focusing on Agricultural Sector in Nigeria.

2. REVIEW OF RELATED LITERATURE

Concept of Fiscal Policy

Fiscal policy is a term conventionally associated with the use of taxation and public expenditure to influence the level of economic activities in any given country, developed or developing. The implementation of fiscal policy is essentially routed through the government's budget. The budget is, therefore, more than a plan for administering the government sector. The budget reflects and shapes a country's economic life. In fact, the most important aspect of a public budget is its use as a tool in the management of a nation's economy, designing and implementing fiscal policy, government plans for the budget deficit, budget surplus or balanced budget. The budget deficit is a type of budget plan in which government expenditure outweighs its revenue while the budget surplus is a budget plan where government revenue is proposed to be greater than government expenditure. A balanced budget, however, arises when government expenditure equals government revenue (Omitogun and Ayinla, 2007; Heakel, 2015).

Peter and Simeon (2011) define fiscal policy as the process of government management of the economy through the manipulation of its income and expenditure and to achieve certain desired macroeconomic objectives. Central

Bank of Nigeria (CBN) (2011) defined fiscal policy as the use of government expenditure and revenue collection through tax and amount of government spending to influence the economy. Samuelson and Nordhaus (2002), defined fiscal policy as a government's program with respect to the purchase of goods and services and spending on the transfer of payments, as well as the amount and type of taxes. In finance, fiscal policy is the use of government revenue collection (taxation) and expenditure (spending) to influence the economy. The two main instruments of fiscal policy are government taxation and expenditure. Changes in the level and composition of taxation and government spending can affect aggregate demand and the level of economic activity; the pattern of resource allocation; and the distribution of income (David, 2005; Mark and Asmaa, 2009; Chirag, 2010). This implies that Fiscal policy refers to the use of the government budget to influence economic activities.

Components of Fiscal Policy in Nigeria

Government Capital Expenditure (GCE)

Government expenditures play key roles in the operation of all economies. It refers to expenses incurred by the government for the maintenance of itself and provision of public goods, services, and works needed to foster or promote economic growth and improve the welfare of people in the society. Government (public) expenditures are generally categorized into expenditures on administration, defense, internal securities, health, education, foreign affairs, etc. and has both capital and recurrent components. Capital expenditure refers to the amount spent in the acquisition of fixed (productive) assets (whose useful life extends beyond the accounting or fiscal year), as well as expenditure incurred in the upgrade/improvement of existing fixed assets such as lands, buildings, roads, machines and equipment, etc., including intangible assets. Expenditure in research also falls within this component of government expenditure. Capital expenditure is usually seen as expenditure creating future benefits, as there could be some lags between when it is incurred and when it takes effect on the economy (Oziengbe, 2013). Aggregate government capital expenditure at current prices will be used. It is expected that the increase in capital expenditure, will increase real sector growth because people's welfare will improve through government provision of social and infrastructural facilities. This will directly reduce unemployment, thus leading to a positive impact on the real sector.

Components of Real Sector

Agricultural Sector Growth

Agriculture is the mainstay of the Nigerian economy, directly contributing 60 percent of the GDP annually in the 1960s. The sector accounts for 70 percent of total Nigerian exports and provides more than 70 percent of informal employment in rural areas. Therefore, the agricultural sector is not only the driver of the Nigerian economy but also the means of livelihood for the majority of Nigerian people (Lawal, 1997). Agricultural sector development suffered total neglect as a result of the oil boom in the 1970s, and this neglect continues to the extent that Nigerian agricultural sector cannot afford to produce what her citizenry will consume not to talk about exporting of the produce. The present-day problem of the Nigerian economy is as a result of total neglect of the agricultural sector and increased dependence on a mono-cultural economy based on oil. The contribution of agriculture to Nigeria's GDP now lies within 5% (Olagbaju and Falola, 1996). In contrast to the economy as a whole, for the full year 2016, real GDP in agriculture grew by 4.11%, and this growth rate was higher than that recorded in 2015 of 3.72%. The contribution of the Agricultural sector as a real sector of the economy to overall GDP in real terms was 25.49% in the quarter under review, higher than its share of 24.18% in the corresponding year (NBS, 2017).

Noko (2017) stated that agriculture is estimated to be the largest contributor to the non-oil foreign exchange. According to him, a strong agricultural sector is essential to economic development both in its own rights and to stimulate and support the growth of industries. Economy growth has gone hand in hand with agricultural progress; stagflation in agriculture is the principal explanation for poor economic performance while rising agricultural activities has been the most concomitant of successful industrialization (Ukeje 1999). The labor-intensive character of the sector reduces its contribution to the GDP; Noko lamented, and still maintained that agricultural exports are a major earner of foreign exchange in Nigeria. Agriculture can be further broken into crop production, livestock, forestry, and fishing.

Empirical Review

There are several studies that have articulated theoretically and empirically on the impact of fiscal policy on real sector growth in the Nigerian economy. Many studies have investigated fiscal policy behavior in developing and developed countries. Results about the effect of fiscal policy on real sector growth differ by country, analytical methods employed and categorization of fiscal policy measures.

Salman and Tahir (2018) examined the impact of real sector shocks on Islamic banking in Pakistan using quarterly data for the period of 2006 to 2016 and applied vector error correction model (VECM). Their result indicates that a shock in large scale manufacturing index has an increasing effect on financing and investments while a shock in the exchange rate has a declining effect. The study also revealed that a shock in large scale manufacturing index has an amplifying effect on non-performing loan, but a shock in the exchange rate does not affect non-performing loan by much.

Monca, Sorin, and Andrei (2018) investigated whether the increase in fiscal pressure leads to a higher level of corruption and whether the results differ from developed to developing countries looking at over 185 countries, during the period 2005–2014. The technique employed was short panel data with five statistical models such as the pooled OLS, pooled FGLS, within the model, between model and random-effects GLS model. They found out that, with high-quality institutions, low fiscal pressure leads to a lower level of corruption, which is in line with expectations.

Victor and Roman (2017) analysed the effects of fiscal policies upon agriculture and industry in Ukraine, with the SVAR model using quarterly data for the 2001–2016 period. The results indicate a positive effect of the government spending on both agricultural production and industrial output, while an increase in the government revenue is of the same expansionary impact for the latter only. Among other results, there was a weak negative short-lived spillover from agriculture to industry, with no causality running on the reverse. As agricultural production in Ukraine is associated with a higher level of government spending in the short run, a direction of causality seems to be just the opposite for industrial output. Both agriculture and industry bring about higher budget revenues in the short run, but for the latter, this effect is lagged and more persistent. Controlling for fiscal policy effects, the nominal (real) exchange rate depreciation seems to be expansionary for industrial output. For agriculture, a nominal exchange rate depreciation is restrictionary in the short run, with an expansionary effect in the long run (however, this result is not supported in specification with the real exchange rate).

Eze (2017) investigated the effect of the interest rate liberalization policy of the government (introduced in 1986 under the structural adjustment programme) on the performance of the industrial sector in Nigeria. Vector error correction model (VECM) were used. The study shows that exchange rate volatility has an insignificant positive impact on industrial output performance. It also shows evidence of the significant positive impact of lending rate and financial depth on industrial output growth. However, evidence from the study shows that inflation has a significant negative effect on the output of the sector. To enhance the performance of the sector in Nigeria, the government should seek to stabilize exchange rate movements through proper diversification of sources of foreign exchange inflow as well as reduce its outflow in order to support her import-dependent industrial sector while simultaneously pursuing the development of an adequate and efficient infrastructure base for the economy.

Harris, Dimitris, Dimitris and Evangelia (2017) used macroeconomic models that omit the shadow economy systematically mis-forecast and mis-measure to study the effect of fiscal –in particular tax– policy on economic activity and tax revenue. It was discovered that the size of fiscal adjustment and the drop in economic activity could have been considerably milder had the informal sector been curtailed (it instead increased by about 50%).

Sandra, Alar, Eduardo, and Giselle (2017) applied a comprehensive tax-benefit incidence analysis to estimate the distributional effects of fiscal policy in Chile in 2013. It was found out that there is an overall positive effect of fiscal interventions on poverty and inequality.

Ivo (2017) examined different arguments for fiscal contraction and fiscal expansion, considering the level of indebtedness of a country and the economic circumstances. It finds that high debt-to-GDP ratios are a burden on

the economy that represents a progressive cost to government deficit, which it captures through introducing the concept of a debt multiplier. It also finds that recessions strongly increase the benefits of fiscal spending, both in the short-run and in the long-run through hysteresis-effects.

Arikpo, Ogar, and Ojong (2017) examined the impact of fiscal policy on the performance of the manufacturing sector in Nigeria. The study was specifically meant to assess the extent to which government revenue and expenditure impact on the manufacturing output in Nigeria. To achieve these objectives, relevant literature was reviewed. An *ex-post facto* research design was adopted for the study. Time-series data were collected from the CBN statistical Bulletin using the desk survey method from 1982 to 2014. The data were analyzed using the ordinary least square multiple regression statistical technique. Result revealed that increases in government revenue reduce manufacturing sector output in Nigeria. Finally, the Government should increase its expenditure on infrastructural development and community services as this will have a multiplier effect on manufacturing activities and enhance economic growth in Nigeria.

Jelilov (2016) examined the impact of interest rate on economic growth in Nigeria from 1990 to 2013. The result found that the interest rate has a slight impact on growth; however, the growth can be improved by lowering the interest rate, which will increase the investment. As a result of the study, it was found out that Nigerian authorities should set interest rate policies that will boost the economic growth. Therefore, the proper measure should be taken in order to have a more rapid economic growth.

Theoretical Framework

Based on the nature of this study, the theoretical framework adopted were Savers-Spenders Theory of Fiscal Policy.

The Savers-Spenders Theory of Fiscal Policy

This theory was propounded by Mankiw (2002) as a result of inconsistency of Barro-Ramsey (1994) theory of infinitely-lived families and Diamond Samuelson (1965) theory of overlapping generation, respectively. Mankiw (2002) theory of savers – spenders has been used by various scholars like Matsen Seveen and Torvik (2008), Eze and Ogiji (2013). The savers-spenders theory of (2002) captures an economy of being made up of two different groups; the savers and spenders respectively where savers are full rational intertemporal maximizes, whereas spenders consume their entire after-tax labour income in every period.

3.0 RESEARCH METHODOLOGY

This study made use of *Ex-post facto* research design. Onwumere (2009) states that *ex-post facto* design is the type of research involving events that have already occurred. The data already exists as no attempt would be made to control or manipulate the relevant independent variable. This study covered the effect of government capital expenditure on agricultural sector growth in Nigeria for the period under review-1980-2017. The reason for this is because; it was a period when there was an increase in government spending with low returns from the agricultural sector in Nigeria. The period has also been considered adequate enough to generate good result from regression analysis which is the method that is relevant in testing the hypotheses formulated for the study. Based on the above, the model for this study were, therefore estimated as follows:

$$AGDP = f(GCE, INFL, EXR, INTR) \dots (1)$$

$$\text{i.e. } AGDP = \beta_0 + \beta_1 GCE + \beta_2 INFL + \beta_3 EXR + \beta_4 INTR + u_t \dots (2)$$

WHERE;

A/GDP = Agriculture Sector Contribution to AGDP/GDP

GOR = Government Capital Expenditure

INFL = Inflation Rate

EXR = Exchange Rate

U = Stochastic error term

4.0 Result and Discussion

Descriptive Test

The descriptive statistics of data series gives information about simple statistics such as mean, median, minimum value, maximum value and the distribution of the sample measured by skewness, kurtosis and the Jarque-Bera statistic and it was used in this study to. The descriptive result is presented in table 1.

Table 1: Descriptive Statistics

Parameters	AGDP	GCE	INFL	INT	EXR
Mean	23.38	36.67	20.09	13.54	82.30
Median	22.88	35.41	12.55	13.25	57.37
Maximum	37.52	63.44	76.76	27.00	35.60
Minimum	14.43	9.41	0.22	6.13	0.55
Std. Dev.	5.07	15.22	18.24	5.19	86.30
Skewness	0.53	0.16	1.64	1.04	1.12
Kurtosis	3.29	2.07	4.72	4.02	4.23
Jarque-Bera	1.93	1.53	21.71	8.49	10.31
Probability	0.38	0.47	0.00	0.01	0.01
Sum	888.43	1393.28	763.32	51.62	31.23
Sum Sq. Dev.	950.14	8571.31	123.52	97.72	27.20
Observations	38	38	38	38	38

Source: Author's Computation 2019

Table 1 above reports the overall mean and standard deviation for all the variables involved in this standard regression analysis. The mean of the dependent variables chosen which is agricultural sector contribution to the growth of Nigerian economy (AGDP) is 23.38 which is not all that very low compared to the mean of other independent variables which are the variables of government oil revenue. With the mean value of GCE standing at 36.67 while those of INF, INTR, and EXR are 20.09, 13.54 and 82.30 respectively, we can conclude that EXR has the highest mean value, followed by AGDP, INFL, then, INTR. The standard deviation of each variable (AGDP, GCE, EXR, INTR, and INFL) with 5.07, 8.95, 18.24, 5.19 and 86.30 respectively appears to follow the same hierarchical trend as those of the mean values.

The above result indicates that all the variables displayed a high level of consistency as their mean and median values are perpetually within the maximum and minimum values of these series. Besides, the standard deviation revealed that actual data in the series are not really different from the mean value. The skewness and kurtosis statistics provide useful information about the symmetry of the probability distribution of various data series as well as the thickness of the tails of these distributions respectively. These two statistics are particularly of great importance since they are of use in the computation of Jarque-Bera statistic, which is used in testing for the normality or asymptotic property of a particular series.

4.2 Graphical Trend

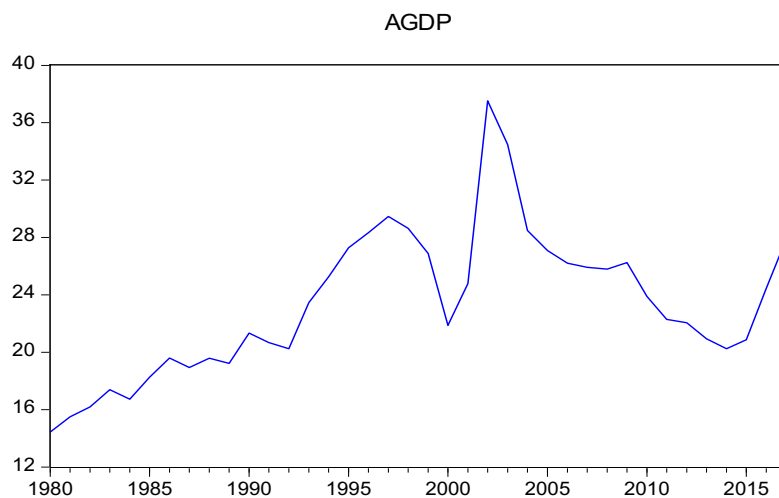


Figure 1. Trend analysis of AGDP (1980-2017).

Source: Author's computation 2019.

Figure 1 shows the graphical trend of agricultural sector contribution to Gross Domestic Product (AGDP) in Nigeria for the period 1980-2017. From 1980 to 1983 there was a steady increase, but in 1984, there was a slight decrease. From 1985, it picked with 18.26% and continued with minimal fluctuation increase until 2002 where reached the highest peak of 37.52%. The graphical analysis shows that agricultural sector contribution to Gross Domestic Product (AGDP) in Nigeria had the highest contribution of 37.52% in 2002 followed by 34.48% in 2003, and the lowest in 1980 with 14.43 followed by 1981 with 15.5%. From 2008 to 2017, it recorded an increase with minimal fluctuation. Since agricultural sector contribution to Gross Domestic Product (AGDP) in Nigeria has a greater effect on the economy and indicate the level of real sector contribution on economic growth, we can say that agricultural sector contribution to gross domestic product (AGDP) in Nigeria will over the years under study have minimal fluctuation.

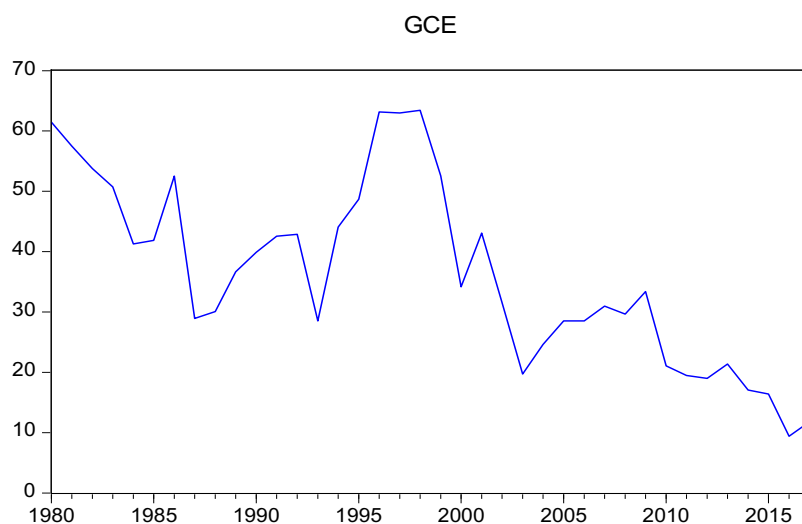


Figure 2. Trend analysis of GCE (1980-2017).

Source: Author's computation 2019.

From Figure 2, the trend of government capital expenditure (GCE) is clearly shown. From the year 1980 up till 1984, the level of government capital expenditure implementation has been on decrease from 61.45% to 41.28% in 1984. From 1985, it started ascending with 41.87% to 52.53% in 1986. It dropped again to 28.93% in 1987, but in 1988, it increased again to 30.5%. This increase continued till 1991 with 42.59%. By 1993, it decreased to 28.50% and ascension to 1996 with 63.14%. From 1997 to 2017, there has a downward inconsistency trend on the

level of government capital expenditure implementation. This may be attributed to the fact that those periods of inconsistency were marked by various unstable macroeconomic policies and political instabilities which discouraged the inflow of foreign direct investments in Nigeria because of lack of proper government capital expenditure implementation. This is a situation which could be explained from that the level of government capital expenditure implementation was not enough for the growth of the Nigerian real sector during the period.

4.4 Akaike Information Criteria Test

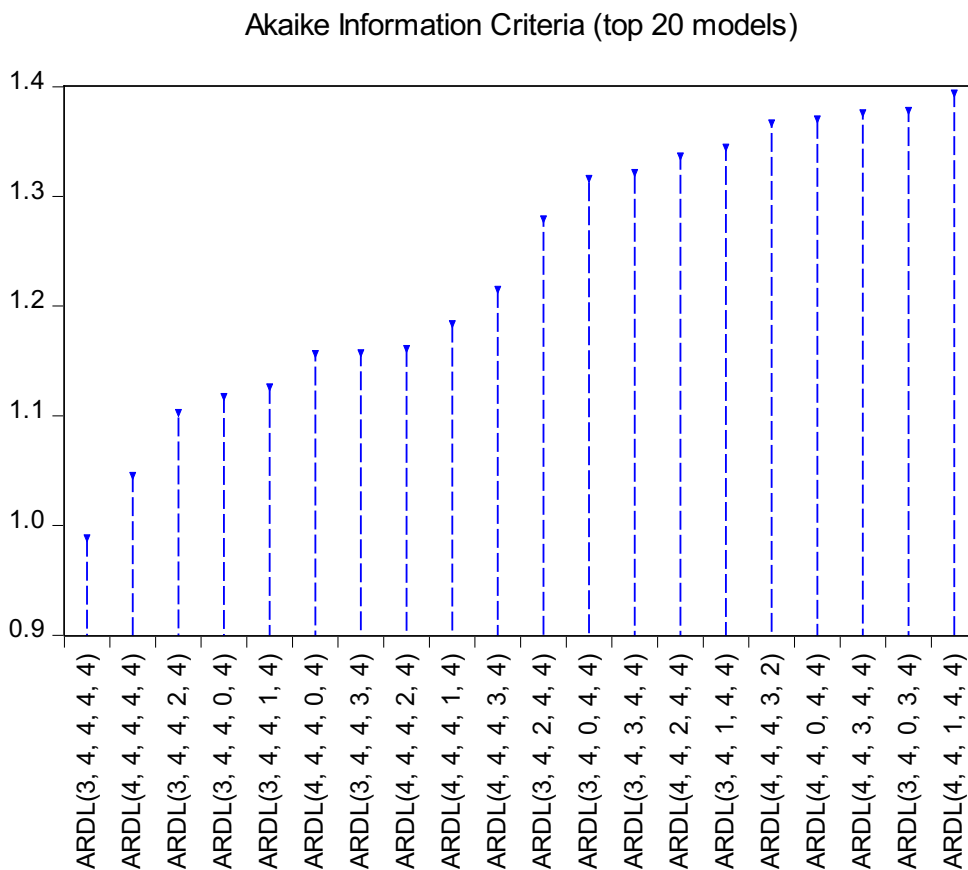


Figure 3: Akaike Information Criterion (AIC)

The Akaike Information Criterion (AIC) graph above shows the model selection value for the twenty best-estimated models with the lowest criterion value. To achieve parsimony, the model with the least AIC, that is ARDL (3, 4, 4, 4, 4) is selected to determine the error correction and long-run models.

To verify whether the residuals from the model are serially uncorrelated, in the estimation view, we proceed to Residual Diagnostics/Serial Correlation LM Test and select the number of lags. In our case, we chose 4. Here's the output

4.6 Error Correction Mechanism

The table 2 below shows the ARDL co integration test results for $AGDP_t = \beta_0 + \beta_1 GCE_t + \beta_2 EXR_t + \beta_3 INT_t + \beta_4 INFL_t + \mu_t$

Table 2: ARDL Co-integration Test for First Model (AGDP)

Dependent Variable: AGDP

Method: ARDL

Dynamic regressors (4 lags, automatic): GOR GRE GCE GBD

Fixed regressors: INFL INT EXR

Variable	Coefficient	Std. Error	t-Statistic	Prob.*
AGDP(-1)	0.320060	0.378047	0.846615	0.4218
AGDP(-2)	0.007651	0.402734	0.018997	0.9853
AGDP(-3)	-0.148632	0.337680	-0.440156	0.6715
AGDP(-4)	0.536512	0.251097	2.136672	0.0651
GCE	0.120569	0.193906	2.621795	0.0014
GCE(-1)	0.349069	0.226972	1.537935	0.1626
GCE(-2)	-0.477490	0.253855	-1.880958	0.0968
GCE(-3)	-0.226122	0.297481	-0.760124	0.4690
INFL	0.014195	0.055190	0.257200	0.8035
INT	0.434367	0.169070	2.569148	0.0332
EXR	8.50E-05	0.015560	0.005463	0.9958
R-squared	0.969790	Mean dependent var		24.26235
Adjusted R-squared	0.875384	S.D. dependent var		4.585526
S.E. of regression	1.618733	Akaike info criterion		3.883658
Sum squared resid	20.96238	Schwarz criterion		5.050875
Log-likelihood	-40.02218	Hannan-Quinn criter.		4.281712
Durbin-Watson stat	2.506320			

Source: Author's Computation 2019.

Table 2 shows the result of ARDL co-integration test which tests the long run equilibrium relationship between the variables in the model. From table 2, we observe the presence of a long-run relationship between the variables using lag 4. The result above shows that there are significant effects of the lags of some of the fiscal policy variables on agricultural sector contribution to GDP (AGDP). We have a significant effect of the fourth lag of AGDP, and the third lag of Government Capital Expenditure has a significant effect on Agricultural Sector Contribution to GDP at 10%, implying that the current Government Capital Expenditure would affect Agricultural Sector Contribution to GDP in the next 3 years.

The table above indicates the long-run equilibrium and short-run dynamics of government capital expenditure on agricultural sector contribution to GDP (AGDP). The Long and short-run coefficients show that the coefficient of government capital expenditure (GCE) lag one has a significant effect on agricultural sector contribution to GDP (AGDP) [sig. = 0.0014], and a one percentage increase in government capital expenditure leads to a 96.97% increase in agricultural sector contribution to GDP. The short-run dynamics of government capital expenditure on agricultural sector contribution to GDP showed that government capital expenditure has a significant and positive effect on agricultural sector contribution to GDP (AGDP) [sig. = 0.0014] and a one percentage increase in government capital expenditure leads to 96.97% decreases in agricultural sector contribution to GDP. This may be as a result that any change in the course of any year as regard to government capital expenditure will only start having an influence on agricultural sector contribution to GDP after the year that the change is made.

5.0 Conclusion and Recommendations

5.1 Conclusion

Based on the findings of this study, we conclude: that there is a significant effect of government capital expenditure on the growth of the agricultural sector in Nigeria. The implication of the study is that fiscal policy through government capital expenditure will increase the agricultural sector growth and thereby increases its contributions

to the growth of the economy. This means that when there is enough revenue, the government only spends more money on infrastructural development that can help the agriculture sectors to grow by having access to good road and electricity. The result is an indication that government capital spending in Nigeria has been able to spur the economic growth of Nigeria through agricultural sector output.

5.2 Recommendations

Based on the findings, the study makes the following recommendations;

1. Government of Nigeria should adhere strictly to the implementation of government spending so as to increase the level of real sector development in Nigeria which will have the capacity to stimulate economic growth and create employment.
2. Government of Nigeria should formulate appropriate policy mix that would motivate the firm in the oil sector to enhance improved performance and contribution of the sector.

References

- Akinmulegun, S. O. (2014). the relationship between Government Deficit Financing and Economic Growth in Nigeria. *British Journal of Economics, Management and Trade*, 4(11): 1624-1643
- Arikpo, O. F., Ogar, A. and Ojong, C. M. (2017). The Impact of Fiscal Policy on the Performance of the Manufacturing Sector in Nigeria. *Euro-Asian Journal of Economics and Finance*, 5(1): 11-22
- Asagunla, T. M. and Agbede, M. O. (2018). Oil Revenue and Output Growth in Nigeria. *IIARD International Journal of Economics and Business Management*. 4(6): 65-75
- Asamaa, A. M. (2009). Effect of Fiscal Deficit on some Macroeconomic aggregates in Nigeria. *The Nigeria Economic Society, Ibadan*, 389-416.
- Barro, R. (1999). Notes on Growth Accounting. *Journal of Economic Growth*, 4, 119-137.
- Central Bank of Nigeria (2011). Statement of Accounts and Annual Reports. Abuja: Central Bank of Nigeria.
- Central Bank of Nigeria Statistical Bulletin (2015, 2016 and 2017).
- David, N. (2005). Agricultural taxation in developing countries: a survey of issues and policy. *Department of Economics, Simon Fraser University, Burnaby, BC, Canada V5A 1 S6*.
- Eze, O. R. (2017). Fiscal Deficits and Foreign Reserve: Evidence from Nigeria. *Nigeria International Review of Business and Social Sciences*, 1(11): 17-35
- Eze, O. R., and Ogiji, F. O. (2013). Impact of fiscal policy on the manufacturing sector output in Nigeria: an error correction analysis. *International Journal of Business And Management Review (IJBMR)*, 1(3), 35-55.
- Harris, D., Dimitros, M., Dimitris, P and Evangelia, V. (2017) Fiscal Policy with an Informal Sector in Switzerland. *Bank of Greece Working Paper Serials* 235
- Heakel, S. D. (2015). Household Saving in Developing countries: first cross country evidence. *World Bank Economic Review*, 6(3): 529-547.
- Ivo, I. (2017). The impact of the fiscal Policy on Debt. The net effect on Growth. *Master's Thesis submitted to the faculty of Applied Economic Services, University of Antwerp*. 1.40
- Jamison, S. (2013). Global Economic Downturn and the Manufacturing Sector performance in the Nigerian Economy. *Journal of Emerging Trends in Economics and Management Sciences (JETEMS)*, 3(1): 38-45.
- Jelilov, G. (2016). The Impact of Interest Rate on Economic Growth Example in Nigeria. *African Journal of Social Sciences*, 6(2): 51-64
- Joseph, U. M., Micheal, C. E. and Stella, O. O. (2016). Evaluation of the Contribution of Oil Revenue on Economic Development in Nigeria. *International Journal of Economics and Finance*, 8(6): 210-218
- Lawal, A.A. (1997). The Economy and the State from the Pre-colonial Times to the Present in Osuntokun, A. and Olukoju, A. (eds.) *Nigerian Peoples and Cultures*. Ibadan: Davidson.
- Lawal, A.A. (1997). The Economy and the State from the Pre-colonial Times to the Present in Osuntokun, A. and Olukoju, A. (eds.) *Nigerian Peoples and Cultures*. Ibadan: Davidson.
- Mankiw, N. G. (2000). *The savers-spenders theory of fiscal policy*. Paper prepared for the meeting of the American Economic Association.
- Mankiw, N. G. (2002). *The Savers-Spenders Theory of Fiscal Policy*. Paper prepared for the meeting of the American Economic Association.
- Mankiw, N.G. (2012). *Macroeconomics*, 2nd Ed., New York: Worth Publishers.
- Mark, H. and Asmaa, E. (2009). What is fiscal policy? Back to basic. Online publication, www.google.com.
- Mark, P.R and Asmaa, L (2015). The Relationship between Human Capital, Value Creation and Employee rewards. *Journal of Intellectual Capital*, 16 (2):390-418.

- Monica, V. A., Sovin, N. B. and Andrei, M. A. (2018). The Impact of Fiscal Policies on Corruption: A Panel Analysis. *South African Journal of Economic and Management Sciences*, 21(1): 1-9
- Noko, E. J. (2017). Impact of agricultural sector on Nigeria economic growth, Edu cac Info, www.educacinfo.com/agricultural-sector-nigeriaeconomic-growth/
- Noko, E. J. (2017). Impact of agricultural sector on Nigeria economic growth, Edu cac Info, www.educacinfo.com/agricultural-sector-nigeriaeconomic-growth/
- Nwanne, N. C. (2019). Effect of Fiscal Policy Implementation on Real Sector Growth in Nigeria. Thesis presented to the Department of Banking and Finance, Faculty of Management Sciences for the Fulfilment of the award of Doctor of Philosophy (Ph.D) Degree in banking and Finance.
- Olagbaju, J. and T. Falola (1996), "Post Independence Economic Changes and Development in West Africa" in Ogunremi, G.O. and Faluyi, E.K. (eds.) *An Economic History of West Africa Since 1750*. Ibadan: Rex Charles.
- Omitogun, O. and Ayinla, T. A. (2007). Fiscal policy and Nigerian economic Growth. *Journal of Research in National Development*, 5(2), 45-54.
- Onwumere, J. U. J. (2009). Business and Economic Research Methods. *Vougasen Limited*, Enugu.
- Onyemaechi, J.O. (2014). Impact of fiscal policy components on Economic growth in Nigeria: An Empirical Trend Analysis. *Kuwait Chapter of Arabian Journal of Business and Managerial Review*, 4(1): 1-9
- Osinowo, O.H. (2015). Effect of Fiscal Policy on Sectoral Output Growth in Nigeria. *Advances in Economic and Business*, 3(6): 195-203
- Peter, N. M. (2015). Econometric analysis of the impact of fiscal policy variables on Nigeria's economic growth. *International Journal of Economic Development Research and Investment*, 2(1): 171-183.
- Peter, N. M. and Simeon, G. N. (2011). Econometric analysis of the impact of fiscal policy variables on Nigeria's economic growth. *International Journal of Economic Development Research and Investment*, 2(1): 171-183.
- Sandra, M. A., Alan, F., Eduardo, O. J. and Giselle, D. C. (2017). The Impact of Fiscal Policy on Inequality and Poverty in Chile. *Policy Research Working Paper Series No. 7939*. World Bank Group.
- Ubesie M. C. (2016). The Effect of Fiscal Policy on Economic Growth in Nigeria. *Journal of Finance and Accounting*, 4(3): 140-145.
- Victor, S. and Roman, K. (2017). Modeling of Fiscal Policy effects on Agriculture and Industry in Ukraine. *Journal of Information System in Management*, 6(2): 131-142.
- World Bank (2013). Nigeria economic report (No. 1). Washington, DC:World Bank.

Sociological Impact of Advertisements on Saudi Arabian Consumers

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Abstract

The impact of advertisement can be seen very clearly in various ways on Saudi consumers in the Kingdom. The purpose of this article is to investigate the impact of modern advertisement on Saudi consumers and how it influences the purchase behavior of consumers. This research article outlines the challenges and given rise to the new business economic order giving a boost to the sale and purchase in the indigenous market as internet, and mobile facilities are available. Furthermore, this research paper highlighted that a new global culture with a new socio-economic setup has cropped up with set up of preference and options that could cater to global taste requirement and outlook.

Keywords: Impact of Advertisement, Consumer Buying Behavior, Saudi Consumers, Consumer Awareness

1. Introduction

Saudi Arabia is very important from geo-political aspect amongst Gulf Countries, and its oil strength had Saudi Arabian known the art of interdependence, the history would have been different altogether. It has great strength to play the role of impact in the region. Presently Saudi Arabia is one of the largest advertising markets in the gulf region, accounting for 40 % of all advertising costs in the Gulf region. The Saudi Arabia market account is, however meager but per capital expenditure is very significant. It is important to mention here that the prime targets of the best international advertising firms. Print media assumes the most important part of advertising expenditures in the Kingdom, of Saudi Arabia with newspapers accounting for 61% of the spending, magazines 23% and television just 16%.

Ministry of Commerce of KSA government¹ claimed that the Kingdom of Saudi Arabia is the largest duty free market in the Middle East and North Africa (MENA), where it has 25% of the total regional GDP (Gross Domestic

¹ <https://mci.gov.sa/en/AboutKingdom/Pages/SaudiEconomy.aspx>

Product), partially, because of the geographical location that helps it easily access export and import markets in Europe, Asia, and Africa.

The sociological impact of advertisement is to make the consumer aware of social, economic behavioral change taking the place of every level of time. It makes him aware of the new outlook of modern advertisement needed to cater to information with the new socio-economic growth of modern advertisement. The social perspective of modern advertisement basically informs buyers and consumers from the Saudi consumer standpoint of the welfare of the society as a whole in which consumer is seen from the social aspect. The growth of modern advertisement without the social perspective would be incomplete as the point of view of consumers as an individual is also must with the growth of modern advertisement in the kingdom of Saudi Arabia. It has become more dynamic and multidimensional the social and economic growth of modern advertisement is to highlight the socio-economic change taking place in modern business world. Firstly it create awareness of the new social change, the commercial, cultural and all interchange of the techniques as well as global events taking place in the modern business world. The social and economic aspects of modern advertisement are to inform the consumers to the socio-economic values basically. Replacing the former and conventional economic policies and also make them aware that competence and survival of the society can be kept alive taking into account the new socio-economic values, system, techniques not only indigenous but also on the global plane.

There are various roles of advertisements basically is to inform, educate, and create an awareness are a know-how with consumers. So that they may have many options about selection and rejection of the consumer goods with new social change, a new vision of sale, and purchase system. Advertisement furnishes information with new market strategies and their needs e.g., satisfaction, economy, etc. The role of advertisement is to inform consumers about their products, prices, and places where the products are available. It also helps marketers achieve their objectives, and all variable must work together to achieve advertising objectives. Furthermore, the role of advertisements is to inform buyer the qualitative and inner worth and outward glamour of finished consumer products, so that they fall into pitfalls of an impulse purchase. The role of advertising in a society has been a great topic of a good debate. Advertising may be useful for consumers in order to enhance awareness from the customer standpoint of view of dissemination of information. Such information is necessary when buyers have to make a choice from the various products and services or from a variety of products. It can be argued that the advertising in Saudi Arabia is gradually gaining in sophistication and importance due to the increase in sales volume, sales promotions different kind of merchandising schemes which has risen considerably in last decade. Therefore, it gives updated information to consumers with every social change in new modern socio-economic world.

2. Literature Review

After the post liberalized economy, the success of the business depends upon the business environment and a wide knowledge of the consumers. Knowledge of consumers starts by cognitive approach. According to (Abideen & Saleem, 2011), "television and internet advertisements are the best mode of advertisement to attract targeted customers in a high competitive market. Television Advertisement can be defined as "any paid form of non-personal communication of ideas or products on the electronic media to end-user" (Bogdanovic, 2013). Buying Attitude has been defined as an inside self-general evaluation of any entity such as; people, objects, advertisements, or issues (Solomon, 2013). (Tai, 2007). According to Alwitt & Prabhaker (1992, 1994), people show an encouraging approach toward advertising. Such attitudes toward advertising were discovered to be affected by demographic variables. Many studies s showed that if there are favorable attitudes toward advertising, attitudes toward both specific type of advertising and products purchase intention will be influenced (MacKenzie et al., 1986; Shavitt, et al., 1998). Furthermore, consumer buying behavior towards advertising was found to be partially mediated by attitudes toward product placements in games on respondents' perceived purchasing behaviors (Nelson et al., 2010). Wijesundara C.B. Galdolage B.S². (2007) claimed that researchers found out that there is a moderate positive relationship of TV ads viewing of children and the bad food habits. It makes a substantial contribution to childhood obesity, because commercials promote unhealthy dietary practices. Most food advertisements are high-calorie foods –such as fast foods, sweetened foods, cereals, etc. TV viewing has also

² https://www.researchgate.net/publication/280098783_IMPACT_OF_TV_ADVERTISING_ON_CHILDREN'S_BEHAVIOR

caused childhood obesity as not doing any exercise during that time. Rafique³ et al., 2012 claimed that advertisement is a way to communicate with the audience. Thus if we say that advertisement is like magic than it will not be false because advertisement actually changes the needs and wants of the people and sometimes it creates the need among the people. People are highly affected by the advertisements, and organizations are trying to target the masses.

According to Rai,⁴ 2013, there are several national and international brands which consumers recognized and have a strong perception in their minds. These perceptions are pinched in their mind because of their culture, lifestyles, and surroundings. Also, advertisements have a very important role in shaping the consumer mind and behavior. Advertisements are the source of motivation which forces them to buy a particular product. Furthermore, it can be said that the advertisements are also a source of building trust and brand loyalty.

Samar Fatima et al., mentioned (2015) Consumers in all over the world are attracted towards the brand and products which are emotionally attached with their behaviors. Studies found that emotional attachments put a huge influence on the customers and their buying behavior as people tend to associate themselves with the brand.⁵

After reviewing the literature, we come up with the idea that intense work has been done on the television advertisement impact on consumer buying behavior, but little work as per our research has been seen on impact of religiosity on the relationship between television advertisement and consumer buying behavior, so we have chosen this research topic. It can be said that television advertising is still the most pervasive and powerful tool for reaching Saudi Arabian consumers. For small businesses, however, the barriers to using TV ads can be daunting; airtime can be very expensive, and good commercials are difficult and costly to create. The Internet may grab all of the attention these days, but TV is still the media king. According to one recent study, the average American spends more than four and a half hours a day in front of the tube — and a whopping 99 percent of all U.S. households have at least one TV. Therefore, advertising has played a very important role in developing brand name, credibility, and product awareness which will help in consumers buying decision (Bovee & Arens, 1992; Eze & Lee, 2012). Rahman Mohammad Naquibur (2015) has considerably mentioned in his research paper⁶ Here is a tremendous impact of the emergence of Saudi society by virtue of which incoming global factors. As a result of which internet, online retailing and other moderns system and techniques of communication have become popular in the middle east and KSA.

Advertisements generally have an influence on how we perceive things around us. Through various types of advertisements, especially TVCs, portray how a user of a certain product is or should be. It sometimes shows the social class the user of a product belong to, their lifestyle and attitudes. In cases of beauty product, this concept is highly applicable. In a research conducted in 2009, it was observed that one of the most influential ideas spread by the media is society's perception of beauty and attractiveness. The thin, beautiful woman and the handsome muscular men are seen everywhere. As the influence of media increases, the pressure to hold on to these ideals increases (Russello, 2009). YWCA USA published a report, Beauty at Any Cost, which emphasized the concerns of the beauty obsession on women and girls in America through social media in 2009⁷. According to this report, the ceaseless pursuit of perfection is more toxic to American women and girls than ever. This feeling of insecurity and obsession is very much likely to trigger the purchase of beauty products (Britton, 2012).

3. Research Objectives

In day to day business companies spend huge money on advertising of their products and children, and they believe advertising aimed at children have a great influence on consumer behavior. The literature and some of the eminent

³ <http://www.ijmtbr.com/PDF/IJMTBR-2019-07-03-10.pdf>

⁴ Rai, N. (2013). IMPACT OF ADVERTISING ON CONSUMER BEHAVIOUR AND ATTITUDE WITH REFERENCE TO CONSUMER DURABLES. International journal of management research and business strategy ISSN 2319-345X Vol. 2, No. 2.

⁵ Samar Fatima and samreen Lodhi Impact of Advertisement on Buying Behaviours of the consumers: Study of Cosmetic industry of Karachi International Journal of Management Sciences and Business Research, Oct-2015 ISSN (2226-8235) Vol-4, Issue 10

⁶ Organized Retailing in Context with Amalgamation of Small Firms in Saudi Arabia 2015 International Journal of Economics, Finance and Management Sciences 2015; 3(5): 583-593 ISSN: 2326-9553 (Print); ISSN: 2326-9561 (Online)

⁷ <https://www.latimes.com/style/la-igw-ywca19-2008aug19-story.html>

authors reveal that there is a positive impact on Saudi consumers and also their involvement in buying decision process of commodities with the influence of advertisement.

The purpose of the study is to investigate the following objectives:

1. To find out whether children targeted TV advertisements influence the buying
2. To find out the impact of advertising on the consumer on their own selection in purchasing decision of product and services
3. To find out the sociological impact of advertisements on consumers
4. To find out the consumers are getting advertising heroes as a role model
5. To find out the consumers targeted advertisements influence the consumptions of targeted products.

4. Methodology

The design of the proposed research is descriptive, which is used for describing people who take part in the study, primarily for gaining insights and ideas about the research problem and the variables and issues associated with those problems. For the survey purpose, the questionnaire was developed to collect primary data, and secondary data is collected using a journal, books, and the internet.

4.1. Data Collection

Primary Data is collected from respondents through observation and survey. To conduct surveys, questionnaire has been used as it is a quick source of information. Therefore, data collection for the present study was collected from graduate students (Male & Female) of the western and southern region of Saudi Arabia. The students participated in the study in the presence of the professors, and in each class, questionnaire were distributed to graduate students.

The Secondary Data has been collected using different books, journals, reports, articles, and periodicals, including the World Wide Web.

Respondents for the survey were selected by non-probability –convenience method in accordance with the judgment of the researchers and 200 consumers age group of 18-40 including male-female from Makkah Jeddah and Jizan of the Western and southern province of Saudi Arabia. All respondents were those with much exposure to the television, and this sample size is also enough to generalize findings in context to Sociological impact of advertising on Saudi consumers.

4.2. Tools

The present research work is to find out the impact of advertisement on the Saudi consumers. The developed Questionnaire is based on the 5point Likert scale with some open-ended questions. It is separated into three sections. A first section describes the consumer profile. The Second section is constructed on the variables used to analyze the decision of consumers. In 5 point Likert scale, the 1 is used as "strongly disagree," and 5 as "strongly agree." The Third section, based on open-ended questions, to get a more flexible view. To avoid any ambiguity due consideration was undertaken.

4.3 Data Analysis

From total of 200 respondents, there were 150 male and 50 female from three different cities Makkah Jeddah and Jizan. Their percentage was 75 % & 25 % respectively, and their age group in between 18-24 and all are under grade students of different colleges. Most of them are Management or marketing students. As mentioned in table 1

Table 1: Respondents from each city of targeted consumers

	Male	Female	Total
Makkah	49	22	71
Jeddah	60	18	78
Jizan	41	10	51
Total	150	50	200

Table 2: Respondents spending time on watching advertisement

Exposure of TV Ads Per Day	Overall	Male Respondent	Female Respondent
Single Time	12.4	14.1	11.6
Two Times	30.5	30.5	32.6
Three Times	15.0	15.9	13.7
And more	39.7	37.9	42.1

Table 3 summarizes the Saudi consumers like to watch different kinds of advertisement through Television, the internet, and social media. It is observed that entertaining advertisement most liked by 78 percent of the respondent. 61 percent respondent influenced by celebrities involved in a consumer products advertisement. 35 percent of respondent they like advertisement on social issues in order to aware the society.

Table 3: Types of Advertisement

Advertisement	Overall %	Male respondent %	Female respondent %
Entertainments	78.1	69.6	86.5
Beverages Products	61	58	65
Detergent	52	34	75
Cosmetics	40	35.2	48.1
Environment	35	41	31
Food products	42	31	54
Electronics	47	73	13

Our research was based on cross sectional data of 15 questions. With 5 independent variables, (Need have 6 questions), (Entertainment have 3 questions), (Dominance have 2 questions), (Brand Recall have 4 questions) and (Stimulation have 3 questions). We have given simple descriptive statistics of independent variables in Table 4.

Table 4: Impact of Advertisement with reference to need

	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
Does advertisement influence to customers	3	16	27	125	29
Do you like print media, social media or electronic media	3	9	12	151	25
Does outdoor displays of advertisements are helpful in your day to day life	9	19	35	122	15
Do you think to survive in highly competitive market advertisement is must	4	26	35	127	8
Do you purchase the product and service when you feel it's highly needed	3	9	23	145	20
Does advertisement attractive to your needs	6	15	31	120	28
Do you purchase the product and service when you feel it's highly needed	3	9	23	145	20

As above mentioned table revealed that the 62.5 % consumers agree & 14.5 % strongly agrees that advertisement is necessary to catch the consumer's attraction. In the second question, 60% of consumers agree, and 15.5 % are neutral that helpful print media ads to be necessary. In next 54.54% are agree and 16% are neutral that street ads are relevant to daily life. In the fourth question, 61% agrees that street ads are poorly displayed. In fifth, 61.47% of consumers are agree that in this competitive market any product can't survive without advertisement. In the last question, 72.5% of consumers agree that they buy goods when they feel it is necessary.

Table 5: Impact of advertisement on consumer purchase behavior

	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
Does advertisement always influence consumer purchase behavior	7	6	18	149	20
Does global advertising enhancing your style of living	3	6	19	135	37

In table no 5 the first question, 75.62% of consumers agree that advertisement always having an influence of the silver screen. Next question 67% of consumers agree that they purchase some of the items to satisfy their needs, including enhancing the stranded living and style in modern society.

Table 6: Impact of Advertisement with reference to brand image

	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
Does advertisement create the awareness, about the products	7	20	5	140	27
Does advertisement persuade you to buy the advertise products	11	21	18	130	20
Does global advertisement create the brand image about a particular products	3	9	22	112	14
Does your purchase habits influenced by reference group family friends and a social group	13	28	34	152	14
Does advertisement motivate you to switch from one product to other products	12	21	32	148	12
Does advertisement always encourage you on your purchase behavior	3	17	5	151	24
Does advertisement have any negative impact on our social behavior	12	13	24	120	25

With reference to the table, No 6 question ten shows that 80 consumers agree and 33 consumers strongly agree that advertisement is a key source of awareness about the products. Next 65 % are agreeing that advertisement persuaded to buy the products and services. In question number twelve, 58.87% agrees that the consumer influenced by advertisement and create a brand image about their products. With reference 13 question 76% consumes are agree that their purchase habits influenced by reference group, family friends, and majorly from the social group. Finally, with reference to the last question, 60 % of consumers accepted that there is a negative aspect feel with human relationship.

6. Discussion

It is worth mentioning that the data mentioned in this dissertation has been gathered from 200 respondents of leading cities like Jeddah, Makah, and Jizan by virtue of a self-structured questionnaire. What is important to mention is that stratified random sampling has been applied. The finding of this research paper is as follows and taking into account of methodology and applied on a variable the following:

The result of the present research study shows that there are positive and significant impacts of an advertisement on Saudi consumers. Generally, television advertisements create awareness, knowledge, interest, and purchase decision about a particular product and services. These impacts also lead to influence the buying behavior of the consumer and build the behaviors of society regarding product and services.

85% of consumers get involved and influenced with an advertisement when purchasing goods or services, but 68% of the purchasing goods for them, but 68% of consumers between age 18-25 they pick and choose, liking and options and matching their needs with the advertisements.

Advertisements on different channels in Saudi Arabia like Bahrain, Qatar, and Dubai based Indian channels are taken into consideration in this study to see the sociological impact of advertisement on Saudi consumers. To know and understand the real exposure of an advertisement on Saudi consumers and they were asked to know that on an average per day how many times the watched television and social media advertisements during in the break time of different programs.

The impact of advertisement on Saudi consumers, women, children were found a deep craze the adopting the sophisticated ways of living made an impact on their being giving way to the new scale of socio-economic socio-cultural values. At the same time in brings, emphasis on attitude, preferences and behavioral changes previously in the modern post liberalized economy is important, in result a new socio-economic phenomena, awareness and conscious have influenced the Saudi Arabian consumers. The KSA has a large number of number of middle-class consumers, which gives a boost to sales& purchased and steady growth to the GDP also. Therefore, socioeconomic factors play an important role in enhancing the impact of advertisement, and it can be seen in a different way of life Saudi Arabian context. As a matter of fact, that advertisement creates awareness, knowledge, options preferences, and reaction about and advertised products. It also influences the Purchase decision of Saudi consumers. In addition, it can be said that the advertisement helps the consumers to choose or select their right product to satisfy needs or want.

The present research paper also reflects how Saudi Arabian consumers, teenagers, students, housewives have gone a state of dilemma or they are feeling in an embrace situation after made interacted with a global, western advertisement on the silver screen, at the same time Saudi consumers conscious about the modern advertisement. The present research paper the impact of advertisement on Saudi consumers also put emphasis on how to preserve the indigenes market, and it is equally important with every social or environmental change. At the same time, a significant change has started taking place in socio-cultural normative pattern of Saudi Arabia.

7. Conclusion

In the post liberalized economy the sociological impact of advertisement can be seen very clearly:

1. Awareness of variety of consumer goods that bring them near satisfaction or need or requirement in the Saudi Arabian society, by education and training of Saudi consumers that create a decision-making power to opt and select right choice of consumer products keeping in view of cultural heritage or in the Saudi Arabian perspective.
2. Impact of advertisement exposes the consumers to the global culture, values, and consumer goods finding into the market.
3. In order to make consumer awareness from fallacious slogans flashed on silver screen, radio magazines and internet to prevent from the impulse purchase of consumer products.

4. A conflict can be seen very clearly in between the indigenes value and global value similarly regional culture and global culture as a result shift in morality e.g. cigarette smoking drink and sex appealing pictures.
5. An another conflict take place in between Saudi companies and multinational companies as a result the inflow of multinational companies gave a rise to amalgamation of indigenes in result a large number of indigenes companies took over by multinational companies like Riyad laben, Western Bakeries, Hadco, IBS (International Baking Services) taken over by Al Marai company, Geant hypermarket, Gaint Supermarket taken over by Hyper Panda, Al-Aujan soft drink company taken over Coca Cola KSA company. Therefore, there is decline in revenues and goodwill of to the traditional products as well as traditional markets also.
6. Sociological impact of advertisement has been given rise to the new economic order and giving boost to sale and purchase in indigenes market.

This is not least but last a new global culture with a new socio economic setup has cropped up with set of preferences and options that could cater to global taste requirement and outlook

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References

- Andrian Payne and Penni Frow A satrategic Framework for Consumer relationship management Vol 69 2005. Pp167-176
- Cacioppo, J. T., Haugtved, C. P., & Petty, R. E. (1992). Need for cognition and advertising: understanding the role of personality variables in consumer behavior. *Journal of Consumer Psychology*
- Cacioppo, J. T., & Petty, R. E. (1979). Attitudes and cognitive response. *Personality: An International Journal*, 1, 103-128.
- Cacioppo, J. T., & Petty, R. E., & Quintanar, L. R. (1982). Individual differences in relative hemispheric alpha abundance and cognitive responses to persuasive communications.
- Calder, B., & Sternthal, B. (1980). Television advertising wearout: An information processing view. *Journal of Marketing Research*, 17, 173-186.
- Clark, M. E., Brock, T. C., & Stewart, D. W. (1994). Attention, attitude, and affect in response to advertising. New Jersey: Lawrence Erlbaum Associates.
- Colley, R. (1961). Defining advertising goals for measured advertising results. New York: David, J. (2001). Effects of television advertising on child's purchase behavior.
- Engel, F. J., Blackwell, D. R., & Miniard, P. (1986). *Consumer behavior*. New York College Publishing.
- Engel, F. J., Kollart, T. D., & Blackwell, D. R. (1973). *Consumer behavior* (2nd ed.). New York: Holt, Rincart Italic and Winston, Inc.
- English, B. G. (1994). *Global and multi-national advertising*. New Jersey: Lawrence Erlbaum Associates
- Heiman, G. W. (1995). *Research methods in psychology*. Boston: Houghton Mifflin Company.
- Herek, G. M. (1987). Can functions be measured?: A new perspective on the functional approach to attitudes. *Social Psychology Quarterly*, 50, 285-303.
- Hovland, C. I., & Weiss, W. (1951). The influence of source credibility on communication effectiveness. *Public Opinion Quarterly*, 15, 635-650.
- Jugenheimer, D. W., & White, G. W. (1980). *Basic advertising*. USA: Grid Publishing, Inc. Katona, G. (1963). *Psychology: A study of science*. New York: McGraw-Hill.
- Katz, D. (1960). The functional approach to the study of attitudes. *Public Opinion Quarterly*, 24, 163-204.
- Langmeyer, L., & Shank, M. D. (1994). Does personality influence brand image? *Journal of Psychology*, 128, 129- 131
- Lavidge, R. C., & Steiner, G. A. (1961). A model of predictive measurement of advertising effectiveness. *Journal of Marketing*, 59-62. Leckeny, J. D. (1976).
- Loudon, L. D., & Bitta, D. J. A. (1994). *Consumer behavior* (4th ed.). New York: McGraw Hill, Inc.
- Mowen, C. J. (1993). *Consumer behavior* (3rd ed.). New York: McMillan Publishing Company, Inc.

- Mowen, J. C., & Minor, M. (1998). *Consumer behavior* (5th ed.). USA: Prentice-Hall, Inc.
- Mullen, B. & Johnson, C., (1990). *The psychology of consumer behavior*. New Jersey: Lawrence Erlbaum Associates.
- Munch, J. M., & Swasy, J. L. (1988). Rhetorical question, summarizations, frequency and argument strength effects on recall. *Journal of Consumer Research*, 48, 78-92.
- Ray, M. L. (1973). Communication and the hierarchy of effects. In P. Clarke (Eds.). *New Models for Mass Communication*. Beverly Hills, CA: Sage Publications.
- Russell, J. T., & Lane, W. R. (1996). *Advertising procedure* (13th ed.). USA: Prentice Hall Inc.
- Sangwan, A. (2008). *Effects of consumer buying behavior towards advertisement*. MAIMT
- Stanton, W. J., & Futrell, C. (1987). *Fundamentals of marketing* (8th ed.). Singapore: McGraw- Hill.
- Steuart, H. B. (1970). *Consumer behavior in theory and in action* (2nd ed.). USA: Jon Wiley & Sons, Inc.
- Tellis, G. J. (1987). Advertising exposure, loyalty, and brand purchase: a two-stage model of choice.
- Wells, W., Burnett, J., & Moriarty, S. (1995). *Advertising principles and practice* (3rd ed.) USA: Prentice Hall.
- Wells, W., Burnett, J., & Moriarty, S. (2000). *Advertising principles and practice* (5th ed.) Wilkie, W. L. (1994). *Consumer behavior* (3rd ed.). USA: John Wiley & Sons, Inc.
- Wilmshurst, J. (1985). *The fundamentals of advertising*. Singapore: Butterworth Heinemann.
- Rai, N. (2013). IMPACT OF ADVERTISING ON CONSUMER BEHAVIOUR AND ATTITUDE WITH REFERENCE TO CONSUMER DURABLES. *International journal of management research and business startegy* ISSN 2319-345X Vol. 2, No. 2.
- Samar Fatima and samreen Lodhi Impact of Advertisement on Buying Behaviours of the consumers: Study of Cosmetic industry of Karachi *International Journal of Management Sciences and Business Research*, Oct-2015 ISSN (2226-8235) Vol-4, Issue 10
- Rahman Mohammad Naquibur (2015) Organized Retailing in Context with Amalgamation of Small Firms in Saudi Arabia 2015 *International Journal of Economics, Finance and Management Sciences* 3(5): 583-593 ISSN: 2326-9553 (Print); ISSN: 2326-9561 (Online)

What Drives Inclusive Growth? Evidence from Georgia

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Abstract

Inclusive growth is the current debate in development economics because it is seen as central to sustainable economic growth and development. Georgia is one country where growth seems to have been inclusive among the emerging economies. This stimulated a research interest. The paper used growth model and dynamic ordinary least squares method to analyse the Determinants of Inclusive Growth, using Georgia data generated from World Bank Development Indicators between 1996 and 2016. Result shows that growths in industrial and service sectors were significantly responsible for rise in the income share of the poorest and richest income group in Georgia.

Keywords: Drives, Inclusive Growth, Evidence, Georgia

Introduction

Inclusive growth is the current topic of discussion because it is believed that the world will be a better place to live if benefits of growth can go round to every member of the society. But, observation shows that in the majority of the countries in the last two decades, growth benefitted only the rich and widened inequality (Organization for Economic Co-operation and Development (OECD, 2012). For instance, in a random selection of 10 emerging economies between 1984 and 2016, inequality widened in Bangladesh, Nigeria, Bolivia, South Africa, Costa Rica, and Botswana. The countries where inequality narrowed are Malaysia, Chile, Brazil, and Mexico (World Bank, 2018). Lopsided pattern of growth can create a crisis in a country because the people below the minimum acceptable standard of living can rise up against the state any day (Ortiz and Cummins, 2011).

The definition of inclusive growth cuts across individual scholars and institutions. Hirway (2011) defined inclusive growth as that growth which can open opportunity for the excluded and marginalized groups in a society, and Zhuang and Ali (2010) narrowed their definition to the growth which can create economic opportunity for every citizen and lead to a decline in inequality of opportunity. According to Samans et al.

(2015), inclusive growth is the reduction in inequality as the output of an economy grows. On the side of institutions, inclusive growth is the growth that can reduce poverty very fast and at the same time, reduce inequality across income groups (United Nations Development Programme, UNDP, 2011). In the definition given by Asian Development Bank (ADB, 2011), it is that growth which can bring a rise in output and opportunity to the people such that both the poor and the rich derive benefits as the economy grows.

Moreover, Organization for Economic Co-operation and Development (OECD, 2014) points out that inclusive growth is the growth that can create opportunity for all to bring fairly distribution of benefits of economic prosperity in an economy both in monetary and non-monetary terms. The definition given by Anand, Mishra, and Peiris (2013) seems to be more concise. According to Anand, Mishra, and Peiris, inclusive growth means the growth that leads to a faster increase in the income of the poor than that of the rich in real terms, with an obvious reduction in the level of inequality. In this definition, Anand, Mishra, and Peiris made the point clear that the benefits of growth that go to the poor in a real term must be more than the benefits that go to the rich before inequality can fall.

The way inclusive growth is defined as matters for an empirical investigation. For the present study, we take inclusive growth as defined by Anand, Mishra, and Peiris (2013) which is the growth capable of raising the income share of the poor more than that of the rich. There are three main reasons why we are adopting it. One, Sembene (2015) used the same definition in a cross-country study of sub-Saharan African and other countries of Asia. Two, the definition sees inclusive growth beyond addressing inequality problem because inequality can even fall without growth or growth can reduce inequality in a way that is harmful. For example, growth that raises the income of the poor and reduces the income of the rich has reduced inequality. However, the reduction in inequality, in this case, created some disincentives to a group which can harm future growth. Three, adopting the definition will make the statistical estimation easy.

Development indicators show that Georgia is the only fast-growing economy which may have experienced inclusive growth in more than two decades (World Bank, 2018). The share of the lowest 10 percent income group in the country rose from 2.3 percent in 1996 to 2.6 percent in 2016. It indicates that the share of the poorest group from the national income increased by 0.3 percent. Similarly, the share of the highest 10 percent income group rose from 27.9 percent in 1996 to 28.1 percent in 2016. This indicates that the income share of the richest 10 percent income group in the economy increased by 0.2 percent. From the change in income of the poorest and richest group, growth in Georgia between 1996 and 2016 satisfied the necessary and sufficient conditions of inclusiveness because its benefit went to the poorest more than the richest group.

Economic performance of Georgia has been impressive since 1995. Outside 2009, the country recorded positive growth between 1995 and 2016 (World Bank, 2018). With the benefits of growth trickling down to the poorest group more than the richest in Georgia, the country achieved the feat which none of the fast-growing economies of China and Malaysia was able to achieve. The achievement motivated the authors' interest to examine the factors which led to inclusive growth in Georgia so that other developing countries can emulate.

The Theory and Related Literature

Debates in economic literature have centred on growth since the time of the mercantilist and the early classical scholars. The debate will likely continue and may only end with man. This is because growth and development are the very essence of life of every individual or the society in which the individual lives. As far as there are unsatisfied needs and inequality exists in the society, the one below the measurement ladder will continue striving to catch-up the one on top of the ladder. It is the struggle for equality that creates inequality. Theories of growth evolved over time, and like theories in other academic disciplines, some of them have been challenged by the dynamics of world economic development.

Early scholars of economics were interested in the growth of the national economy, and every discussion was on what can lead to an improvement in the national income. Adam Smith directed his effort to the wealth of the nation and built his theory around free trade and specialization based on absolute advantage. He argued that

when every nation specializes in the production of the commodity, she has an absolute advantage in production and import the one she has an absolute disadvantage in production; the output of that country will increase because she will direct her resources in producing only the commodity she is better suited for. In addition, the process will lead to an increase in world output as well as benefits to all. Unfortunately, the absolute advantage did not bring a fair distribution of income across income groups.

The theory of socialism which came up in the early twentieth century was a revolution against widening income inequality and class exploitation. Karl Marx, who propounded the theory, pointed out that the evil of capitalism is class exploitation. Marx asserts that the capitalist pay workers less than what they contributed in the production process only to exploit them. The Marxian theory of socialism led to class struggle and revolution in some parts of Europe and Asia in the early twentieth century. The socialist revolution led to a change in development thinking towards the challenges of inequality and the need to fight poverty. As a result, the theory of socialist system which placed ownership and distribution of wealth on the state emerged in the early twentieth century.

Socialism succeeded in narrowing class inequality but slowed productivity and growth. For example, economic prosperity was slower in the former Union of Soviet Socialist Republic (USSR) and the People's Republic of China where socialism was practiced when compared with the United States of America where capitalism was practiced. Socialism as a theory had become less popular in economic thinking since the early 1990s when the Union of Soviet Socialist Republic collapsed, and the component states, as well as China, opened up their economies to the outside world. Simon Kuznets (1955) pioneered research on the relationship between economic growth and income inequality. The result of Kuznets' study showed an inverted U-curve relation between economic growth and income inequality. Precisely, the study revealed that at the initial stage of a country's economic development, inequality increases with growth, and later, inequality falls as growth continues.

The outcome of Kuznets' work led to the emergence of some other theories of growth and poverty. The sustainable growth theory posits that growth creates employment, and employment creates income which reduces poverty. Karnani (2011) points out that steady employment is the easiest way to move people out of poverty. Scholars like Dursun and Ogunleye (2016) found a positive impact of growth on poverty reduction as well as a negative relationship between employment and poverty. However, Son and Kakwani (2004), in their study, revealed that growth could reduce poverty if the level of inequality in an economy is low. Poverty is the developing countries' challenge. Despite measures such as social intervention taken in the past to checkmate it, it has remained in many developing countries. Studies by Potts (2012), and Baum, Mshvidobadzo and Tsuruoka (2015) showed evidence that poverty reduction strategy like cash transfer can lead to a disincentive to work as the poor develop a poor attitude to work.

Inclusive growth is indispensable in the fight against poverty. Unfortunately, studies are scanty in the area. The known studies here include Sembene (2015) and Ibukun and Aremu (2016). Evidence from the study by Sembene revealed that implementation of the poverty reduction strategy in sub-Saharan Africa and some other countries outside Africa did not lead to inclusive growth. Study in Nigeria by Ibukun and Aremu had a methodological problem because they used per capita income as a proxy for inclusive growth. However, scholars like Nagaraj (2012), Ogujiuba and Alehile (2011), Hull (2009), and Islam (2014) have pinpointed the factors that can lead to inclusive growth. They highlighted the importance of job creation in the sectors that drive the growth and the need to make inclusive policy such as reform in education and health as the factors that can make growth inclusive.

These scholars argue that poor skill is a limiting factor to labour market opportunities and if the state increases investment in education, the poor can take advantage of it to get trained according to the skill needs of the modern economy. Zhuang and Ali (2010) and Canlas (2016) equally hold the same view that access to education is very important in the achievement of inclusive growth because the poor cannot benefit from the opportunities the labour market provides until they acquire the right skill. The opinion is in line with the view of Chenery et al. (1979) who suggested that government should invest in education specifically targeted at the poor as a

development policy in developing countries because it is the major source of human capital development which the poor need in order to reap the benefit of growth.

Moreover, Jeong (2005) and United Nations Development Programme (UNDP, 2014) maintained that the linkage between the sector which drives growth and the sector where the poor works play a major role in propelling inclusive growth. Jeong points out that occupational transformation takes place as the tempo of industrialization rises, paving the way for labour to migrate from agriculture to the industry. And for growth to be inclusive, agriculture and the industry must be linked so that a great number of the poor will be able to move from the agricultural activity to the industry. On the other hand, the position of Anand, Mishra, and Peiris (2013) is that the pattern of growth is important in bringing inclusiveness. According to them, when growth takes place in such a way that it increases the income of the poor more than that of the rich, it will be inclusive. But when growth increases the income of the rich more than that of the poor, inequality will widen, and growth will not be inclusive.

With the above literature reviewed, the determinant of inclusive growth has not been done in Georgia to the best of the knowledge of the authors. Georgia experienced inclusive growth between 1996 and 2016 (World Bank development indicators, 2018), and a study like this will benefit many developing countries. The present study will fill the gap in the literature, and the outcome will be of the great lesson to other developing countries.

The Model

We specify an exogenous growth model which operates within the framework of the neoclassical economists and can be applied in the dynamic ordinary least squares estimation method. We follow the Solow-Swan growth model, which explains long-run economic growth using capital, labour, and technological progress. Accordingly,

$$Y(t) = k(t)^\alpha (A(t)L(t))^{1-\alpha} \dots \dots \dots (1)$$

Where: t = time,

$0 < \alpha < 1$ = elasticity of output accrued to capital, $Y(t)$ = total output, A is labour-augmenting technology, and AL is the effective labour in the model of Georgia economy within the period of study. The effective labour (AL) grows at $D+g$ while capital depreciates at δ , Hence, the derivative of K with respect to time becomes

$$K'(t) = s*Y(t) - \delta*K(t) \dots \dots \dots (2)$$

The golden rule savings rate of the Solow-Swan maintains that the capital/output ratio is solely a function of savings at the equilibrium. K' is inversely related to capital labour ratio since α is less than 1 at any time t .

$$MPK = \frac{\partial Y}{\partial K} = \frac{\alpha A^{1-\alpha}}{\left(\frac{K}{L}\right)^{1-\alpha}} \dots \dots \dots (3)$$

Equation 3 shows that a country with less K/L will get a higher marginal product which provides a higher return on capital, that is, the inflow of investment from rich country to poor countries.

The model for this study is the income share function using data from Georgia. The model is designed to capture the impact of such change in some sectors of the economy of Georgia on the income share of the lowest and the highest 10% group.

$$YS_{L,H} = f(HC, AGG, EMP, INDG, GRS) \dots \dots \dots (4)$$

Where: YS = Income share (YS_L = income share of the lowest 10% and YS_H = income share of the highest 10%), HC = human capital development, EMP = employment, AGG = Growth in Agriculture, $INDG$ = Growth in Industrial sector and GRS = Growth in services.

Equation 4 captures the behaviour of income share by the lowest and highest 10% income group in Georgia. For estimation, equation 4 is specified econometrically-

$$YS_t = \alpha + \beta_1 HC_t + \beta_2 AGG_t + \beta_3 EMP_t + \beta_4 IND_t + \beta_5 GRS_t + e_t \dots \dots \dots (5)$$

Where

α = intercept. β_1 - β_5 = coefficients, e = error, and t = time to denote time series. Other variables are as defined before.

Equations 4 and 5 can be specified as

$$Y_{it} = \alpha_i + \beta_i X_{it} + e_i \dots \dots \dots (6)$$

where: Y_t represents the income share of the lowest or highest 10% in Georgia, X_t is made up of all the explanatory variables as described in the model; e_i is the error term.

Data

Data for the study were obtained from the World Bank Development Indicators (2018) between 1996 and 2016.

Result

The results of the analyses are presented in tables 1-4 below

Table1: Unit Root Test

Variable	ADF	5%	Order of Integration
YSH	-8.944510	-2.897223	I(1)
YSL	-11.42059	-2.898623	I(1)
AGG	-8.680164	-2.900670	I(2)
EMP	-8.948968	-2.897223	I(1)
GRS	-9.312128	-2.897223	I(1)
HC	-6.547406	-2.900670	I(1)
INDG	-12.76576	-2.898623	I(2)

Source: analysis using Georgia data

Table 1 is the result of the unit root test for the stationary level of the variables. Industrial and agricultural growths are stationary at the second difference, while the rest are integrated at the first difference. Regression without unit run test is not always reliable because the result may be spurious (Baltagi, 2001).

Table 2a: Result of Structural Equation (dependent variable= lowest 10% group)

Variable	Coeff	Std error	t-value	prob
C	2.448535	3.547378	0.69	0.4921
AGG	-0.092621	0.011736	-7.89	0.0000
EMP	-0.035880	0.016107	-2.23	0.0288
GRS	-0.127808	0.018726	-6.83	0.0000
HC	0.071051	0.032788	2.17	0.0333
INDG	0.136307	0.026642	5.12	0.0000
R2				0.610529
F-stat				24.45435
Pr(F-sta)				0.000000

Source: analysis of Georgia data

Table 2b: Result of structural model (dependent variable= highest 10% income group)

Variable	Coeff	Std error	t-value	prob
C	-40.64434	18.82521	-2.16	0.0339
AGG	0.523359	0.062281	8.403200	0.0000

EMP	0.286021	0.085477	3.346196	0.0013
GRS	0.789003	0.099377	7.939465	0.0000
HC	0.150105	0.173998	0.862684	0.3910
INDG	-0.542198	0.141384	-3.83	0.0003
R ²	0.513235			
F-stat	16.44835			
Pr(F-sta)	0.000000			

Source: analysis using Georgia data

Table 2a and 2b are the analysis without due consideration of the stationary level of the data. The purpose of the analysis is for reference in further transformation.

Table 3a: Result of Dynamic Equation (dependent variable= lowest 10% income group)

Variable	Coeff	Std error	t-value	prob
C	0.011379	0.009208	1.24	0.2203
D(D(AGG))	0.005452	0.007394	0.74	0.4632
D(EMP)	-0.025522	0.012280	-2.08	0.0411
D(GRS)	-0.039408	0.011416	-3.45	0.0009
D(HC)	0.021987	0.021094	1.04	0.3006
D(D(INDG))	0.042148	0.013778	3.06	0.0031
R ²	0.26			
F-stat	5.349021			
Prob(F-stat)	0.000289			

Source: analysis of Georgia data

Table 3b: Result of Dynamic Equation (dependent variable= highest 10% income group)

Variable	coeff	Std err	t-value	prob
C	-0.044283	0.049417	-0.90	0.3730
D(D(AGG))	-0.002294	0.039680	-0.06	0.9540
D(EMP)	0.121536	0.065903	1.84	0.0691
D(GRS)	0.218804	0.061266	3.57	0.0006
D(HC)	0.087118	0.113206	0.77	0.4440
D(D(INDG))	-0.153573	0.073941	-2.08	0.0412
R ²	0.22			
F-stat	4.340485			
Prob(F-stat)	0.001580			

Source: analysis using Georgia data

Result in table 3a, and 3b are very important because the analyses were done, taking into consideration the stationary levels of the data. In table 3a, all the variables in the equation turned out with the expected sign except employment generation. Human capital development, agriculture, and industrial growth have a positive effect on the income share of the poorest group in Georgia. Industrial growth was the significant factor that led to the increase in income share of the bottom 10% group in the country within the period of analysis. When the industrial sector grows by a percent, the income share of the bottom 10% income group will rise by 0.04 percent. The result supports the argument that as an economy grows, the poor migrates from poor paying agriculture sector to industry where the condition of work is better (Jeong, 2005). Moreover, employment and growth in the service sector had a significant reduction in the income share of the poorest group.

In table 3b, agricultural growth has a negative effect on the income share of the highest 10% income group. This is expected because the agricultural sector in the majority of the countries of the world is dominated by the lower-income group. The growth of the service sector is highly significant and is the major contributor to the increases in the income share of the highest 10% income group between 1996 and 2016. From the coefficient, a percent growth in the service sector will lead to 0.22 percent increase in the income share of the richest 10% income group in the country.

Discussion of Finding

The focus of the research is on the determinants of inclusive growth with reference to Georgia. The interest shown in the area and with particular reference to Georgia is because thorough examination of World Bank Development Indicators (2018) reveals that the country is the only emerging economy which experienced inclusive growth in the last two decades. Moreover, sustainable development will be difficult to achieve in developing countries if growth is not inclusive. Inclusive growth portends that almost everyone is on board of the ship as the economy moves forward in a more progressive direction.

There are two surprises in the result presented in table 3a judging by theory. The presented result reveals agricultural is not a significant factor that had led to the inclusive growth in Georgia between 1996 and 2016. The turnout of the result is surprising because it is assumed that the majority of the poor earn their living working in that sector, and any progress in the sector will be of high benefit to them. However, it may be that the growth in the sector within the period of study was not large enough to generate a significant effect on the income share of the poorest group. The second surprise is the negative effect of unemployment on the income share of the poorest group. There can be only one explanation to that. Employment pattern in Georgia showed job growth was mainly in the service sector between 1996 and 2016 (World Bank, 2018). As we know, the majority of the poorest people are always with low skill and may not fit well in the service sector where employment grew most.

Moving down to the industrial sector, the sector is the main significant source of inclusive growth between 1996 and 2016 in Georgia. There are two reasons to explain this. One, there may be a strong link between agriculture and industrial sector in Georgia so that growth in the industrial sector had a multiplier effect in the agricultural sector. Two, there may have been the migration of poor workers from the agricultural to the industrial sector due to industrial expansion. One of the two developments may have taken place, or the two may have happened together (Jeong, 2005; United Nations Development Programme (UNDP), 2014).

As we turn our attention to the richest group in table 3b, the service sector is the only factor that led to the significant increase in the income share of the richest 10 percent group in Georgia between 1996 and 2016. Growth in the industrial sector reduced the share of the richest people significantly. With the exception of human capital, all the factors which are anti-poor are pro-rich. For instance, when the industrial sector is growing the poor benefits and the rich loses and when the service sector is growing the rich benefits and the poor loses. This has an important implication for policy making because it shows that pursuing industrial growth policy will hurt the richest people, and pursuing service growth policy will hurt the poorest group.

Conclusion

Inclusive growth is the way forward to achieve sustainable development because it means almost everyone is going to be on board of the ship of development. To achieve this in developing countries is not going to be a mean task. It needs discipline and dedication on the part of every citizen because growth comes through hard work and dedication to duty. The study investigated the factors that led to inclusive growth in Georgia for other developing countries to learn. Sincerely, growth taking place in an inclusive manner is not an easy one going by the definition. This is why Georgia was the only country which has experienced it among the growing economies from the knowledge of the authors. Georgia needs to strengthen industrial growth policy to continue reaping the benefits of inclusive growth and reduction in inequality.

Reference

- Anand R.S, S Mishra, and SJ Peiris (2013) Inclusive Growth: Measurement and Determinants. IMF Working Paper 13/135
- Asian Development Bank (ADB, 2011) Framework of Inclusive Growth Indicators: Key Indicators for Asia and the Pacific. (Special Supplement).
- Baltagi B. (2001) A Companion to Theoretical Econometrics. Blackwell Publishing
350 Main Street, Malden, MA 02148-5018, USA 108 Cowley Road, Oxford OX4 1JF, UK
- Baum M.; A. Mshvidobadze and H. Tsuruoka (2015) Reducing Child Poverty in Georgia: A

Way Forward, United Nations Children's Fund

- Canlas B. (2016) Investing in Human Capital for Inclusive Growth: Focus on Higher Education. Philippine Institute for Development Studies, Discussion Paper No.2016-02.
- Chenery H., MS Ahuwalla, CLG Bell, LJH Duloy and R Jolly (1979) Redistribution with Growth. Published for the World Bank and the Institute of Development Studies University of Sussex Oxford University Press.
- Dursun G. and B Ogunleye. (2016) Economic Growth, Employment and Poverty Reduction: The Case of West African Countries. *American Journal of Economics* 6(1): 50-60
- Hirvay I (2011) Consultation on Conceptualizing Inclusive Growth, in United Nations Development Programme 2011ed, Conceptualizing Inclusive Growth. Discussion in a Two-Day Workshop on Inclusive Growth organized by United Nations Development Programme and India Planning Commission October 24-25. New Delhi, India
- Hull K (2009) Understanding the Relationship between Economic Growth, Employment and Poverty Reduction. In OECD (2009 ed) Promoting Pro-Poor Growth: Employment. Economic Growth, Employment and Poverty Reduction P69-94.
- Ibukun CO, AG Aremo (2016) Determinants of Inclusive Growth in Nigeria: An ARDL Approach. *American Journal of Economics*; 7(3): 97-109
- Islam R (2014) Human Capital and Inclusive Growth: The Challenge for Bangladesh. Working Paper on Vision 3030 and Framework for Economic making and Strategy formation in a Pluralistic Democracy, held in Dhaka, Senegal, 21-22 June 2014
- Jeong H. (2005) Assessment of Relationship between Growth and Inequality: Micro Evidence from Thailand. Institute of Economic Policy Research, Working Paper No.20
- Karnani A. (2011) Reducing Poverty through Employment. *Innovations* 6(2) p73-97
- Kuznets S. (1955) Economic Growth and Income Inequality. *The American Economic Review*, Vol.XLV(45) NO.1, P1-28.
- Nagaraj R. (2012) Growth, Inequality and Social Development in India: Is Inclusive Growth Possible? Development Pathways to Poverty Reduction, United Nations Research Institute for Social Development (UNRISD), Palgrave, Macmillan.
- Ogujiuba K and K Alehile (2011) Inclusive Growth in Nigeria: Policy Issues and Determinant
- Organisation for Economic Co-operation and Development (2012) Promoting Inclusive Growth: Challenges and Policies. Paris
- Organisation for Economic Co-operation and Development (OECD, 2014) All on Board Making Inclusive Growth Happen. www.oecd.org/publishing/corrigenda
- Organisation for Economic Co-operation and Development (OECD, 2009) Promoting Pro-Poor Growth Employment
- Ortiz I. and Cummins M. (2011) Global Inequality: Beyond the Bottom Billion. A Rapid Review of Income Distribution in 141 Countries. UNICEF Social and Economic Policy Working Paper, 2011
- Potts R. (2012) Social Protection in South Africa: Curing or Causing Poverty. Penn State of International Affairs, p.74-92
- Samans R, J Blanke, G Corringan. and M Drzenniek. (2015) Benchmarking Inclusive Growth and Development. World Economic Forum Discussion Paper 2017
- Sembene D. (2015) Poverty, Growth and Inequality in sub-Saharan Africa: Did the Walk Match the Talk under PRSP Approach? IMF Working Paper 15/122
- Son HH and N Kakwani (2004) Economic Growth and Poverty Reduction: Initial Conditions Matter. International poverty Centre, UNDP, Working paper number 2
- United Nations Development Programme (UNDP, 2014) Accelerating Inclusive Growth for Sustainable Human Development in Ethiopia. National Human Development Report, Addis Ababa, Ethiopia, 2014
- United Nations Development Programme (UNDP, 2011) Consultation on Conceptualizing Inclusive Growth. New Delhi, India 24-25 October, 2011
- World Bank (2018) World Bank Development Indicators
- Zhuang J and I Ali. (2010) Poverty, Inequality, and Inclusive Growth in Asia: Measurement, Policy Issues, and Country Studies. DOI:10.7135/UPO9780857288066.003

Capital Structure and Corporate Performance of Selected Firms on the Nigerian Stock Exchange

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Abstract

The capital structure of a firm is very important to the firm's successful operation. The objective of the study was to analyze the effects of Capital Structure on Corporate Performance of selected firms on the Nigerian Stock Exchange in Nigeria from 2011 to 2017. The study employed data from five multinational companies, using Micro Panel data as the estimated technique. Both the Random Effect Model and the Fixed Effect Model were estimated, and the Hausman effect was carried out to determine the appropriate model. The result shows that the effect of liquidity of the firms is negatively related to return on Asset (ROA). Hence, keeping funds in non-interest yielding form does not increase the ROA of the firms. Similarly, the short term debt financing (CLA) is negatively related to ROA. However, there is a positive relationship between long term debt financing and ROA. It noted that short term debt financing requires the payment of the debt in a short term, and this may not be convenient for the firms, and impair their performance. However, repaying long term debt may be convenient, and this may have a positive effect on the performance of the firms. Management of the quoted firms in Nigeria is strongly advised to increase the use of equity capital in financing to improve the earnings of their firms.

Keywords: Capital Structure, Firms, Nigerian Stock Exchange, Corporate Performance

JEL Classification: C23, L11, L22, G31

1. INTRODUCTION

Capital structure is one of the major decisions that have to be made by finance managers. According to Pandey (2010) defined capital structure as the so many ways of financing an organization, in order words, it is the proportionate relationship between debt and equity. Capital structure is the way in which a firm finances its operations and growth through the utilization of various sources of funds. The capacity of companies to carry out the needs of their stakeholders is closely associated with capital structure (San and Heng, 2011). The determination of the capital structure of a firm is a tough task, in the quest for optimal capital structure, a firm might have to issue so many securities in various mixes in order to have a combination that will maximize its

overall value (San and Heng, 2011). There is a close relationship between capital structure and corporate performance (Tian and Zeitun, 2007). The measurement of a firm's performance can be done through the utilization of variables which involve productivity, profitability, growth, or customer's satisfaction. These measures have some connections between them. Financial measurement has been found to be one of the tools which reveal the financial strengths, weaknesses, opportunities, and threats. According to Barbosa and Louri (2005), the financial measurements are return on investment (ROI), residual income (RI), earning per share (EPS), return on Asset (ROA), dividend yield, price earning yield, price-earnings ratio, growth in sales, market capitalization, etc.

Capital structure is a significant managerial decision because it influences the shareholder's return and risk as to the market value. According to Pandey, in making capital structure decisions, finance managers are expected to seek answers to the following questions: how to finance the investment project; does the way in which these investments projects are financed matter; how does financing affect the shareholders' risk, return and value; is there an optimum financing mix in terms of the maximum value to the firm's shareholders; can the optimum financing mix be determined in practice for a company; and what factors in practice should a company consider in designing its financing policy? The pioneer of this debate and studies on capital structure theory is Modigliani and Miller (1958). The general direction of the opinion of researchers is that a firm should determine and chose an optimal level of debt and equity combination based on the tradeoff between the cost and benefits of debt.

It is the general opinion among researchers that firms should plan their capital structure in a way that it will maximize its use of funds and to be able to adapt to changing situations. This study attempts to investigate the effect of capital structure and corporate finance on firms' performance in Nigeria using variables from the firms' post-consolidation published financial statement covering 2013 to 2017. Empirical studies on the relationship between firms' performance and capital structure have produced mixed results. Abor (2007) reports a positive relation between capital structure and performance over the period 1998-2002 in the Ghanaian firms. Masulis (1983), Jordan et al. (1998), Simerly and Li (2000), Frank and Goyal (2003), and Deping et al. (2011) showed that there is a positive relationship between the capital structure and performance of the firms.

Therefore, this study aims to determine the relationship between capital structure variables and corporate performances of some listed firms on the Nigerian Stock Exchange in Nigeria. Data for this study, equity, debt, and profit before tax, were from the published financial statements of the sampled firms was used for data analysis.

2. LITERATURE REVIEW

Studies on capital structure theory went back to as far as fifty decades ago when Modigliani and Miller (1958), published their work. They proved that, under certain assumptions (existence of a perfect market and the absence of taxes and transaction costs), costs of capital does not affect capital structure. Which means; debt in a firm's capital structure does not affect the firm's value. This theory is normally referred to as an irrelevant theory. Modigliani and Miller (1963) modified the irrelevant theory by presenting proof that cost of capital affect the capital structure and thus the value of the firm when the assumptions that there are no taxes or transaction cost were removed. They opined that borrowing gives a tax advantage, where the tax deducted from the interest results in tax shields, which in turn reduces the cost of borrowing and maximizes the firm performance (Miller, 1977). This requires the firm to make a trade-off between the cost of debt and the benefits of using debt. Several studies shed light on the specific characteristics of firms and industries that determine leverage ratios. These studies agree that leverage increases with fixed assets, non-debt tax shields, growth opportunities, and firm size and decreases with volatility, advertising expenditures, research and development expenditures, bankruptcy probability, profitability and uniqueness of the product. Bauer (2004), studied the effect of size, profitability, tangibility, growth opportunities, tax, non-debt tax shields, volatility, and industry classification on capital structure. In his study, he concluded that leverage is directly related to size, while leverage is inversely related to profitability. There was also a negative relationship between tangibility and leverage. It was discovered that leverage is positively correlated with tax, and it is negatively correlated with non-debt tax shields. No

relationship was found between leverage and volatility. The capital structure of a firm may evolve as a result of a deliberate plan by the firm's managers while at other times it is as a result of the combination of the situation in which the firm had to deal with in the past. Some firms may find it difficult accessing banks loan (Kamsvag, 2001) while some have retained enough earnings to undertake their investment opportunities without leading to debt financing (Anderson, et al., 2006). Some firms, in principle, do not want to undertake any debt (Anderson and Williamson, 2001). However, there are several other factors that have been considered by scholars as determinants of a firm's capital structure. Peterson and Rajan (1994) suggested that the business size, age, and cash flow are very relevant factors. Olowe (2011) argued that "in other to maximize the wealth of the shareholders', the factors a financial manager should consider in the choice of capital structure include: nature of the firm's assets, business risk, stability of sales, profitability, growth rates of the firm, taxes, control, management attitudes, lender and rating agency attitudes, conditions in the stock market, perceived undervaluation of equity shares in the Stock market, and reserve borrowing capacity".

Pandey (2010) noted that in practice capital structure decision involve considerations of assets, growth opportunities, financial flexibility, and operating strategy, debt, and non-debt tax shields, loan covenants, financial slack, sustainability and feasibility, control, marketability and timing, issue costs and capacity of raising funds.

Harris and Ravis (1990), summarizing a good number of empirical studies suggest that 'leverage increases with fixed assets, investment opportunities non-debt tax shields, and firm size and decreases with volatility, advertising expenditure, the probability of bankruptcy, profitability, and uniqueness of the product.' However, Wald (1999) observed that leverage decreases rather than increases with non-tax shields. Researchers have identified a number of factors as determinants of firm financial performance. Abbas et al. (2013) carried a study on determinants of firm's financial performance, using the textile sector of Pakistan for their study, and found that firm's performance is greatly affected by short – term leverage, size, risk, tax and non – debt tax shield. Safarova (2010), in his study on factors that determine firm performance of New Zealand listed companies discovered that size is the most important factor determining firm performance, followed by growth and leverage, while other factors such as tangibility, corporate governance, cash on hand and risk appeared to be marginally related to firm operating performance. Mirza and Javed (2013) carried out a study on the determinants of the financial performance of firms on Pakistan stock market and concluded that firms having well-governed ownership structure, capital structure, and proper risk management tend to have a better financial performance. Valentin (2012), based on his study of determinants of corporate financial performance, is of the opinion that a company's financial performance is directly influenced by its market position. He also identified risk and growth as important factors influencing a firm's financial performance. The size of the company can also have a positive effect on financial performance because the larger firms can use this advantage to get some financial benefits in business relations. (Marthur and Kenyon, 1997). According to Kyereboah – Coleman (2007), the basic motive behind any investment, made by the corporate sector, is to earn a profit. It is the major goals of a business organization to maximize shareholders' wealth and generate enough profits to continue the business and to grow further in the future. Mirza and Jared (2013). However, the performance of the firm is affected by multiple external and internal factors. While the internal factors are specific to each firm, the external factors can be the same for all or most of the firms. The external factors include market preferences and perceptions, country rules and regulations, and the economy of the country (Mirza and Jared, 2013). Corporate financial performance is directly influenced by its market position. Safarova (2010) study the factors that determine firm performance in New Zealand listed companies, eight factors were examined, namely intangibles, corporate governance, and cash on hand, leverage, firm-specific risk, growth and tangibility in relation to their influence on a firm's performance. He found that size is the most important determinant of firm performance, and other factors have marginal relationships. He, however, opined that this is due to various reasons surrounding the New Zealand financial market during the sample period, 1996 – 2007. Mirza and Javed (2013) studied the determinants of the financial performance of firms listed on the Pakistani Stock Market and found that firms having proper corporate governance structures and monitoring will be more profitable for shareholders. Their conclusion is that firms having well-governed ownership structure, capital structure, and proper risk management tend to have better financial performance. In view of the nature of financial institutions, researchers have classified determinants of bank performance into two – bank-specific (internal) and macroeconomic (external) factors (Al-Tamimi and Hasan, 2010; and Aburimem 2005). Internal factors are the

characteristics of individual banks which affect performance. These are factors that are influenced by internal bank management and board decisions. The external factors are the characteristics of the economy of the country where the bank operates, which are beyond the control of the bank and affect bank performance.

Fosu (2013), studied 257 South African listed firms using panel data to investigate the relationship between capital structure and firm performance, paying attention to the degree of competition, found out that financial leverage has a significant positive effect on the performance of the firms. In his study titled "Comparison of impact from capital structure to corporate performance between Chinese and European listed firms," he found out that capital structure has a significant negative effect on firm performance in China, whereas, significant positive effect in European countries before financial crisis happened in 2008.

David and Olorunfemi (2010) used panel data analysis to analyse the capital structure and corporate performance in Nigeria petroleum industry. It was found that a positive relationship exists between earning per share and leverage ratio on the one hand and a positive relationship between dividend per share and leverage ratio, on the other hand.

However, in a similar study carried out by Khan (2012) on 36 engineering sector firms in Pakistan, he was able to establish that financial leverage has an insignificant negative relationship with firm performance. He noted that firms in the engineering sector of Pakistan are mainly dependent on short term debt. In another research, Ogebe et al. (2013) investigated the impact of capital structure on firm performance in Nigeria for a period of 10years. They used the fixed effect regression estimation model to confirm that a negative relationship exists between performance and leverage of the firms. They also affirmed that the traditional capital structure theory is valid.

Following the review of empirical studies, the optimal capital structure of a firm is very paramount to its successful operation though these decisions differ from one firm to another. Some authors are of the view that a positive relationship exists between capital structure and the firm performance while some believe that there is a negative relationship. The need to carry out a study that focuses on the petroleum companies in Nigeria is fuelled by the dearth of literature on this area.

3. RESEARCH METHODOLOGY

Model ONE (Multinational Firms)

$$ROA_{it} = \alpha + \beta_1 LTA_{it} + \beta_2 CLA_{it} + \beta_3 Size_{it} + \beta_3 Liquidity_{it} + u_{it} \dots\dots\dots (3.1)$$

Where ROA is the return on Asset, LTA is long term debt financing, which is the ratio of the long term liability to total asset. CLA is the short term debt financing, the ratio of the short term liability to total asset, Size is the size of the firm, proxied by the log of the total asset, Liquidity is the ratio of the current asset to the current liability.

Model ONE (Indigenous Firms)

$$ROA_{it} = \alpha + \beta_1 LTA_{it} + \beta_2 CLA_{it} + \beta_2 Liquidity_{it} + u_{it} \dots\dots\dots (3.2)$$

All the variables are as previously defined. The variable, size, was removed because the number of the cross-sections is four.

Estimation Technique

The estimation technique used is Micro Panel data. It was estimated using the Random Effect Model. Both the Random Effect Model and the Fixed Effect Model were estimated, and the Hausman effect was used to determine the appropriate model, which was Random Effect Model.

4. RESULT DISCUSSION

4.1 Descriptive Statistics

Table 4.1 and Table 4.2 show that the mean of Return on Asset (ROA) for the multinational firms is 0.192422 while it is 0.037749 for indigenous firms. This shows that shareholders of multinational companies have more return on their investments than those of the indigenous firms. Similarly, the average liquidity of multinational companies is 0.9%, while it is 0.5% for indigenous firms. This also shows that the multinational firms were more liquid than the indigenous firms. In terms of size, however, the multinational firms are bigger in size with an average of 18.2% than the indigenous firms with an average of 17.4%. However, the CLA of the multinational firms is 0.44% while it is 0.4% for the indigenous firms, the LTA for the multinational firm is 0.25%, while it is 0.21% for the indigenous firms. This shows that the multinational firms finance their capital structure through short term debt financing and long term debt financing than their indigenous counterparts

Table 4.1: Descriptive Analysis of Individual Variables OF Selected Multinational Firms

	TTA	SIZE	ROA	LTA	LIQUIDITY	CLA
Mean	0.245384	18.54162	0.192422	0.245384	0.946369	0.438875
Median	0.240278	18.49956	0.209647	0.240278	0.909946	0.420867
Maximum	0.391090	18.94887	0.237596	0.391090	1.256453	0.713700
Minimum	0.104221	18.15861	0.046731	0.104221	0.807514	0.283034
Std. Dev.	0.099339	0.256369	0.061659	0.099339	0.151362	0.148748
Skewness	0.033520	0.141082	-1.860408	0.033520	1.057394	0.614967
Kurtosis	1.599642	1.998914	4.788530	1.599642	2.928220	2.183781
Jarque-Bera	2.866349	1.577609	24.85484	2.866349	6.529654	3.177638
Probability	0.238550	0.454388	0.000004	0.238550	0.038204	0.204167
Sum	8.588428	648.9568	6.734760	8.588428	33.12293	15.36064
Sum Sq. Dev.	0.335520	2.234652	0.129263	0.335520	0.778951	0.752288
Observations	35	35	35	35	35	35

Source: Computed by Author 2019

Table 4.2: Descriptive Analysis of Individual Variables of Selected Indigenous Firms

	ROA	SIZE	TTA	LTA	LIQUIDITY	CLA
Mean	0.037749	17.90517	0.638952	0.205628	0.534693	0.433323
Median	0.051292	17.97174	0.665333	0.203438	0.434003	0.439592
Maximum	0.085539	18.54424	0.784835	0.304886	1.310793	0.581397
Minimum	-0.039763	17.18754	0.480715	0.102693	0.271658	0.232597
Std. Dev.	0.037803	0.401713	0.096447	0.059329	0.334420	0.102223
Skewness	-0.975306	-0.268566	-0.267588	-0.082419	1.753190	-0.666224
Kurtosis	3.148208	2.609355	2.136630	2.637438	4.548159	2.997750
Jarque-Bera	4.464666	0.514633	1.203792	0.185060	17.14008	2.071328
Probability	0.107278	0.773123	0.547772	0.911622	0.000190	0.354991
Sum	1.056974	501.3447	17.89064	5.757586	14.97139	12.13306
Sum Sq. Dev.	0.038586	4.357086	0.251152	0.095037	3.019589	0.282140
Observations	28	28	28	28	28	28

Source: Computed by Author 2019

4.2 Effect of Capital Structure on Corporate Performance of Selected Multinational Firms

In order to estimate the capital structure on corporate performance of selected multinational firms, both the Random Effects and Fixed Effects models were analyzed. The results are presented in Table 4.3. In order to choose the appropriate model, the Hausman test was performed. The result of the Hausman test is presented in Table 4.3

Table 4.3: Comparing the Random Effects with the Fixed Effects

Dependent Variable: ROA	Fixed Effects Regression			
	Coefficient	Std. Error	t-Statistic	Prob.
Variable				

SIZE	0.672962	0.265244	2.537144	0.0175
LTA	0.362977	0.506233	0.717016	0.4798
LIQUIDITY	-0.599218	0.186458	-3.213688	0.0035
CLA	-1.575852	0.260462	-6.050217	0.0000
C	-11.11578	4.760933	-2.334790	0.0275
Dependent Variable: ROA	Random Effects Regression			
SIZE	0.672962	0.265244	2.537144	0.0166
LTA	0.362977	0.506233	0.717016	0.4789
LIQUIDITY	-0.599218	0.186458	-3.213688	0.0031
CLA	-1.575852	0.260462	-6.050217	0.0000
C	-11.11578	4.760933	-2.334790	0.0264

Source: Computed by Author 2019

4.2.1 Correlated Random Effects - Hausman Test

The Hausman Test is a test of the Null hypothesis, which says that the Random Effect model is the appropriate model. If the probability value of the test is significant, the null hypothesis is rejected, and that signifies that the fixed effect model is appropriate. Otherwise, the Random effect model is appropriate. Table 4.4 shows that the null hypothesis of Random model cannot be rejected because the probability value is not significant.

Table 4.4: Correlated Random Effects - Hausman Test

Equation: Untitled			
Test cross-section random effects			
Test Summary	Chi-Sq. Statistic	Chi-Sq. d.f.	Prob.
Cross-section random	0.000000	4	1.0000

Source: Computed by Author 2019

4.2.2 Result of the Random Model

Table 4.5 shows that variables that significantly influence Return on Asset are the size of the firms, short term debt financing, and liquidity of the firms, while long term debt financing is not significant. The result shows that the size of the firms is positively related with ROA. It shows that the bigger the firms, the bigger are the return on assets. This can be explained such that a bigger firm is about to produce on a larger scale, at a lower average cost, and sell at a cheaper price than the smaller ones can do. Hence, she will be able to make more return. However, the results on the effect of liquidity of the firms are negatively related to ROA. This is not unexpected because the firms are not banks. The firms are production firms. The more liquid they are, the less will be the level of investment, and the less will the ROA. Similarly, the short term debt financing (CLA) is negatively related to ROA. The reason for this may be because of the high-interest rate involved in debt servicing in the country.

Table 4.5: Capital Structure and Corporate Performance of Selected Multinational Firms

Variable	Coefficient	Std. Error	t-Statistic	Prob.
SIZE	0.672962**	0.265244	2.537144	0.0166
LTA	0.362977	0.506233	0.717016	0.4789
LIQUIDITY	-0.599218***	0.186458	-3.213688	0.0031
CLA	-1.575852***	0.260462	-6.050217	0.0000
C	-11.11578**	4.760933	-2.334790	0.0264
F-statistic	47.90781***	R-squared	0.864640	
Prob(F-statistic)	0.000000			

*** indicates significance at 1%, ** indicates significance at 5%

Source: Computed by Author 2019

4.3 Effect of Capital Structure on Corporate Performance of Selected Indigenous Firms

In order to estimate the capital structure on corporate performance of selected multinational firms, both the Random Effects and Fixed Effects models were analyzed. The results are presented in Table 4.6. In order to choose the appropriate model, Hausman test was performed. The result of the Hausman test is presented in Table 4.7

Table 4.6: Comparing the Random Effects with the Fixed Effects

Dependent Variable: ROA		Fixed Effects Regression			
Variable	Coefficient	Std. Error	t-Statistic	Prob.	
SIZE	-0.023259	0.066312	-0.350753	0.7294	
LTA	0.401544	0.188049	2.135315	0.0453	
LIQUIDITY	-0.191408	0.128697	-1.487268	0.1525	
CLA	-0.620433	0.280789	-2.209607	0.0390	
C	0.391011	0.034060	11.47996	0.0000	
Dependent Variable: ROA		Random Effects Regression			
LTA	0.390611	0.181534	2.151721	0.0417	
LIQUIDITY	-0.233060	0.048560	-4.799440	0.0001	
CLA	-0.713016	0.093738	-7.606469	0.0000	
C	0.391011	0.036412	10.73851	0.0000	

Source: Computed by Author 2019

4.3.1 Correlated Random Effects - Hausman Test

The Hausman test also shows that the appropriate model to be used in this analysis is the Random Effect model. This is because of the insignificant value of the probability value of the Hausman test.

Table 4.7: Correlated Random Effects - Hausman Test

Equation: Untitled			
Test cross-section random effects			
Test Summary	Chi-Sq. Statistic	Chi-Sq. d.f.	Prob.
Cross-section random	0.000000	3	1.0000

Source: Computed by Author 2019

4.3.2 Result of the Random Model

Table 4.8 shows that all the variables significantly influence Return on Asset, in other words, short term debt financing, long term debt financing, and liquidity of the firms. The result shows that the result on the effect of liquidity of the firms is negatively related to ROA. This is similar to the situation with the multinational firms. The firms are production firms. Hence, keeping funds in non-interest yielding form does not increase the ROA of the firms. Similarly, the short term debt financing (CLA) is negatively related to ROA. However, there is positive relationship between long term debt financing and ROA. This is against the situation with that of the multinational firms. One explanation for this is that short term debt financing requires the payment of the debt in a short term, and this may not be convenient for the firms, and impair their performance. However, repaying long term debt may be convenient, and this may have a positive effect on the performance of the firms.

Table 4.5: Effect of Capital Structure on Corporate Performance of Selected Multinational Firms

Variable	Coefficient	Std. Error	t-Statistic	Prob.
LTA	0.390611**	0.181534	2.151721	0.0417
LIQUIDITY	-0.233060***	0.048560	-4.799440	0.0001
CLA	-0.713016***	0.093738	-7.606469	0.0000

C	0.391011***	0.036412	10.73851	0.0000
F-statistic	44.25851***	R-squared	0.846915	
Prob(F-statistic)	0.000000			

*** indicates significance at 1%, ** indicates significance at 5%

Source: Computed by Author 2019

5. CONCLUSIONS AND RECOMMENDATIONS

The study empirically analyzed the effect of capital structure on corporate performance of selected firms on the Nigerian Stock Exchange. The study confirms the validity of the traditional theory of capital structure. Contrary to the traditional theory, which posits that a positive relationship exists between leverage and firm's performance, this study found that a negative relationship exists between leverage and firm performance. This study also found that a positive relationship exists between the firm's size and firm performance as well as between tax and firm performance; the lagged return on asset also had a positive relationship with firm performance. The implication is that the size, tax, and the lagged return on an asset can be considered to have a positive influence on the performance of a firm. Since leverage has a negative effect on the firm's performance, it is therefore recommended for the firms to rely more on equity financing as a way of raising funds for their business. They should reduce their borrowing operations which could make them go bankrupt. Therefore, to improve corporate performance of firms in Nigeria, the following were recommended:

1. The management of firms should consider the use of more debt in their capital structure mix as this will reduce the overall cost of capital as a result of its tax advantage. Moreover, increase firm financial performance;
2. The management of the quoted firms in Nigeria should increase the use of equity capital in financing to improve earnings of their firms; and
3. Investors of quoted firms in Nigeria should also consider the capital structure of any firm before investing in them as the strength of a firm's capital mix determines the level of returns.

References

- Abbas, A., Bashir, Z. Manzuor, S. and Akram, M.N. (2013), "Determinants of firm's financial performance: an empirical study on textile sector of Pakistan," *Business and Economic Research*, Vol. 3, No 2, pp 77 -86.
- Abor, J. (2007), "Debt policy and performance of SMEs: evidence from Ghanaian and South Africa firms," *Journal of Risk and Finance*, Vol. 8, pp 364 -79.
- Aburime, U. (2005) Determinants of bank profitability: company-level evidence from Nigeria. University of Nigeria, Enugu Campus.
- David, D. and Olorunfemi S(2010): " Capital Structure and Corporate Performance in Nigeria" *Journal of Mathematics and Statistics*. Vol. 6 no 2, Pp 168 -173
- Al-Tamimi, H., and Hassan, A. (2010) Factors Influencing Performance of the UAE Islamic and Conventional National Banks. Department of Accounting, Finance and Economics, College of Business Administration, University of Sharjah.
- Anderson, M and Williamsson, M (2001), Kapitalstruktur SMEs, Master Thesis, Jonkoping "Jonkoping International Business School, Jonkoping university.
- Barbosa, N, and Louri, H. (2005):"Corporate Performance: Does Ownership Matter? A Comparison of Foreign- and Domestic-Owned Firms in Greece and Portugal". *Review of Industrial Organization*, Vol 27 No.1, Pp73-102.
- Bauer, P. (2004), Determinants of capital structure: empirical evidence from Czech, *Journal of Economics and Finance*, Vol 54, pp 1 – 21.
- Deping, C. and Yongsheng C. (2011). "The relationship research between the corporate performance, ownership concentration and equity balance degree: empirical studies of small and medium-sized enterprise from 2007 to 2009". *Journal of Accounting Research*. Vol.1. Pp 38-43.
- Fosu, S. (2013), "Capital structure, product market. Competition and firm performance: evidence from South Africa," University of Leicester, UK, Working paper No 13/11.
- Frank, Z.M and Goyal, V.K (2003), "Testing the pecking order theory of capital structure," *Journal of Financial Economics*, Vol. 67, pp 217 -248.

- Harris, M. and Raviv, A (1990), "Capital Structure and the informational role of debt", *Journal of Finance* Vol 45, pp 321 – 349
- Jordan, J; Lowe, J. and Taylor, P. (1998). 'Strategy and financial policy in UK small firms'. *Journal of Business Finance and Accounting*, January/March. Pp 1–27.
- Kamsvag, C. (2001). Företagochfinansiering: problem ochmöjligheterförsmåföretag. Arvika: Företagarnasriks organization: FR
- Khan, A (2012): "The relationship of capital structure decisions with firm performance: a study of the engineering sector of Pakistan". *International Journal of Accounting and Financial Reporting*. Vol. 2, No 1 Pp245 - 262 13.
- Kyereboah – Coleman, A. (2007), "Corporate governance and firm performance in Africa: A Dynamic panel data analysis", *International conference on corporate governance in emerging markets*. Sabanci University, Istanbul, Turkey.
- Marthur, S.S. and Kenyan, A. (1997), *Creating Value: Shaping Tomorrow's Business*, Butterworth Heinemann, Oxford Auckland, Boston.
- Masulis, R. W. (1983), "the Impact of capital structure change on firm's value: some Estimates". *The Journal of Finance*. Vol. 38. No 1. Pp 107–126.
- Miller, M. H. (1977), "Debt and Taxes." *Journal of Finance*, 32 261–275.
- Mirza, S.A and Javed, A. (2013), "Determinants of financial performance of a firm: case of Pakistani Stock Market", *Journal of Economics and International Finance*, Vol. 5, No, pp 43 -52.
- Modigliani, F and Miller, M.H (1958). "The cost of capital, corporate finance and theory of investment". *America Economic Review*, Vol. 48. pp 261 -97
- Modigliani, F., and M. H. Miller. (1963), "Corporate income taxes and the cost of capital: a correction." *American Economic Review*, Vol 53 433–443.
- Ogebe, O, Ogebe J and Alewi K (2013): "The Impact of capital structure on firm's performance in Nigeria". *MPRA Paper* No. 46173
- Olowe, R.A (2011), *Financial Management: concepts, financial system and business Frame*, Third Edition, Ibadan University Press, Ibadan Nigeria.
- Pandey, I.M (2010). *Financial Management*, Tenth Edition, Vikas Publishing Home PVT Ltd, New Delhi.
- Peterson, M.A and Rojan, R.G (1994), "The benefits of lending relationship: evidence from small business data", *Journal of Finance*, Vol 49, No 1, pp 3-37.
- Safarova, Y. (2010), "Factors that determine firm performance of New Zealand listed companies", Dissertation submitted to Auckland University of Technology.
- San, O. T. and Heng, T. B. (2011), "Capital structure and corporate performance of Malaysian construction sector". *International Journal of Humanities and Social Science*, Vol 1, No 2, pp 28 36.
- Tian, C. G. and Zeitun, R. (2007), "Capital structure and corporate performance: evidence from Jordan". *Accounting, Business and Finance Journal*. Vol. 1. Pp 40 - 53.
- Valentin, C., (2012), "Determinants of corporate financial performance", Retrieved online from www.dafi.asce.ro/revista/6/costea_valentin.pdf on 13th May, 2014.
- Wald, J.K (1999), "How firm characteristics affect capital structure: an international comparison", *Journal of Financial Research*, Vol 22, No 2, pp 161 – 187.

Appraisal of Capital-Intensive Investments Upon Effectiveness to Business Ecosystem

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Abstract

The complexity of decision-making for capital intensive investments addressed to a variety of stakeholders with different expectations and to many business and financial risks and uncertainties. There are many cases where decision-makers and governmental authorities do not clearly distinguish between the investment likelihood alternative scenarios and the effectiveness of the investment to the business ecosystem. This especially applies to decisions regarding the implementation of capital-intensive projects where large amounts of capital are reserved, which is a major concern in the planning and business development process. Therefore, the appraisal of the investment effectiveness to business ecosystem into the project lifetime is very critical to support decision-makers. The key objective of the paper is to define and quantify the overall contribution of the capital-intensive project to a business ecosystem during its lifecycle. The paper provides a compact and applicable methodological framework providing quantitative results in terms of the overall income generated into the project life cycle. According to a deterministic approach, the key variables based on the project financial viability and likelihood scenarios are presented. The numerical application deals with the development of a new logistic center in Greece, stimulating new business opportunities by establishing a new freight transportation corridor from Black Sea to Southeast Mediterranean.

Keywords: Business Ecosystem, Capital Intensive Investments, Investment Management, Effective Management

1. Introduction

Investing in capital intensive projects is a key driver in strengthening the national economy and enhancing the nation's productivity, as it creates economic benefits and additional income. In the national level, the assets portfolio is helping to enhance productivity and competitiveness through the funding of significant infrastructure projects and a comprehensive regulatory reform agenda (Dimitriou, 2017; Cascetta, 2015). However, these decisions made in conditions under uncertainty. The key question in such decisions is if new capital-intensive transport projects affect the business ecosystem.

Governments and decision-makers promote capital intensive investments projects in order to achieve economic growth. Arguments for significantly boosting investments especially in capital intensive infrastructures, in order to achieve economic growth and business ecosystem development based on high returns to investment in capital scarce environments, and the pressing deficiencies in these areas. Especially for transport infrastructures strategy development is also about what decision-makers and stakeholders expect what to achieve and therefore influence other can have over the transport infrastructure's challenges. Transport enterprises development is a decision-making process that involves multiple stakeholders, such as Government and governmental authorities, investors, and operators (Sartzetaki, 2019).

There is a wide range of assessments in the literature that highlight the importance of capital-intensive projects impact towards business development and economic growth (Farhard, 2015; Miller et al., 2015; Mackie et al., 2014). Especially large capital-intensive transportation infrastructure systems attract businesses and increase the positive externalities/benefits gained by industries, which further stimulate competition among industries and businesses and increase the economic competitiveness of a region (Hong, 2007). There are many researches analyzing and demonstrating the impact to economy empirically highlighting the positive effect of public infrastructure (Weisbord, 2008; Romb et al., 2007; Calderon et al., 2015).

The key question to evaluate capital intensive investments is to quantify the impact of the investment to the business ecosystem. The proposed analysis provides decision-makers with a tool to assess the overall value of a project, including the financial viability and the investment 's likely productivity and effectiveness on the business ecosystem. The investment's likely productivity and effectiveness is the equilibrium point between the financial sustainability and contribution of the investment to the economic business system.

2. Method

2.1 Overall effectiveness to business ecosystem appraisal framework

The key question to evaluate the capital-intensive project economic impact to the business ecosystem is to quantify the overall value of the new investment. This economic analysis provides decision-makers with a way of assessing the overall value of a project, including the financial viability and the investment 's likely productivity and effectiveness. The investment's likely productivity and effectiveness is the equilibrium point between financial sustainability and contribution to the economic system. The equilibrium point is the condition in which the two forces, the financial outputs of the project in terms of cost and revenues on the one hand; and the return or the contribution in the regional economy are balanced. In other words, to review if the level of project outputs provides equal or at least equal benefits in an economic system (Dimitriou and Sartzetaki, 2019).

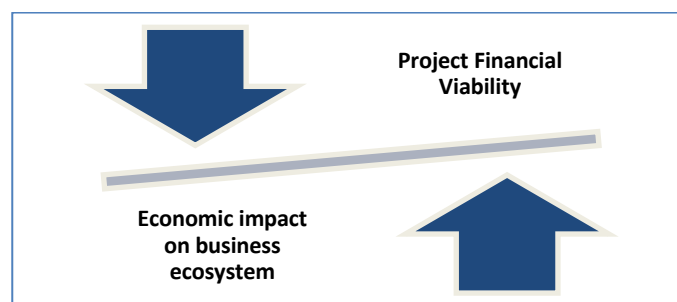


Figure 1: Decision forces of financial Viability and Impact on Business Ecosystem (Dimitriou, 2017).

Financial viability of the project based on the long-term estimations of the project development to meet the project financing requirements and reduce the business risks. The financial viability of a transport infrastructure project results from its ability to meet its financial commitments and guarantee that its recurrent costs will be covered by multiple stakeholders (Dimitriou and Sartzetaki, 2017a). The most critical items in this analysis are the line of cost (based on budget and cash flow analysis) and the expected revenues (based on business plan).

The equilibrium of project financial viability and impact on the business ecosystem is very critical to support decisions and provide information to stakeholders. In other words, the level of income generated by the project activity that distributed in the business ecosystem is a very powerful variable for the stakeholders to support decisions about the project development.

2.2 Project impact to business ecosystem footprint

The conceptual basis for the assessment of the impact to the business ecosystem due to capital intensive investments is Input-Output (I-O). I-O analysis has been used widely to investigate the interlinkages of economic sectors in economic systems (Dimitriou et al., 2017). I-O is a business system consisting of (a) a subsystem with several interdependent internal components and (b) its external environment (Reisa et al., 2009). Internal interdependence implies that the outputs of some components are inputs to others, and external components may provide primary input to these interdependent components.

The objective of the I-O analysis is to evaluate the impact of exogenous changes in the external components, such a capital-intensive investment on the interdependent components of the business ecosystem. The framework can be used as a tool to assess structural changes a business ecosystem, in terms of linkages between economic sectors when an exogenous change such a capital-intensive investment (Dimitriou et al., 2018).

I-O analysis based on the concept of multipliers evaluates how an economy may react to specific policies or external shocks or changes such an investment in a logistic center. Thus I-O tables provide a complete picture of the flows of products and services in an economic system for a given year, illustrating the relationship between producers and consumers and the exchange of goods and services among economic sectors. In other words, these tables illustrate all monetary market transactions between various businesses and between businesses and final demand sectors (i.e., consumers, government, investment, exports, etc.). Thus, they can be used to construct disaggregated multipliers in order to estimate apart from the direct impacts of a particular investment also its indirect and induced impacts (Dimitriou and Sartzetaki, 2018).

The impacts due to the capital-intensive project investment are divided into four distinct categories: direct, indirect, induced, and catalytic. Direct effects are associated with the businesses directly involved in the project. In transportation infrastructure projects, direct effects are related to the employment and GDP generated by firms which will construct and operate the transportation infrastructure. Indirect effects occur in the wider supply-chain as firms directly involved in constructing and operating the transportation infrastructure purchase goods and services from nation-based suppliers, in turn generating output, profits, and employment among suppliers. Induced effects arise because the direct and indirect effects mean additional wages are paid to workers, some of which are used to purchase goods and services for their own consumption. This spending supports additional businesses (and so additional output and jobs) in the industries that supply these purchases. Induced effects result from the employees of the transportation infrastructure purchasing goods and services at a household level (Dimitriou et al., 2015).

Concerning catalytic impacts, in many cases, the objective of large transport infrastructure investments is to improve the accessibility of a given region by reducing travel time or increasing the potential to travel. Accessibility can be measured as the quantity of economic or social activities that can be reached using the transport system. Improvement in accessibility will increase the market size for trade, manufacturing, tourism, and/or labour, leading to increased competition and/or centralization (Dimitriou and Sartzetaki, 2019). In such a context, the evaluation of these infrastructures should involve the estimations of the changes in the interregional trade and the regions' economic development (Owyong et al., 2001).

The estimation results of the I-O model based on a $n \times n$ matrix of multipliers that embodies n production sectors per unit of final consumption of commodities produced by n industry sectors that can also provide the indirect and induced effects by means of the Leontief matrix (TRB, 2008).

In the first step, we estimate the vector X , which expresses the total direct, indirect, and induced impact of the project on employment. This is accomplished with the Leontief inverse matrix. The standard representation of the I-O model in matrix form is defined as follows:

$$X_e = (I - A)^{-1} Y_e \quad (1)$$

Where I is the $n \times n$ unit matrix; X_e is the vector of final production of the economy; Y_e is the vector of final demand of the economy; A is $n \times n$ matrix of technological coefficients. A technical coefficient a_{ij} is defined as the amount of production of sector i that sector j requires to produce one unit of output. ; $(I - A)^{-1}$ is the $n \times n$ matrix of input–output multipliers, or the Leontief inverse. The rows and columns of the Leontief inverse matrix are the sectors of the economy and each element b_{ij} of this matrix shows the total required increase in the production of sector i to meet an increase of one unit in the final demand of sector j . The sum of all the elements of the j column of the Leontief inverse matrix gives the output multiplier of the sector j . The change in income using the direct coefficient w that expresses the wages per unit of sectoral jobs is estimated.

$$X_i = w(I - A)^{-1} Y_e \quad (2)$$

where X_i is the vector that expresses the direct, indirect, and induced impact of the project on the total income.

2.3 Financial viability framework assessment

Financial viability, in terms of cost and revenues, evaluated through a detailed cash-flow analysis based on alternative financing and demand scenarios to investigate the breakeven point for the payback period. Based on these demand and financing scenarios developed, project cost future flows for the alternative scenarios calculated as:

$$CP_t = (1 + a) \times CP_{t-1} \quad (3)$$

Where:

CP_t = Logistic center Project Cost in year t

CP_0 = Initial investment cost

t = year of operation (max $t = 30$)

a = share of CP , constant value (20% for the operation period).

After calculating future investment cost fluctuations, the next step is to calculate the future revenues fluctuations to

investigate the optimal financing scenario for the project using the internal rate of return method.

2.3 General Added Value to the business ecosystem during the operational period

Based on the calculation of the direct, indirect, and induced effects, the total value added to the business ecosystem from the development of the logistic center GA is estimated for project operation period, as:

$$GA_t = GD_0 + aGD_{t-1} + GI_0 + aGI_{t-1} + GM_0 + aGM_{t-1} \quad (4)$$

GD_0 = Direct income generated due to project in $t=0$

a = freight demand annual growth rate

GI_0 = Indirect income generated due to project operation in $t=0$ based on I-O analysis framework

GI_t = Indirect income generated due to project operation in $t=0$ based on I-O analysis framework in year t

GM_0 = Induced income generated due to project operation in $t=0$ based on I-O analysis framework in year t

GM_t = Induced income generated due to project operation in year t based on I-O analysis framework in year t

3. Case study 1 -Application

Greece is part of the EU's Orient/East-Med Corridor that connects the maritime interfaces of the North, Baltic, Black Sea and the Mediterranean. In this environment, Greece's geographical position as a gateway between East and West render it highly attractive for investments in logistics and transport to take advantage of these increasing trade flows in an efficient and cost-effective manner. The geographical position of North Greek port allows the offering of competitive sea freight cost for transported containers, while offering access to a set of growing economies in the broader region.

Region of Eastern Macedonia and Thrace [REM-T] (Anatoliki Makedonia - Thraki) is situated along the crossroads of Europe and Asia and is predominantly an agricultural area. It is a border region which gradually transforms into a gateway of the country and the European Union. The structure of the production model of the region displays concentration trends in lowland areas, large agricultural holdings, and monocultures where the production is done vertically, and urban centers as centers of trade and services. East Macedonia and Thrace have invested strategically to a large extent on inclusion in the International transport networks (Dimitriou and Sartzetaki, 2017b).

3.1 Key features of the project

The framework applied in a strategic logistics hub in North Greece. The new capital-intensive investment project aims to optimize the transportation system, to enhance the performance of logistics and multimodal transport supply chains, and transport development (Sartzetaki and Dimitriou, 2019a). The investment will satisfy the overall need for developing a logistics hub in North Greece to support multimodal transportation between Greece and Bulgaria. The development of the transit hub includes infrastructure development of integrated management through multimodal land (road and rail) with international ports in the region. This project will further strengthen the country's role, as it will relate to the port of Burgas, enabling this way Greece to become an international freight hub for Central and Eastern Europe.



Figure 2. Strategic location of the logistic center (Dimitriou and Sartzetaki, 2019)

3.2 Demand and Financing Scenarios determination

Freight demand scenarios have been developed considering the potential for regional economic development in the catchment area. The scenarios are based on the regional and national economic conditions, transport network development perspectives, and other external factors.

The alternative demand scenarios created for the development of a logistic center based on many different parameters such as:

- rail transport network development
- the complementarity of the transport network
- intermodal transport network enhancement
- national and regional economic growth features

The six (6) alternative scenarios were developed based on alternative prospects for future economic and operational demand options in the freight zone, with two (2) scenarios per level of freight demand traffic considering the higher demand levels in last five years.



Figure 3. Scenarios development concept for annual freight demand growth rates in logistic centre catchment area

Whether driven by revenue growth, improved performance, better cost management or increased competitive advantage, it is critical for viable transport infrastructure to identifying both the long-term benefits and impact on the overall business, services and strategy and develop different financing scenarios (Dimitriou and Sartzetaki, 2017a).

Twelve different scenarios with different interest rates representing different ownership structure, from a typical public financing project to a typical private investment project. The scenarios in group A represent financial and business characteristics of a public project; group B includes a mixture of public funds and partial support from governmental investment organisations; group C are mainly supported by governmental investment organisations; and group D are mainly financed by the private sector.

The determination of alternative financing scenarios is analytically depicted in Table 1 for scenarios A, B, C and D. Scenarios A1, A2, A, B1, C3, D1, D2, D3 are in the high-risk area, the scenarios B2, B3, C1, C2 are in the medium-risk area.

Table 1: Project financing scenarios development

Scenario <i>Acronym</i>	Interest rate (%) <i>30 years average</i>	Investing Conditions <i>Investing Scheme and Conditions</i>
A1		-- Public financing schemes
A2	1.5-2.5	-- Implemented by Governmental entities
A3		
B1		-- Public financing schemes
B2	3.0-4.0	-- Implemented by Governmental entities
B3		
C1		-- PPP financing schemes
C2	4.5-5.0	-- Implemented by Concessioner's entities
C3		
D1		-- PPP financing schemes
D2	6.0-7.0	-- Implemented by Concessioner's entities
D3		

3. Results and Discussion

The expected average annual net cash flow during the operational period were calculated for each combination of the 12 financial scenarios A1, up to D3 and all 6 S1 development scenarios, up to S6 as analytically depicted in Table 2.

Table 2: Average annual net cash inflow during the single operation period

Financing scenarios	Demand scenarios					
	S1	S2	S3	S4	S5	S6
A1	552,084	1,104,168	1,150,333	1,725,500	1,955,567	2,415,700
A2	581,017	1,162,035	1,222,667	1,834,000	2,078,533	2,567,600
A3	609,951	1,219,901	1,295,000	1,942,500	2,201,500	2,719,500
B1	638,884	1,277,768	1,367,333	2,051,000	2,324,467	2,871,400
B2	667,817	1,335,635	1,439,667	2,159,500	2,447,433	3,023,300
B3	696,751	1,393,501	1,512,000	2,268,000	2,570,400	3,175,200
C1	725,684	1,451,368	1,584,333	2,376,500	2,693,367	3,327,100
C2	754,617	1,509,235	1,656,667	2,485,000	2,816,333	3,479,000
C3	783,551	1,567,101	1,729,000	2,593,500	2,939,300	3,630,900
D1	812,484	1,624,968	1,801,333	2,702,000	3,062,267	3,782,800
D2	870,351	1,740,701	1,946,000	2,919,000	3,308,200	4,086,600
D3	928,217	1,856,435	2,090,667	3,136,000	3,554,133	4,390,400

The minimum average net cash inflow to ensure the project financial viability for the most likelihood scenarios S3, S4 ranges from €1.1 m to €3.1 m. Considering the uncertainties in future estimates of the financial parameters and the characteristics of the investment involving a payback period for the project over 20 years, the most likely demand and financing scenarios for the payback period are depicted analytically in following table 3.

Table 3. Payback period for the different scenarios of the project development.

Financing scenarios	Demand scenarios					
	S1	S2	S3	S4	S5	S6
A1	23	21	29	13	11	11
A2	25	22	28	15	12	12
A3	-	23	27	17	13	13
B1	-	25	26	19	14	14
B2	-	-	25	20	15	15
B3	-	-	-	22	16	17
C1	-	-	-	24	20	19
C2	-	-	-	25	22	21
C3	-	-	-	-	25	23
D1	-	-	-	-	-	25
D2	-	-	-	-	-	28
D3	-	-	-	-	-	30

Scenarios	Demand					
	Low		Medium		High	
Financing	S1	S2	S3	S4	S5	S5
A1	33	31	39	23	21	21
A2	35	32	38	25	22	22
A3	-	33	37	27	23	23
B1	-	35	36	29	24	24
B2	-	-	35	30	25	25
B3	-	-	-	32	26	27
C1	-	-	-	34	30	29
C2	-	-	-	35	32	31
C3	-	-	-	-	35	33
D1	-	-	-	-	-	35
D2	-	-	-	-	-	38
D3	-	-	-	-	-	40

Given the uncertainties in demand freight, demand scenarios S3 and S4 are selected as the likelihood scenarios for the investment. Scenarios S1,S2,S5,S5 implicate significant risks. Therefore, the investment implementation should be designed based on achieving these goals.

Considering the uncertainties in financial parameters forecasts and the characteristics of the project that entails a payback period of over 20 years, the scenarios B1, B2, C1, C2 are selected as the most likelihood scenarios.

It is noteworthy that scenarios B2 and B3 require financial contribution from international free-floating funders, such as EIB, etc. C1 and C2 scenarios involve private sector participation through concession agreements and PPPs.

For the most likelihood scenarios, the interest rate on the capital fluctuates between 3.5% and 5.0% f Measures and targets beyond these limits should be carefully considered in terms of stimulating financial risks, based on current conditions and practices in project financing schemes and projects.

Applying IO modelling, the direct, indirect, and induced total impact created by the project on the annual output (in million €) calculated. The calculations are based on Eurostat's Input-Output national tables for the year 2015. The new logistic center results in an annual increase of the total income ranging from €6 m to €17m for scenario S1, from €6m to €20m for scenario S2, from €6m to €20m for scenario S3, from €6m to €47m for scenario S4, from €6m to €46m for scenario S5, from €6m to €48m for scenario S6, for the entire period under consideration as depicted in figure 4.

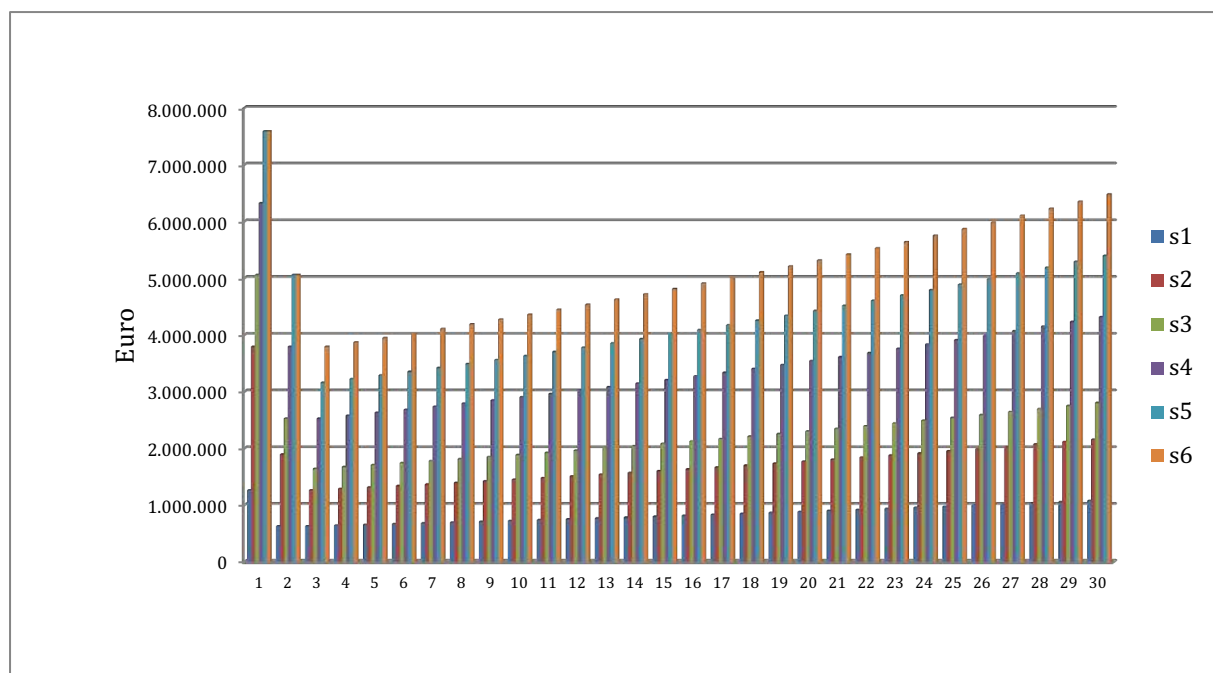


Figure 4. General added value to the business ecosystem due to logistic center development

During the construction period, the implementation of the center will contribute to the region's business ecosystem from € 1.2m to € 7.5m for the first year of construction while for the second from € 630m for the S1 scenario to € 5m for the scenario S6.

From the first year of operation, the total impact on the business ecosystem estimated from € 630,000 for the scenario S1 to € 6.4m for the scenario S6. For the most feasible scenarios S3 and S4, the impact to business ecosystem in the first year of operation is estimated at € 1.6 m and € 2.5 million respectively, with a forecast to target at € 2.8 m (fixed annual values) and € 4.3m (fixed annual values) in the last year of the project lifecycle.

4. Conclusions

The estimated results provide a strong evidence of the existence of long-run cointegrating relationship among the effectiveness of a capital-intensive investment to the business ecosystem during its lifecycle. Conventional wisdom is to present a quantitative analysis framework providing key messages to decision-makers on financial an economic impact generated by a capital intensive project supporting decisions and feeding scenarios of offsetting future benefits.

The analysis framework based on I-O methodology aims to evaluate the impact of economic growth in terms of new income distributed to the business ecosystem.

Application results highlight information to compare with other similar cases and highlight key messages to decision-makers, stakeholders, and investors. The results indicate that each decision for a capital-intensive project should be associated with targets and measures to stimulate economic impact, in a way that all sectors of business ecosystem take the benefits of the capital-intensive project development during its lifecycle.

The methodology framework adopted is a tool to support stakeholders, decision-makers, planners, and managers in the investment strategic planning process for capital intensive projects, based on the most likelihood scenarios development. The managerial implications provided to industry based on the above methodology framework is to monitor and improve efficiency in such projects like a logistic center, as well as effectiveness to the business ecosystem.

References

- Calderón César , Enrique Moral-Benito, Luis Servén (2015). *Is Infrastructure capital productive? A dynamic heterogeneous approach*, *J. Appl. Econ.*, 30 (2) (2015), pp. 177-198
- Cascetta E. (2015). *A new look at planning and designing transportation systems: A decision-making model based on cognitive rationality, stakeholder engagement and quantitative methods* *Transp. Policy*, 38 (2015), pp. 27–39
- Dimitriou D., Mourmouris J., Sartzetaki M., (2017). *Quantification of the air transport industry socio-economic impact on regions heavily depended on tourism*, *Transportation Research Procedia*, 2017. 25: 5242-5254
- Dimitriou D., Sartzetaki M. (2018). *Assessing air transport socioeconomic footprint*, *International Journal of Transportation Science and Technology*, 7(4), pp. 283-290
- Dimitriou D., Mourmouris J., Sartzetaki M., (2018). *Maritime ports economic effect on regional development: Estimations for the major maritime ports in Greece*, *International Journal of Decision Support Systems*, 2(4), pp.210 – 220
- Dimitriou D. and Sartzetaki M., (2017a). *Evaluation framework for investments in rail infrastructure projects*, *International Journal of Transport and Vehicle Engineering (IJTVE)*, 11 (5), pp. 1308-1312.
- Dimitriou D. and Sartzetaki M., (2017b). *Decision Framework for developing transport logistics hub*, *International Journal of Engineering Sciences & Research Technology (IJERT)*, Vol 6(1), pp 314-322.
- Dimitriou D., Mourmouris J., Sartzetaki M., (2015). *Economic impact assessment of mega infrastructure projects*, *International Journal of Applied Economics (RAEC)*, Vol. 47(40), pp. 4310-4322.
- Dimitriou D., Sartzetaki M. (2019). *"Appraisal of the effects, on regional economy by investments in transportation projects"*, *Transportation Research Board (TRB) 98th Annual Meeting*, January 13-17, Washington, DC, TRB Annual Meeting proceeding online.
- Dimitriou D. (2017) *'Quantitative evaluation taxonomy for transport infrastructure projects*, *International Journal of Research Science and Management*, 2017. 4(3): 2349-5197.
- Farhad M. (2015). *Transport infrastructure and long-run economic growth in OECD countries*, *Journal of Transportation Research Part A: Policy & Practice*, 74, 73-90.
- Hong Junjie (2007), *Transport and the location of foreign logistics firms: the Chinese experience*, *Transport. Res. Part A: Policy Pract.*, 41 (6) (2007), pp. 597-609, 10.1016/j.tra.2006.11.004
- Mackie Peter, Tom Worsley, Jonas Eliasson, (2014). *Transport appraisal revisited*, *Research in Transportation Economics*, 47, pp. 3–18
- Miller Michael and Eckhard Szim, (2015). *How to avoid unrealistic appraisal results? A concept to reflect the occurrence of risk in the appraisal of transport infrastructure projects*, *Research in Transportation Economics* 49, pp. 65-75

- Owyong, D. T. and Thangavelu, S. M. *An Empirical Study on Public Capital Spillovers from the USA to Canada*. *Applied Economics*, 2001. 33(11): 1493-1499.
- Romp Ward, Jakob De Haan (2007), *Public capital and economic growth: a critical survey*, *Perspektiven Der Wirtschaftspolitik*, 8 (S1) (2007), pp. 6-52
- Reisa H. & Rua A. *An Input–Output Analysis: Linkages versus Leakages*, *International Economic Journal*, 2009. 23(4): 527-544
- Sartzetaki M. (2019). *Value Based Management Analysis Framework Towards Transport Enterprises Resilience*, *International Journal of Economics, Business and Management Research*, 3(6), pp.82-96
- TRB, (2008). *Transportation Research Board Airport economics impact methods and models: A synthesis of airport practice*, *Airport Cooperative Research Program, ACRP Synthesis 7*, Washington D.C., pp. 5-6.
- Weisbord Glen (2008), *Models to predict the economic development impact of transportation projects: historical experience and new applications*, *Ann. Reg. Sci.*, 42 (3) (2008), pp. 519-543

Optimization of Corporate Branding Strategy in Higher Education as the Marketing Sustainability: Study at Universitas Pembangunan Nasional (UPN) "Veteran" Jawa Timur

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Abstract

The rise of the phenomenon of state institutions which are required to become independent both financially and management are forced to be competitive with each other, both from domestic and foreign private institutions. It's forcing the institution to improve the competitiveness both in terms of services and achievements to hold its existence in the current of global markets. UPN "Veteran" Jawa Timur is one of the new state institutions, which is expected to be independent in both, financial and management, and they use the brand "bela Negara" as the corporate branding strategy. As a higher education institution have to improve tri dharma services. Corporate branding is a strategy to increase the market value of an organization. The three stages in corporate branding strategy are the goal (vision), culture, and externalization. This research focuses on identifying the vision of how awareness among users. Two independent variables, namely brand association and brand reputation, are taken from the theory of corporate branding strategy. While the brand image variable as a moderator and brand awareness as an independent variable. Samples were taken from 411 UPNVJT students by purposive random sampling. The questionnaire as the instrument research which uses a Likert scale. All item and variable indicators are tested both reflective and formative with the SmartPLS 3 software. From the results of the outer and inner model, it is found that the brand image as a moderator has the most influence on brand awareness. Overall, it shows that it supports the existing hypothesis, and the variable which has the smallest influence on brand awareness is the brand association.

Keywords: Corporate Branding, Brand Image, Brand Awareness, Higher Education

1. Introduction

1.1 Introduce the Problem

The brand has a very important role for the organization because it is an invisible asset that can become the identity of an organization and increase loyalty and higher margins in the long run (Kotler, Philip. Armstrong,

2012). A brand is a form of business strategy or other organization to communicate the personality and core of the organization both visually and non-visually (forbes communication council, 2018). The brand is at the forefront of communicating products and services. Organizational value can grow or decrease exponentially through brands (Berens, 2004). This is a challenge that needs to be studied and developed from various parties, both business and non-business organizations (Hatch, 2003). Where during the last decade, many organizations have begun branding themselves as a form of organizational differentiation from one another, whether it is strengthening their profile in the public, through websites, advertisements, media issues, and other forms of communication (Richard, 2012).

In the current era of globalization, branding strategy is not only applied in business organizations, but also extends to various sectors of the organization (Joseph and Abidemi, 2016). In the non-business sector, for example, the emergence of various city branding, even country branding to promote the existence of a city or country in the eyes of the world (Balmer, 2013). Efforts to strengthen branding in an organization are often referred to as corporate branding strategies. Corporate branding is a strategy to increase the market value of an organization (Berens, 2004). Basically, there are three main stages in corporate branding strategy, namely: goal (vision), culture, and externalization. In previous studies of (Siti Ning Farida, 2019) has been carried out at the vision stage, which emphasizes the internalization of a brand. So that in this study, more focused on the identification and culture stages for later research aimed at external. Corporate brand culture forms the core values of a brand and creates an organizational identity and has values that become the competitive advantage of an organization (Maden, 2013). Corporate brand culture is developed through several variables that influence between brand association, brand image, and brand reputation (Berens, 2004). Prior to the culture stage, previous research (Banerjee, 2008) showed the need for corporate brand awareness in community organizations. Brand awareness in this context is the awareness of members of the organization of the corporate brand stated in the vision and mission of an organization by leaders at the managerial level.

Since 6 December 2018 UPN "Veteran" Jawa Timur (UPNVJT) have officially become universities with Public Service Agency (BLU in Bahasa) by the Ministry of Finance of the Republic of Indonesia. It means UPNVJT has been considered capable of managing finances independently and is demanded to improve *tri-dharma* education services (pers UPN, 2018). This requires an institution to improve competitiveness in terms of both service and performance achievements. UPNVJT was previously a private tertiary institution under the ministry of defense, driven by the increasing need for tertiary institutions so that UPNVJT was encouraged to become a state university by carrying out its identity as a "bela Negara" campus. Seeing the inauguration with the identity of "bela Negara" not long ago formed, it is interesting to do a more in-depth study related to how to optimize the "bela Negara" brand at UPNVJT as a form of corporate branding strategy.

1.2 Explore the Importance of the Problem

Based on the gap phenomenon, thus, this study has the aim to examine the related corporate branding of corporate brand awareness. So this research is entitled "optimization of corporate branding strategy as a form of sustainability marketing: a study at the" Veteran "National Development University (UPN) of East Java. The formulation of the problems that are the focus of this research are as follows:

1. How corporate branding (brand association and brand reputation) affects brand awareness at UPN "Veteran" East Java?
2. How corporate branding (brand association and brand reputation) affects brand awareness by mediating the brand image at UPN "Veteran" East Java?

1.3 Describe Relevant Scholarship

Corporate Branding

Corporate branding is one form of brand building strategy from organizations to create their brand perspectives in society (Ajike, 2016). Corporate branding refers to the mindset that comes from within the organization to the outside, which means experience, encounter, and company perceptions in the eyes of customers or the wider community (Berens, 2004). According to (Hatch and Williamson, 2003) Corporate branding describes the company, sending messages to users about the quality and other attributes of the product or service. Corporate

branding can be seen as a systematic, planned, and implemented process aimed at creating and maintaining a positive image and reputation for the entire organization (Punjaisri and Wilson, 2011).

The important role of corporate branding can be seen from the organizational behavior and culture that is formed. Based on the research of (Hatch, 2003) incorporate branding strategy, attention needs to be paid to 3 main points, namely: strategic vision, organizational culture, and corporate image (figure 1). Corporate brands have different roles in consumer perception. This means that evaluation is needed, whether the perceptions in the organization are the same as the perceptions held by consumers (Berens, 2004). The corporate brand emphasizes on the image formed, reputation, and association of the organization and all existing stakeholders (Ajike, 2016).

Brand Image

Brand image has long been known as an important concept in marketing (Keller, 2013), but it also has an important role in building a brand in an organization (J, Mao, 2010). (Aaker, 1996) Defines brand image as a set of brand associations associated with whatever memory to a brand, usually in a meaningful way and can be defined as a combination of consumers' perceptions and beliefs about a brand (Akhmedov, 2016). Furthermore, Kotler and (Kotler, Philip., et al., 1999) define brand image as "a set of beliefs that consumers have about something related to the brand's uniqueness. (Bivainiene L, 2007) in (Piehler *et al.*, 2016) defines brand image as "a multifunctional collection of tangible and intangible features, which enable consumers to do product identification."

Brand Reputation

The term reputation and image are often used together so that they are relatively difficult to distinguish between in establishing corporate branding (Chun, 2005). However, further studies find the difference between the two, brand reputation is consumer perception based on experience with services or the use of a product (Kimpakorn and Tocquer, 2010), while brand image is consumer perception based on information or opinions from various sources giving rise to perceptions prior to experience (Yang & sing, 2008). Meanwhile, Gray and Balmer (1998) say the difference between brand image and brand reputation is whether the individual is able to describe an organization without having experience with the organization while brand reputation is more profound, based on personal experience. In (Pinson & Ford, 2012) stated that brand reputation is defined as a form of collective representation of several images that are formed from time to time based on organizational identity, programs, and performance (Argenti and Druckenmiller, 2004). Another study found that reputation is a set of perceptions held by external parties or stakeholders because it focuses on reputation, credibility, legitimacy in an organization (Bromley, 1993; Davies & Mil, 1988)

Brand Association

Jamil & Wong (2010) are of the view that brand association is defined as the strength of benefits offered by brands. Krishnan (1996) considers that "brand association" can be used as a general term to represent the relationship between two nodes, which suggests brand association in the customer's mind (Chen, 2014). Brand associations will help consumers find and respond to information (Boisvert, 2011). In addition, brand associations will provide consumers with purchase reasons, because most brand associations relate to brand attributes, consumer target markets, and benefits consumers need, so they form the basis of brand loyalty and consumer purchasing decisions (Len T.W, Cindy M, 2007).

Brand Awareness

Brand awareness is the ultimate definition of brand recognition, meaning that the potential for existence is easy to remember, information, and ideas about products are easily recognized (Bilgili, B., & Ozkul, 2015). (Ekhveh, A & Darvishi, 2015) show that brand awareness is associated with information nodes in memory; The customer's ability to recognize a brand in various conditions reflects their awareness of that brand. (Jamil, B., & Wong, 2010) Define brand awareness as brand recognition and brand withdrawal from a brand. Brand awareness creates a large association in memory about certain brands (Malik, M. E., Ghafoor, M. M., Hafiz, K. I., Riaz, U., Hassan, N. U., Mustafa, M., & Shahbaz, 2013). Brand awareness is one of the main factors in creating brand

added value and is also considered as one of the key factors that influence consumer-level knowledge about brands (Chinomona, 2017).

1.4 State Hypotheses and Their Correspondence to Research Design

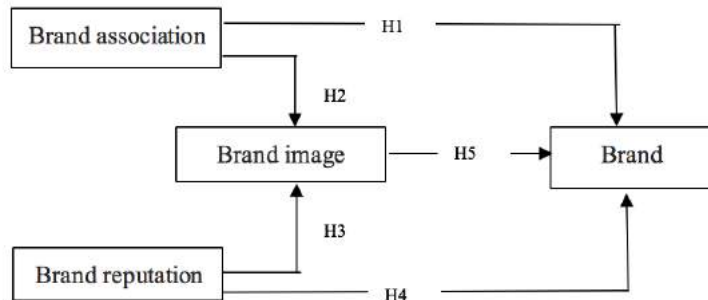
H1: Corporate Brand Association has a positive effect on corporate Brand Awareness

H2: Corporate Brand Association has a positive effect on corporate Brand Image

H3: Corporate Brand Reputation has a positive effect on corporate Brand Image

H4: Corporate Brand Reputation has a positive effect on corporate Brand Awareness

H5: Corporate Brand Image has a positive effect on corporate Brand Awareness



Picture 1. Model of corporate branding research thinking

Sources: Data Processed (2019)

2. Method

The research method used in this study is a quantitative approach. In the quantitative approach by distributing questionnaires. The interview is used to make more consideration depth related to conditions in the field.

2.1 Scale Operation

Measurement of variables using a Likert Scale that allows respondents to answer each question item that is able to describe how their attitudes and behavior (Zimund, W.G. Babin, B.J & Griffin, 2013). Variable measurements are based on prior research, corporate brand association (BA) is measured by a number of 15 indicator items referring to research (Bohrer, 2007), (Alexandris, Douka, Papadopoulos, & Kaltsatou, 2008), and (Kimpakorn & Tocquer, 2010). The corporate brand image (BI) variable refers to (Chen, 2014) a number of 4 items. Corporate Brand Reputation (BR) there are 14 item indicators based on research (Catalin, 2014). Then the corporate Brand Awareness (BAW) of 4 items based on research (Bohrer, 2007) and (Kimpakorn & Tocquer, 2010).

2.2 Data Collection and Sampling Procedure

A population is an object or subject in a group of individuals who have the same characteristics (Creswell, 2012). The population in this study were all UPNVJT students totaling 10,796 (forlap dikti, 2018 / '2019). Data collection techniques using purposive random sampling to be able to represent the entire population. There are two techniques used by revolutionary distribution, manually and online. In total, 444 questionnaires were distributed, and then the questionnaire selection process could be used in a number of 411 respondents. The sample size is sufficient to represent a population of ten thousand in number using the Yamane approach (1967) with a precision level of $\pm 5\%$ and a confidence level of 95%.

3. Results

The respondents of the survey had some characteristics, as described in Table 1. Overall, 411 participants were obtained, of which 213 respondents were obtained manually, and 198 others were obtained from online distribution. The demographic picture of the research respondents is 152, while the number of men is 259. Most of them are in the fourth semester with the most 160, the same number of respondents are from the faculties of

social and political science. 308 of them have taken national defense courses, and 237 of them are active students in organizations.

Table 1. Demografi responden mahasiswa UPN “Veteran” Jatim

Gender	Frequency	Department	Frequency
Male	152	1 Social Politics Dept.	160
Female	259	2 Technique Dept.	96
Amount	411	3 agriculture dept.	27
Semester	Frequency	Department	Frequency
2 (second)	106	4 economic and business dept	82
4 (forth)	160	5 architec and design dept.	6
6 (sixth)	68	6 law dept.	15
8 (eight)	76	7 computer science dept	23
10 (tenth)	1	8 magister dept	1
Amount	411	Amount	411
Take course of “Bela Negara”	Frequency	Active on organization	Frequency
Yes	308	Yes	238
Not yet	103	No	173
Amount	411	Amount	411

Sources: Data Processed (2019)

3.1 Scale Accuracy analysis

Accuracy scale on the variables used in the study was tested using smart PLS software, with a focus on several focus on reflective measurements namely outer loading, AVE, CR, Cronbach alpha and formative measurements seen from the level of the outer weight. Outer loading is an external standard value with a variant size of not less than 50%, so in this study, a minimum value of 0.5 and indicator items that have values below 0.5 are removed. Next is the Average Variance Extracted (AVE) which shows the level of convergent validity where the minimum value limit of 0.5 indicates the value of the variable used indicates more than half when compared to other variables. Composite reliability (CR) to measure internal consistency in the model, where the minimum value is 0.6, if the value is below 0.6, it can be concluded that the variables used are less reliable. Cronbach alpha is used to strengthen the reliability test of a variable, where the minimum value is 0.6, this is the same as the minimum value in CR. Furthermore, formatively viewed from the level of outer weight in each item idator, in general, the value of outer weight is always lower than outer loading, because outer weight is the result of multiple regression (hair et al., 2015). Outer weight is used to evaluate the contribution of item indicators and their relevance.

The results of the scala item test in the study showed that the entire load was obtained values of more than 0.5 (minimum limit), using several item indicators, read: B.AW4, BA 1, BA 2, BA 4, and BA 11. available can be withdrawn Item indicators meet the criteria and can be continued in the next test. Outside weight values look reasonable compilation of values outside of outside loading, and there is no limit to outside weight because this only shows the contribution of each item. AVE all variables determine the value above 0.5 unless BA has not been assessed very close, and if the round has fulfilled 0.5 then, in this case, it can be concluded that all variables are valid. CR and Cronbach alpha shows the value of the level of reliability of the variables in this study all variables have a value of more than 0.4 then it can be concluded that all the variables that are already quite reliable.

Table 2. Indicator scale test results for each variable

Variable	Outer loading	Outer weight	Scale		AVE	CR	Cronbach alpha
			Original	Final			
B.AW			4	3	0.640	0.842	0.720
B.AW1	0.862	0.489					
B.AW2	0.765	0.386					
B.AW3	0.770	0.368					
BA			15	11	0.488	0.912	0.894
BA3	0.611	0.126					
BA5	0.642	0.116					
BA6	0.676	0.112					
BA7	0.563	0.098					
BA8	0.616	0.104					
BA9	0.738	0.125					
BA10	0.732	0.123					
BA12	0.716	0.135					
BA13	0.755	0.153					
BA14	0.816	0.164					
BA15	0.775	0.162					
BI			4	4	0.607	0.860	0.784
BI1	0.740	0.302					
BI2	0.797	0.318					
BI3	0.832	0.376					
B14	0.743	0.283					
BR			14	14	0.601	0.955	0.948
BR1	0.815	0.100					
Variable	Outer loading	Outer weight	Scale		AVE	CR	Cronbach alpha
			Original	Final			
BR2	0.808	0.094					
BR3	0.805	0.094					
BR4	0.814	0.106					
BR5	0.694	0.086					
BR6	0.803	0.094					
BR7	0.749	0.092					
BR8	0.646	0.058					
BR9	0.822	0.095					
BR10	0.763	0.093					
BR11	0.836	0.102					
BR12	0.706	0.088					
BR13	0.757	0.087					
BR14	0.812	0.095					

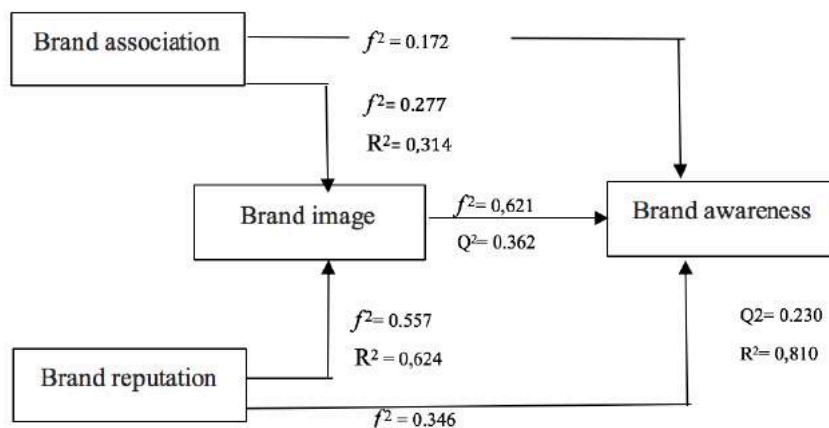
Sources: Data Processed (2019)

3.2 Hypothesis Testing

After the item scale test both reflectively and formality is declared valid and reliable, so that the inner model of the bootstrapping model can be continued to estimate the path coefficient values, which include: R2, f2, and Q2.

The value of R² is an evaluation measure of the effect of the independent variable with the dependent variable, with values > 0.67 (substantial), 0.33 (moderate), 0.19 (weak). The value of f² represents the level of influence of the dependent variable on the dependent variable, where the value < 0.02 (weak influence), < 0.12 (enough influence), < 0.35 (strong influence). Q² shows the values in the construct have predictive relevance if the value of Q² > 0 then it is proven, and vice versa.

Based on Figure 2, it can be seen the results of bootstrapping and blindfolding test from smartPLS software, the level of influence of the independent variable BA → BAW is 0.172 indicating the level of influence is enough, BA → BI is 0.277 showing enough influence, BR → BAW is 0.346 indicating moderate influence, BR → BI is 0.557 shows a strong influence and BI → BAW shows a strong influence of 0.621. Then r² is indicated by the dependent variable BI of 0.314 by BA, meaning BA has a moderate effect on BI, whereas BI by BR is 0.624, which means it has strong or substantial. The level of Q² by the dependent variable respectively, BI = 0.362 and BAW = 0.81, when Q² > 0 it can be concluded that the values examined have been constructed well and have good predictive relevance too.



Picture 2. Blindfolding test results of the inner model
Sources: Data Processed (2019)

4. Discussion and conclusion

This research focuses on strengthening brand awareness through corporate branding strategy, which consists of two independent variables (brand association and brand reputation) and two dependent variables (brand image and brand awareness). Based on the results of hypothesis testing, the results of brand associations, or things related to the brand, will affect brand awareness, this is evidence that the first hypothesis is acceptable and in accordance with previous research (Chinomona, 2017) which states that brand association helps improve brand awareness by users. While brand reputation is at a fairly strong level of brand awareness which proves that the fourth hypothesis and this is also supported by previous research (Nguyen *et al.*, 2016) which shows that brand awareness is built on brand reputation. Then the second hypothesis test between brand association to brand image shows a sufficient relationship and supports the hypothesis that was predicted at the beginning, this is also based on research conducted by (Chinomona, 2016) which discusses related brand image that is influenced by things related to the brand (association) both physically and non-physically. Furthermore, the third hypothesis was also successfully proved by the level of the relationship between brand reputation and brand image, showing a strong relationship that is in accordance with the research (Alhaddad, 2015) which is in accordance with these results.

In theory, the results of this study prove that brand awareness can be built by several factors, namely brand image, brand association, and brand reputation, practically this research can be used as a reference when an institution builds brand awareness, it must start by making associations and reputations related to the brand, and building a brand image that supports brand awareness building up perfectly.

Based on the results of this study, it can be concluded that brand awareness is influenced by brand image, brand association, and brand repairs, both directly and indirectly. Brand image as mediation has a significant influence because it has the most dominant influence on brand awareness. Whereas the least dominant influence on brand awareness is brand association. So based on the current research, which was taken empirical studies at UPN VJT, sequentially from the most dominant, brand awareness is influenced by brand image, brand reputation, and brand association. Then the brand image as a dominant mediator is influenced by brand repairs rather than brand associations.

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References

- Aaker, D. (1996) 'Measuring brand equity across products and markets', *California Management Review*, 38(3), pp. 102–120. doi: 10.2307/41165845.
- Ajike, E. (2016) 'Corporate branding as a strategic tool in a competitive market', (May 2015).
- Akhmedov, R. (2016) 'Social networking to expand brand awareness and influence on purchase intention', *Actual Problems of Economics*, 178(4), pp. 311–317.
- Alhaddad, A. (2015) 'A Structural Model Of The Relationships Between Brand Image, Brand Trust And Brand Loyalty', *International Journal of Management Research & Review A*, 5(3), pp. 137–145.
- Balmer, J. M. T. (2013) 'Corporate brand orientation : What is it ? What of it ?', 20(September), pp. 723–741. doi: 10.1057/bm.2013.15.
- Berens, G. A. J. M. (2004) *Corporate branding : the development of corporate association and their influence on stakeholder reaction*. Available at: <https://core.ac.uk/download/pdf/18520265.pdf>.
- Bilgili, B., & Ozkul, E. (2015) 'Brand Awareness, Brand Personality, Brand Loyalty and Consumer Satisfaction Relations in Brand Positioning Strategies (A Torku Brand Sample)', *Journal of Global Strategic Management*, 9(2), pp. 89–106.
- Bivainiene L (2007) 'Brand image conceptualization: the role of marketing communication', *Economics and Management*, 12(1), pp. 304–310.
- Boisvert, J. (2011) 'Conceptualization and modelling of the process behind brand association transfer', *International journal of Market Research*, 53(4), pp. 541–556.
- Chen, C. (2014) 'Airline Brand Customer-based Exploring Evidence from Taiwan Equity ', 49(1), pp. 24–34.
- Chinomona, R. (2016) 'Brand communication , brand image and brand trust as antecedents of brand loyalty in Gauteng Province of South Africa', 7(1), pp. 124–139. doi: 10.1108/AJEMS-03-2013-0031.
- Chinomona, R. (2017) 'The influence of brand awareness , brand association and product quality on brand loyalty and repurchase intention : a case of male consumers for cosmetic brands in South Africa', 12(1), pp. 143–155.
- Chun, R. (2005) 'Corporate reputation: Meaning and measurement', *International Journal of Management Reviews*, 7(2), p. 91-109.
- Ekhveh, A & Darvishi, A. . (2015) 'The Impact of Brand Awareness on Re-purchase Intention of Customers With Trilogry of Emotions Approach (Case Study for Cell Phones)', *Applied mathematics in Engineering, Management and Technology*, 3(4), pp. 25–30.
- forbes communication council (2018) '13 creative ideas to drive your organization's brand forward'. Available at: <https://www.forbes.com/sites/forbescommunicationscouncil/2018/02/20/13-creative-ideas-to-drive-your-organizations-brand-forward/#5c44aef62cda>.
- Hatch, M. J. (2003) 'Bringing the corporation into corporate branding', (August). doi: 10.1108/03090560310477654.
- Hatch, M. J. and Williamson, J. (no date) 'Bringing The Corporation Into Corporate Branding', 44(March 2001).
- J, M. (2010) 'Customer brand loyalty', *International journal of business and management*, 5(7), pp. 213–217.
- Jamil, B., & Wong, C. H. (2010) 'Factors influencing repurchase intention of smartphones', *Journal of Marketing Research*, 4(12), pp. 289–294.
- Joseph, O. and Abidemi, A. A. (2016) 'Strategic roles of branding on organization sales performance', (February).
- Keller, K. . (2013) *strategic brand management: building, measuring, and managing brand equity*. 4th edn. boston: Pearson.

- Kimpakorn, N. and Tocquer, G. (2010) 'Service brand equity and employee brand commitment', 5(December 2008), pp. 378–388. doi: 10.1108/08876041011060486.
- kotler, philip. armstrong, gary. saunders, john. wong, V. (1999) *principles of marketing*. new jersey, USA: prentice hall inc.
- kotler, philip. armstrong, G. (2012) *principles of marketing*. Pearson Prentice Hall.
- Len T.W, Cindy M, L. M. . (2007) 'Research issues in building brand equity and global brands in the PC market', *Journal of Marketing Management*, 31(1), pp. 137–155.
- Maden, D. (2013) 'The Concept of Brand Culture : A Qualitative Analysis Directed to Turkish Airlines', 4(10), pp. 42–49. doi: 10.5901/mjss.2013.v4n10p42.
- Malik, M. E., Ghafoor, M. M., Hafiz, K. I., Riaz, U., Hassan, N. U., Mustafa, M., &Shahbaz, S. (2013) 'Importance of brand awareness and brand loyalty in assessing purchase intentions of consumer.', *International Journal of Business and Social Science*, 4(5), pp. 167–171.
- Nguyen, B. et al. (2016) 'Brand ambidexterity and commitment in higher education: An exploratory study', *Journal of Business Research*. Elsevier Inc., 69(8), pp. 3105–3112. doi: 10.1016/j.jbusres.2016.01.026.
- pers UPN (2018) 'capaian baru UPN “veteran” jawa timur di penghujung tahun'. Available at: <http://pers-upn.com/2018/12/17/capaian-baru-upn-veteran-jawa-timur-di-penghujung-tahun/>.
- Piehler, R. et al. (2016) 'The importance of employee brand understanding, brand identification, and brand commitment in realizing brand citizenship behaviour', *European Journal of Marketing*, 50(9/10), pp. 1575–1601. doi: 10.1108/EJM-11-2014-0725.
- Punjaisri, K. and Wilson, A. (2011) 'Internal branding process : key mechanisms , outcomes and moderating factors', 45(9), pp. 1521–1537. doi: 10.1108/03090561111151871.
- richard, tony (2012) 'why is your organization's brand important?' Available at: <https://www.clearvisiondevelopment.com/why-is-your-organizations-brand-important/>.
- siti ning farida, nurul azizah (2019) 'Penanaman Internal Branding Dalam Membangun Brand Commitment (Studi Pada Universitas Pembangunan Nasional (UPN) “Veteran” Jawa Timur Sebagai Kampus “Bela Negara”)', *jurnal bisnis indonesia*, 10(1), pp. 30–44.

Measuring National Character Toward Developing A Research Method for International Accounting Studies

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Abstract

This study measures national character in seven developed countries, based on social capital concept. Evaluating national character in developed countries help cross-country study on accounting system. The measurements of national character use data of the World Values Surveys (WVS) conducted by the World Values Surveys Association. The WVS is a questionnaire survey that uses a random sampling method with multiple precoded selections. Compared to other social capital surveys, this survey makes better measurement of national character because it includes numerous questions in a wide range of fields and focuses on many people in diverse countries. Factor analysis of the WVS data identifies three factors of social capital concept. These three factors are consistent with the components of social capital concept proposed in previous studies. Structural equation model finds the coefficients for measuring national character, and regression analysis measures three indexes of national character of each country. The findings are as follows. Social capital consists of three factors such as social trust, religious social norms, and political networks. The measures of these three factors are the lowest in Japan, followed by France, the United States, Germany, Canada, and Australia, in increasing order. In developed countries, religious social norms measures are negative and low, and the effect of political networks on national character is relatively low. This study implies that differences in national character affect various national institutions and systems. This study has significant implications for both regulators and financial markets.

Keywords: International Accounting, International Financial Reporting Standards, National Character, Research Method, Social Capital

1. Introduction

This study develops a research method to provide measurements of national character for international comparative research on the decision usefulness of financial information prepared in accordance with the International Financial Reporting Standards (IFRS).

The field of data science emphasizes the consequences of diverse cultures, ethnicities, and religions in international comparative research (Yoshino & Hayashi, 2002; Jowell, Roberts, Fitzgerald, & Eva, 2007; Fujita

& Yoshino, 2009; Yoshino, Shibai, Nikaido, & Fujita, 2015). Data on diverse cultures, ethnicities, and religions help explain social phenomena by identifying national character in each country. It is important to evaluate national character when studying accounting systems, because humans carry out business operations and accounting practices. In international accounting research on the decision usefulness of financial information, evaluating national character aids in understanding the features of financial information that reflect business activities (Gray, 1988; Douppnik & Salter, 1995; Zarzeski, 1996). Several prior international accounting studies find that national character can affect a country's accounting system including the accounting information it produces.

Previous studies examine the impact of societal values on accounting information in different countries, based on the results of Hofstede's surveys on cultural dimensions. A series of Hofstede's surveys are famous for revealing differences in societal values among countries. However, test results find different effects of each societal value on accounting information in each study. This inconsistency is likely due to the different objects and periods of analyses among previous studies, as well as changes in the cultural characteristics of each country as the environmental changes over time. Such problems reveal the need for new measurements of national character using data other than Hofstede's research.

Some recent comparative accounting studies use social capital concept. Social capital is initially derived from social theory, and from the broad idea that social relationships are resources that help people act effectively. Prior studies define social capital as the features of social organizations, such as trust, norms, and networks, that can improve society's efficiency by facilitating coordinated actions. Various institutions and organizations continue to investigate and analyze social capital. However, they descriptively examine the social capital of each country and do not measure it numerically. As the result, some previous studies measure a component of social capital by simply using the average of answers to a single question in those surveys. No studies examine the effects on accounting information of all three factors of social capital measured using a systematic model.

The purpose of this study is to measure national character in developed countries. National character is clearly different between developed and developing countries, but may be similar among developed countries. However, this research focuses on developed countries, as this evaluation of national character is intended for use in international accounting studies on the application of IFRS. The measurement of national character developed in this study uses data from the World Values Surveys (WVS) conducted by the World Values Surveys Association (WVSA). Factor analysis of the answers to these questionnaires reveals three factors of social capital concept. Structural equation model (SEM) finds the relationship among the question items, and regression analysis measures national character using the relationship to each factor.

The remainder of this paper proceeds as follows. Section 2 discusses prior research. First reviews the surveys relating to research of national character focusing on culture, and next reviews accounting literature that examines the effects of cultural dimensions on financial information. Section 3 discusses the materials and the method for measuring national character. Section 4 shows the descriptive statistics for adjusted data of answers and the results of measuring national character of each country. Finally, Section 5 presents conclusions and discusses their implications.

2. Prior Literature

2.1. Surveys of Cultural Dimensions

National character is an important concept in anthropology for considering socio-cultural systems (Benedict, 1934; Kardiner, 1939; Linton, 1945). Despite the importance of this concept, there are few definitions of national character. Inkeles (1997) defines national character as those characteristics that are common or have been standardized in a given society. This concept aids in understanding the causes and consequences of different social structures and cultural arrangements.

Hofstede (1980) explores the differences in thinking and social action among national populations in 40 countries. The data compile questionnaire survey results from more than 116,000 employees of a multinational firm, Hermes (IBM) Co., during 1967-1973. Hofstede (1980) presents the theoretical reasoning, base data, and statistical treatments used to arrive at the conclusions. The study measures national culture based on four societal values: power distance, uncertainty avoidance, individualism and collectivism, and masculinity and femininity. The index of power distance is calculated using the answers to three questions, while the individualism and masculinity measures are based on responses to 14 questions related to work goals. Hofstede (1980) performs factor analysis using the average of question answers, and develops equations with scores between 0 and 100 using factor loadings for the first and second factors.

Hofstede (2001) expands the survey coverage to 50 countries, and introduces a fifth societal value (long- versus short-term orientation) to the four social values in Hofstede (1980). The survey data for the new dimension uses the answers of the Chinese Value Survey in 23 countries around 1985 and the results of the European Media and Marketing Survey in 11 countries. Hofstede, Hofstede, & Minkov (2010) incorporate a sixth societal value (indulgence versus restraint). Hofstede et al. (2010) conduct a survey in 76 countries for the four social values of Hofstede (1980) and a survey in 96 countries for the other two social values. The new surveys use the WVS data.

Hofstede's surveys describe the organization's dependence on culture. Hofstede (2001) and Hofstede et al. (2010) describe various validations of the country scores, provided by the WVS and the Global Leadership and Organizational Behavior Effectiveness (GLOBE). However, measuring societal values presents some issues. For example, Hofstede (2001) and Hofstede et al. (2010) do not upgrade the data used to identify the four societal values from Hofstede (1980). The object and method of the surveys on the two societal values added in Hofstede (2001) and Hofstede et al. (2010) differ from the four societal values in the initial survey of Hofstede (1980). Hofstede (1980) surveys employees of IBM whereas Hofstede (2001) and Hofstede et al. (2010) data are collected from other populations.

In addition to Hofstede's surveys, GLOBE conducts cross-cultural research related to organizations and culture and publishes several surveys, such as House et al. (2004, 2014) and Chhokar et al. (2008). House et al. (2004) focus on 62 countries and conducts questionnaire surveys about different dimensions, such as practices and values, and different groups such as society and organizations. House et al. (2004) propose nine cultural dimensions and assume that national character is measured on these nine dimensions to explain leadership behavior. The cultural dimensions are performance orientation, assertiveness, future orientation, humane orientation, institutional collectivism, in-group collectivism, gender egalitarianism, power distance, and uncertainty avoidance. Questionnaire items for the nine cultural dimensions are designed to elicit information about social and organizational practices. Respondents rates the items on a 7-point Likert-type scale. Descriptive statistics for answers to the questions include the mean, median, and standard deviation. After qualitative and quantitative analysis of those data, House et al. (2004) show that these nine cultural dimensions are related to the five societal values noted in Hofstede (2001). However, Hofstede et al. (2010) insist that cultural dimensions are not always similar to societal values.

The studies by Hofstede and GLOBE are similar in that both evaluate national character based on culture and find that the national character of each country affects organizational behavior. These studies help to investigate the characteristics of financial information prepared and disclosed by management. However, results of measuring some cultural dimensions, such as uncertainty avoidance and institutional collectivism, conflict with the societal values that Hofstede refers to as uncertainty avoidance and collectivism. Differences in the measurements of the same or similar dimensions cast some doubt on the results of these studies.

2.2. Accounting Studies Using Cultural Dimensions

Harrison & McKinnon (1986) and Gray (1988) are early studies that show culture influences the development of accounting systems. Gray (1988) explores the extent to which cultural factors explain and predict international differences in accounting. Gray (1988) also proposes a theory of cultural influence on the development of

accounting systems by international comparisons based on the societal values identified in Hofstede (1980; 1984). Many researchers have empirically analyzed Gray's (1988) theoretical model.

Zarzeski (1996) and Hope (2003) investigate the impact of national cultures on the disclosure level of financial information. Using the four societal values of Hofstede (1980), Zarzeski (1996) analyzes whether differences in culture present obstacle to the international harmonization of accounting standards. Zarzeski (1996) finds that a culture's secretiveness has a significant impact on disclosure practices, however, higher overseas sales ratios, lower debt ratios, and larger firms appear to disclose more information than dictated by their local culture. Hope (2003) examines how national cultures, legal systems, and company characteristics affect the disclosure level of financial information. Hope (2003) shows that culture is an important factor that affects financial reporting systems. However, the extent to which cultural values impact the level of financial reporting varies for different legal systems. Hope's (2003) results show that the impact of uncertainty avoidance and individualism on disclosure level are different depending on a country's legal system, such as code law and common law. Moreover, the sign of the coefficients of power distance and masculinity also differ from Zarzeski's (1996) results.

In the 2000s, international comparative studies focus on how differences in societal values among countries affect earnings information in different countries. Nabar & Boonlert-U-Thai (2007) examine the relationship between cultural values and earnings management. Their results show that earnings management is relatively high in countries with high uncertainty avoidance scores, and earnings discretion is high in countries with high uncertainty avoidance and masculinity scores. Han, Kang, Salter, & Yoo (2010) investigate whether earnings discretion relates to cultural value as well as the institutional features of their country. The results of tests present that uncertainty avoidance and individualism dimensions of national culture explain the earnings discretion of management across countries, and that this association changes with the strength of investor protection. Gray, Kang, Lin, & Tang (2015) examine whether the mandatory adoption of IFRS in the EU restricts the results of previous studies on the relationship between national culture and earnings management. The findings show that the tendency to engage in earnings management continues post-IFRS and cultural factors remain influential in explaining differences in the magnitude of earnings management behavior across countries.

Many prior studies have examined the possible impact on accounting systems of cross-country differences in culture using Hofstede's indexes. These studies have found that development of national systems tends to be a function of environmental factors. Table 1 summarizes the results of previous research. The research results are not entirely consistent. This inconsistency occurs because the data on societal values face significant limitations, and the countries and periods covered by previous studies differ. Riahi & Omri (2013) examine the impact of cultural values measured by macro- and micro-economic data on earnings management. Riahi & Omri (2013) use different indexes to individually measure the five dimensions of Hofstede (2001) as cultural values. Their findings show that Hofstede's five cultural dimensions define national culture in different countries. However, the numbers that represent the cultural values of each country change from those of Hofstede's indicators over time. This result shows the need for national character measurements other than Hofstede's indexes.

Table 1. Effects of Societal Values

Articles	Purpose	Objects	UA	ID	MA	PD
Zarzeski (1996)	Disclosure Level		-	+	+	-
Hope (2003)	Disclosure Level	All Countries	-	+	-	+
Hope (2003)	Disclosure Level	Code Law	+	+	-	+
Hope (2003)	Disclosure Level	Common Law	-	-	+	-
Nabar & Boonlert-U-Thai (2007)	Earnings Management		+			
Nabar & Boonlert-U-Thai (2007)	Earnings Discretion		+		+	
Han, Kang, Salter, & Yoo (2010)	Earnings Discretion		-	+		
Gray, Kang, Lin, & Tang (2015)	Earnings Discretion		+			
Riahi & Omri (2013)	Earnings Management		+	-		-

Note. UA: Uncertainty Avoidance, ID: Individualism, MA: Masculinity, PD: Power Distance.

3. Materials and Method

3.1. Surveys of Social Capital

Other studies have evaluated national character using the concept of social capital that derived from social theory. The concept of social capital is the broad idea that social relationships are resources that help people act effectively (Dasgupta & Serageldin, 1999). Various researchers define social capital differently. Putnam (1993) defines social capital as the features of social organizations, such as trust, norms, and networks, that can improve the efficiency of society by facilitating coordinated actions. Since then, many studies have used trust, norms, and networks as the three elements of social capital.

Putnam (1993) proposes two types of trust: thick trust and social trust. Thick trust refers to beliefs that result from intimate familiarity with an individual, while social trust refers to a general trust relationship with other members of society in a wider area. Social trust helps to develop a social capital of the area because it creates broader cooperation with other area members. Social trust in complex environments can come from relevant sources such as norms of reciprocity and networks of citizen participation.

Putnam (1993) especially emphasizes norms of reciprocity. Reciprocity norms are interdependent exchanges that are divided into balanced reciprocity and generalized reciprocity. Balanced reciprocity norms are exchanges of equivalent items at the same time. By contrast, generalized reciprocity norms are currently unbalanced exchanges where a sustained relationship of exchanges is based on the mutual expectation that equilibrium will be achieved in the future. Generalized reciprocity norms are based on altruism in the sense that the relationship may provide utility to the other party in the short term, but in the long-term selfishness will increase the utility of all parties. As a result, both types of reciprocity are extremely productive components that create social capital.

Putnam (1993) classifies citizen participation networks into horizontal and vertical networks. Horizontal networks represent the breadth of the daily contact and interaction of individuals. Vertical networks are related to the degree of belonging to the area and organization, such as community activities and the formation status of various organizations. Vertical networks are less reliable than horizontal networks, because subordinates dislike being overly exploited and defend themselves by not disclosing too much information.

The concept of social capital has recently received considerable attention from sociologists, economists, and political scientists as part of the debate on national development and organizational behavior¹. At the same time, various institutions and organizations, such as the Organization for Economic Co-operation and Development (OECD), World Bank, International Social Survey Program (ISSP), and WVSA, continue to investigate and analyze social capital.

The OECD investigates the impact of social capital on sustainable economic and social development (Healy & Cote, 2001; Scrivens & Smith, 2013). Scrivens & Smith (2013) propose a questionnaire to identify social capital in different countries based on four interpretations– personal relationship, social network support, civic engagement, and trust and cooperative norms– but have not measured social capital.

The World Bank works on social capital research to end extreme poverty in a generation and promote shared prosperity under sustainable growth (Grootaert, 1998; Woolcock, 1998; Woolcock & Narayan, 2000; Grootaert & Van Bastelaer, 2001, 2002; Grootaert & Narayan, 2004). It analyzes the relationship between social capital and economic disparities using quantitative and qualitative analysis methods. Grootaert & van Bastelaer (2002) propose the SOCAT (Social Capital Assessment Tool), which consists of three instruments for household surveys, community profiles, and organizational profiles, as an evaluation tool. Grootaert & Narayan (2004) develop the SC-IQ (Integrated Questionnaire for the Measurement of Social Capital) as a social capital

¹ In Japan, the Cabinet Office held the international conference on social capital in 2003. At the conference, Reino Hjerpe of Finland's Government Institute for Economic Research gave a keynote speech on the relationship between social capital and economic growth (Hjerpe, 2003). The Cabinet Office National Life Bureau also published a report (The Cabinet Office, National Life Bureau, 2003).

evaluation tool focused on household survey in developing countries. This measures social capital by dividing the questionnaire into the six dimensions of groups and networks, trust and solidarity, collective action and cooperation, information and communication, social cohesion and inclusion, and empowerment and political action. The World Bank has conducted pilot tests using these evaluation tools, but has not released measurement results for many countries in the world.

The ISSP² is an international program jointly established by Australia, Germany, the UK, and the US. Currently, 57 countries have joined the ISSP to conduct basic research and studies on important topics in social sciences such as religion, national identity, the role of government, social networks, social inequality, family and changing gender roles, work orientations, environment, citizenship, leisure time and sports, and health and health care. The ISSP has conducted a questionnaire survey, covering multiple topics over several years.

The WWSA is a worldwide organization composed of sociologists. The WWSA conducts WVS with the aim of investigating changes in people's consciousness in various countries and how these changes impact social, cultural, and political activities. The first survey (Wave 1) begins in 1981 and the seventh survey (Wave 7) is under way at the time of the present study. The survey involves over 100 target countries and more than 400,000 respondents. WVS is superior to other surveys in terms of the number of target countries, scope of the topics, and number of questions. Table 2 shows the summary of the WVS from Wave 1 to Wave 7. Table 3 presents the Label of Questionnaires in Wave6. The WWSA conducts its questionnaire survey mainly using random sampling with precoded multiple selections. This survey is superior to measure national character because it includes numerous questions in a wide range of fields and focuses on many people in diverse countries, compared to other surveys on social capital. Hofstede (2001) and Hofstede et al. (2010) use parts of the WVS to measure societal values, and refer to it to verify the results of the GLOBE survey. The WVS more accurately evaluates national character because its evaluation of national character is not solely based on the cultural perspective.

Table 2. Summary of WVS

Wave No.	Survey Years	Countries	Units	Ques.
Wave1	1981-1984	10	13,586	238
Wave2	1990-1994	18	24,558	375
Wave3	1995-1998	53	76,036	238
Wave4	1999-2004	40	57,868	246
Wave5	2005-2009	57	80,950	267
Wave6	2010-2014	60	86,274	262
Wave7	2015-	*	*	*

Note. *) The survey is under way.

Table 3. Label of Questionnaire

No.	Label	No.	Label	No.	Label
001	Perceptions of life	006	Religion and Morale	014	Socio-demographics
002	Environment	007	National Identity	015	Special Indexes
003	Work	008	Security	016	Sylatech module
004	Family	009	Science		
005	Politics and Society	010	Structure of the file		

Nanda & Wysocki (2011) examine the association between trust and firm voluntary and regulated financial reporting and disclosure quality. The samples are firms in 43 countries. The study documents a robust positive relationship between trust and measures of voluntary accounting quality, but no association between trust and

² <http://www.issp.org/menu-top/home/>

regulated reporting requirements. Nanda & Wysocki (2011) measure the trust index from responses to one question in the WVS and Latinbarómetro Survey³. The question is “Generally speaking, would you say that most people can be trusted or that you need to be very careful in dealing with people?”⁴. Based on the responses to this question, the equation used to calculate the trust index is as follow: $100 + (\% \text{ Most people can be trusted}) - (\% \text{ Can't be too careful})$.

It is important to study accounting systems using social capital to evaluate national character because humans carry out business operations and accounting practices. However, there are not many studies on whether social capital influences accounting information. One reason of this is that no research objectively measures social capital using a large-scale dataset.

3.2. *Measurements of National Character*

This study measures national character based on the social capital concept in seven developed countries. The target countries are Australia, Canada, France, Germany, Japan, the United Kingdom (UK), and the United States (US). Countries other than the US permit or regulate application of IFRS in the preparation of financial statements. The US does not permit applying IFRS to domestic firms. However, the US is the developed country most interested in examining the impact of national character on financial information.

Data for measuring national character is obtained from the WVS. Question items have changed every Wave in response to changes in time and environment. The countries covered by the survey vary in each Wave. Question items answered are also different in each country. The latest completed survey, Wave6, focuses on 60 countries including Australia, Germany, Japan, and the US, but not Canada, France, or the UK. Three countries not surveyed in Wave 6 measure national character using data from Wave 5. There are 267 and 262 question items in Waves 5 and 6. National character is measured using common questions for both Waves 5 and 6 as to be comparable between the measurement results of three countries that use the Wave 5 questionnaire and four countries that use the Wave 6 questionnaire. The number of common question items in Waves 5 and 6 is 185, and the number of question items answered by all seven countries is 126.

The measurement of national character uses adjusted data of answers from the WVS because each question in this survey differs in the Likert scales and response order of the questions. After organizing the order of the answers, differences in the degrees of Licker scales are standardized to the numerical values of the answer results. The adjustments of differences are necessary to ensure consistency in the scales and the weights of responses.

After that, factor analysis of the adjusted data identifies several factors for evaluating national character. Factor analysis uses factor extraction method by principal factor analysis and maximum likelihood method. This analysis reduces the number of questions and helps determine the number of latent variables used in the SEM. The number of factors is selected according to the Kaiser criterion, focusing on each eigenvalue and the cumulative eigenvalues. Based on the answers to the questions on the selected factors, the SEM determines the coefficients for measuring national character, and the regression analysis measures each country's national character.

4. **Descriptive Statistics and Results**

Table 4 presents the number of respondents in each country. Table 5 presents the results of the factor analysis. Focusing on the eigenvalues and cumulative contributions according to the Kaiser criterion, there are 14 factors. Many question items have small factor loadings for the 14 factors. Therefore, after confirming the contents of the question items, the question items with a small impact on the analysis are deleted. Table 6 shows the results

³ Latinbarómetro Survey is conducted by Latinbarómetro Corporation. It measures the development of democracies, economies, and societies by interviews in 18 Latin American countries that are published in several reports (<http://www.latinobarometro.org/lat.jsp>).

⁴ There are many other questions related to trust in WVS. Trust index needs to calculate using the responses to those questions.

of the factor analysis of the questions after deletion. The number of factors is three, focusing on the eigenvalue and cumulative eigenvalues of each factor, as a result of examining each question items and eigenvalue of them. Based on the contents of the questionnaire, the factors could be described as social trust, religious social norms, and political networks, terms similar to three components of social capital concept.

Table 4. The Number of Respondents

Wave	Wave6	Wave5	Wave5	Wave5	Wave6	Wave6	Wave6
Country	AU	CA	FR	UK	GE	JP	US
No. Units	1,477	2,164	1,001	1,041	2,046	2,443	2,232

Table 5. Factor Analysis (1)

Factor	Eigenvalue	Proportion	Cumulative	Factor	Eigenvalue	Proportion	Cumulative
Factor1	8.328	0.185	0.185	Factor9	1.691	0.038	0.774
Factor2	7.471	0.166	0.350	Factor10	1.523	0.034	0.808
Factor3	4.680	0.104	0.454	Factor11	1.341	0.030	0.838
Factor4	3.460	0.077	0.531	Factor12	1.270	0.028	0.866
Factor5	2.814	0.062	0.593	Factor13	1.129	0.025	0.891
Factor6	2.394	0.053	0.646	Factor14	1.069	0.024	0.914
Factor7	2.261	0.050	0.696	Factor15	0.906	0.020	0.935
Factor8	1.809	0.040	0.737	Factor16 ~ omitted			

Table 6. Factor Analysis (2)

Factor	Eigenvalue	Proportion	Cumulative
Factor1	6.451	0.333	0.333
Factor2	4.807	0.248	0.580
Factor3	2.394	0.123	0.704
Factor4	1.823	0.094	0.798
Factor5	1.555	0.080	0.878
Factor6	1.204	0.062	0.940
Factor7	0.965	0.050	0.990
Factor8 ~ omitted			

The Appendix presents the descriptive statistics for each response related to the measurement of the three factors of social capital. The number of valid responses for each question differs from the number of respondents. Table 7 shows the proportion of non-responders. Japan has the highest percentage of non-responders, while the proportions in France and Germany are relatively low.

The SEM identifies the relation of social capital factors and questions answers after classifying the question items that are detected through factor analysis into three latent variables. Figures 1, 2, and 3 show the path diagrams and the results of analyses by SEM.

Table 7. Proportion of Non-Respondents

Country	AU	CA	FR	UK	GE	JP	US	Ave.
No Ans.	1.943	2.608	1.173	3.781	1.663	10.944	1.674	3.829

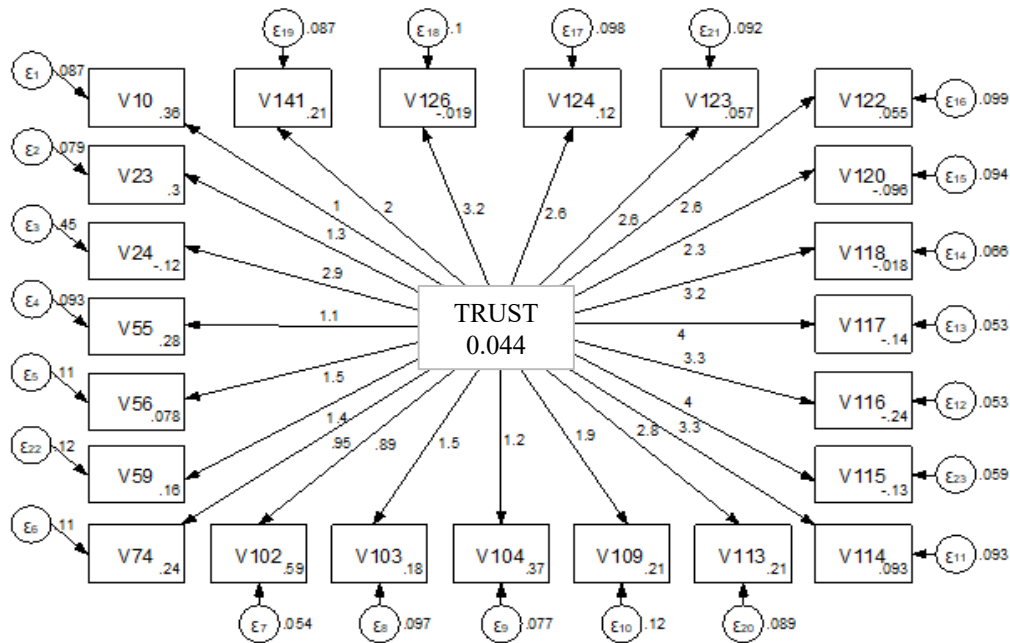


Figure 1. Path Diagram for Trust*)

Note. *) 'V' number is the question number in Wave 6.

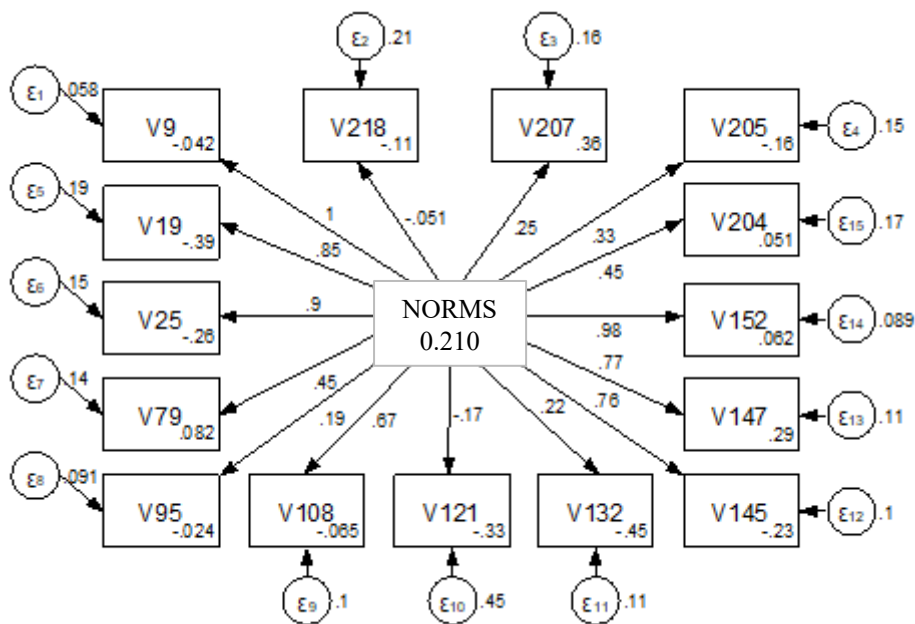


Figure 2 Path Diagram for Norms*)

Note. *) 'V' number is the question number in Wave 6.

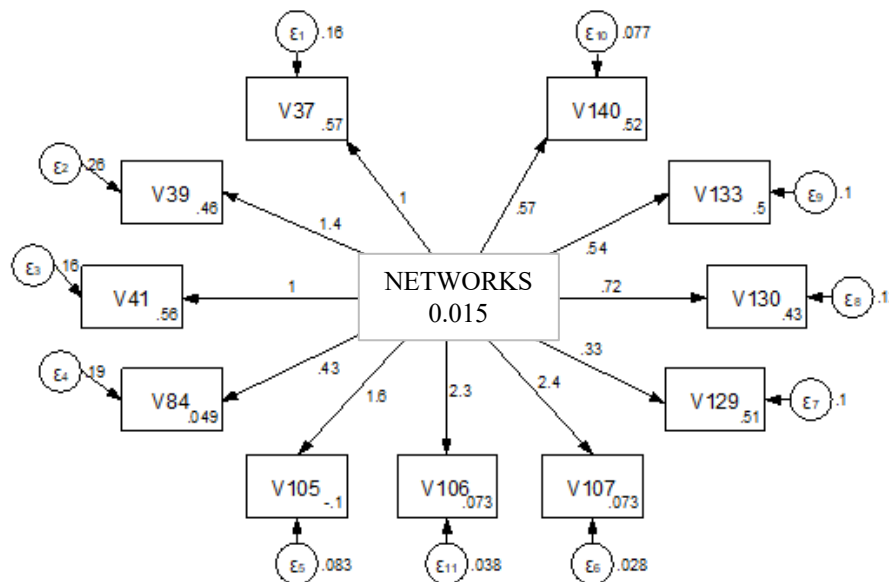


Figure 3 Path Diagram for Networks*)

Note. *) 'V' number is the question number in Wave 6.

Table 8 presents the results of measuring each latent variable based on each country's scores of the answers to the questions to compare the social capital of the seven countries. Among the seven countries, Japan has the lowest figures for social trust, religious social norms and political networks. As a whole, France has the second lowest after Japan, while Canada and Australia have generally high values in the three indexes. The index of religious social norms is negative in all countries, indicating that religious social norms are generally low in economically developed countries.

Table 8. Measures of Social Capital

Wave No.	Wave6	Wave5	Wave5	Wave5	Wave6	Wave6	Wave6
Country	AU	CA	FR	UK	GE	JP	US
Social Trust	0.269	0.307	0.105	0.209	0.238	0.102	0.149
Religious Social Norms	-0.158	-0.029	-0.177	-0.115	-0.176	-0.204	-0.018
Political Networks	0.667	0.683	0.589	0.662	0.564	0.337	0.628

5. Conclusion

This study measures social capital in seven developed countries, for internationally comparing the characteristics of financial information prepared in accordance with IFRS. Previous studies have examined what kind of and how national character influence the development of accounting systems in different countries. Many studies refer to Hofstede's cross-cultural surveys to measure national character. This study assesses the significance of international accounting research that considers cultural dimensions to identify the characteristics of business activities, management behavior, and investor reactions. However, among the results of research using Hofstede's survey scale, there are contradictions in the relationships between cultural dimensions and accounting systems.

Thus, national character is measured using WVS questionnaires, which have numerous questions in a wide range of fields and focus on many people in diverse countries. The results of factor analysis of the WVS data identify three elements of national character of each country, such as social trust, religious social norms, and political networks, that are components of the social capital concept. Then, using the averages of answers of each

question, SEM calculates coefficients of three elements for measuring national character. The regression analysis measures national character of seven developed countries from three factors.

The measurement results of three factors highlight the characteristics of each country's national character. Overall, all indexes of national character are the lowest in Japan. Canada and Australia show higher indexes than the other countries. Among the three factors, the indexes of religious social norms are negative in all countries. Also, the indexes of political networks have low impacts on national character measurements, because the coefficient of the political networks index is relatively low. Trust is an important factor in the development of a social capital. Trust has two aspects of thick trust and social trust. Social trust refers to general trust of other members of society, however thick trust relates to intimate familiarity with an individual. Japanese people are prudent in wide range human relations, except with familiar people. On the other hand, people in Canada and Australia are friendly with various people and society as a whole. Norms include both balanced reciprocity and generalized reciprocity. The negative number of religious social norms shows that reciprocity is comparatively low in developed countries. This result indicates that many people in developed countries are not altruistic in the long term, but are in the short term. Networks represents citizen participation in society. The political networks index demonstrates a vertical relationship with society. The effect of political networks on national character is relatively low and, in developed countries, political networks do not make much difference in the measurement of national character.

This study focuses on only seven developed countries. The measurement of national character should be expanded to many more target countries. However, in the case of international comparisons of the characteristics of financial information prepared in accordance with IFRS, similarity in firm size is a significant factor in decision making of information users. If the measurement focuses on more countries, differences in national character among developed countries may be ambiguous, however differences between developed countries and developing countries may be more apparent. In the future, an international comparative analysis that uses measures of national character may identify the characteristics of financial information prepared in accordance with IFRS. Measuring national character in developed countries contributes to providing the data to examine the usefulness of information for user's decision making. Thus, this study has significant implication for both regulators and financial markets.

References

- Benedict, R. T. (1934). *Patterns of Culture*. Massachusetts: Houghton Mifflin Harcourt.
- Cabinet Office National Life Bureau. (2003). *Social Capital: In Search for a Virtuous Circle of Rich Human Relations and Civil Activities*. Cabinet Office (Japan).
- Chhokar, J. S., Brodbeck, F. C., & House, R. J. (Ed.). (2008). *Culture and Leadership Across the World: The GLOBE Book of In-Depth Studies of 25 Societies*. New Jersey: Lawrence Erlbaum Associates.
- Dasgupta, P., & Serageldin, I. (1999). *Social Capital: A Multifaceted Perspective*. Washington DC: The World Bank.
- Doupnik, T. S., & Salter, S. B. (1995). External Environment, Culture, and Accounting Practice: A Preliminary Test of a General Model of International Accounting Development. *The International Journal of Accounting*, 30, 189–207.
- Fujita, T., & Yoshino, R. (2009). Social Values on International Relationships in the Asia-Pacific Region. *Behaviormetrika*, 36(2), 149–166.
- Gray, S. J. (1988). Towards a Theory of Cultural Influence on the Development of Accounting Systems Internationally. *Abacus*, 24, 1–15.
- Gray, S. J., Kang, T., Lin, Z., & Tang, Q. (2015). Earnings Management in Europe Post IFRS: Do Culture Influences Persist? *Management International Review*, 55, 827–856.
- Grootaert, C. (1998). Social Capital: The Missing Link? *Social Capital Initiative Working Paper* (3). Washington, DC: The World Bank.
- Grootaert, C., & Van Bastelaer, T. (2001). Understanding and Measuring Social Capital: A Synthesis of Findings and Recommendations from the Social Capital Initiative. *Social Capital Initiative Working Paper* (24). Washington, DC: The World Bank.
- Grootaert, C., & Van Bastelaer, T. ed. (2002). *Understanding and Measuring Social Capital: A Multidisciplinary Tool for Practitioners*. Directions in Development. Washington, DC: The World Bank.
- Grootaert, C., & Narayan, D. (2004). Measuring Social Capital: An Integrated Questionnaire. *World Bank Working Paper* (16). Washington, DC: The World Bank.

- Han, S., Kang, T., Salter, S., & Yoo, Y. K. (2010). A Cross-country Study on the Effects of National Culture on Earnings Management. *Journal of International Business Studies*, 41, 123–141.
- Harrison, G. L., & McKinnon, J. L. (1986). Culture and Accounting Change: A New Perspective on Corporate Reporting Regulation and Accounting Policy Formulation. *Accounting, Organizations and Society*, 11, 233–252.
- Healy, T., & Cote, S. (2001). *The Well-being of Nations: The Role of Human and Social Capital*. Paris: OECD.
- Hjerpe, R. (2003, March). *Social Capital and Economic Growth*. Paper presented at the International Conference on Social Capital Organized by Economic and Social Research Institute of the Cabinet Office of the Japanese Government, Tokyo.
- Hofstede, G. (1980). *Culture's Consequences: International Differences in Work-Related Values*. California: SAGE.
- Hofstede, G. (1984). *Culture's Consequences: International Differences in Work-Related Values* (Abridged Edition). California: SAGE.
- Hofstede, G. (2001). *Culture's Consequences: Comparing Values, Behaviors, Institutions, and Organizations Across Nations* (2nd ed.). California: SAGE.
- Hofstede, G., Hofstede, G. J., & Minkov, M. (2010). *Cultures and Organizations: Software of the Mind*. New York: McGraw-Hill Education.
- Hope, Ole-Kristian. (2003). Firm-level Disclosures and the Relative Roles of Culture and Legal Origin. *Journal of International Financial Management and Accounting*, 14, 218–248.
- House, R. J., Hanges, P. J., Javidan, M., Dorfman, P. W., & Gupta, V. (Ed.). (2004). *Culture, Leadership, and Organizations: The GLOBE Study of 62 Societies*. California: SAGE.
- House, R. J., Dorfman, P. W., Javidan, M., Hanges, P. J., & Sully de Luque, M. F. (2014). *Strategic Leadership Across Cultures: The GLOBE Study of CEO Leadership Behavior and Effectiveness in 24 Countries*. California: SAGE.
- Inkeles, A. (1997). *National Character*. New Jersey: Transaction Publishers.
- Jowell, R., Roberts, C., Fitzgerald, R., & Eva, G. (Eds.). (2007). *Measuring Attitudes Cross-Nationally: Lessons from the European Social Survey*. California: SAGE.
- Kardiner, A. (1939). *The Individual and His Society*. New York: Columbia University Press.
- Linton, R. (1945). *The Science of Man in the World Crisis*. New York: Columbia University Press.
- Nabar, S., & Boonlert-U-Thai, K. K. (2007). Earnings Management, Investor Protection, and National Culture. *Journal of International Accounting Research*, 6(2), 35–54.
- Nanda, D., & Wsocki, P. (2011). The Relation between Trust and Accounting Quality. *Working Paper*.
- Putnam, R. D. (1993). *Making Democracy Work*. New Jersey: Princeton University Press.
- Riahi, R., & Omri, A. (2013). Cultural Relativism in Earnings Management. *International Journal of Business Research*, 3(3), 281–295.
- Scrivens, K., & Smith, C. (2013) Four Interpretations of Social Capital: An Agenda for Measurement. *OECD Statistics Working Papers*. Paris: OECD.
- Woolcock, M. (1998). Social Capital and Economic Development: Toward a Theoretical Synthesis and Policy Framework. *Theory and Society*, 27, 151–208.
- Woolcock, M., & Narayan, D. (2000). Social Capital: Implications for Development Theory, Research, and Policy. *The World Bank Research Observer*, 15(2), 225–249.
- Yoshino, R., & Hayashi, C. (2002). An Overview of Cultural Link Analysis of National Character. *Behaviormetrika*, 29(2), 125–142.
- Yoshino, R., Shibai, K., Nikaido, K., & Fujita, T. (2015). The Asia-Pacific Values Survey 2010-2014: Cultural Manifold Analysis of National Character. *Behaviormetrika*, 42(2), 99–129.
- Zarzeski, M. T. (1996) Spontaneous Harmonization Effects of Culture and Market Forces on Accounting Disclosure Practices. *Accounting Horizons*, 10, 18–37.

Appendix. Descriptive Statistics for Responses

Factor SC*)	Wave6	AU			GE			JP			US		
	Ques. No.	Valid Res.	Ave.	St. Dev.	Valid Res.	Ave.	St. Dev.	Valid Res.	Ave.	St. Dev.	Valid Res.	Ave.	St. Dev.
TRU	V10	1,464	0.379	0.277	2,028	0.278	0.302	2,366	0.337	0.307	2,220	0.360	0.302
TRU	V23	1,462	0.296	0.311	2,043	0.297	0.300	2,381	0.222	0.311	2,216	0.305	0.293
TRU	V24	1,466	0.063	0.705	2,017	-0.106	0.699	2,265	-0.159	0.689	2,211	-0.167	0.687
TRU	V55	1,459	0.362	0.302	2,037	0.231	0.326	2,296	0.040	0.314	2,202	0.355	0.279
TRU	V56	1,452	0.161	0.369	2,027	0.022	0.327	2,227	-0.039	0.325	2,205	0.048	0.354
TRU	V59	1,459	0.175	0.375	2,025	0.165	0.367	2,296	0.084	0.354	2,216	0.126	0.377
TRU	V74	1,448	0.223	0.341	2,032	0.220	0.331	2,296	-0.094	0.316	2,184	0.218	0.323
TRU	V102	1,461	0.618	0.202	2,029	0.586	0.249	2,394	0.579	0.223	2,209	0.554	0.272
TRU	V103	1,436	0.171	0.267	2,034	0.171	0.332	2,222	0.049	0.310	2,199	0.144	0.313
TRU	V104	1,434	0.418	0.269	2,037	0.277	0.262	2,341	0.213	0.266	2,200	0.353	0.286
TRU	V109	1,449	0.316	0.320	1,983	0.098	0.357	2,157	0.176	0.316	2,194	0.324	0.365
TRU	V113	1,452	0.293	0.324	2,025	0.239	0.329	2,299	0.144	0.324	2,195	0.168	0.365
TRU	V114	1,440	0.095	0.374	1,993	0.136	0.362	2,189	0.228	0.299	2,188	0.045	0.348
TRU	V115	1,448	-0.157	0.367	2,001	-0.053	0.353	2,166	-0.176	0.321	2,187	-0.133	0.346
TRU	V116	1,446	-0.281	0.297	1,982	-0.206	0.331	2,110	-0.243	0.300	2,188	-0.276	0.281
TRU	V117	1,439	-0.142	0.364	1,978	-0.066	0.345	2,121	-0.205	0.315	2,170	-0.236	0.317
TRU	V118	1,441	-0.036	0.327	2,002	0.023	0.320	2,105	-0.108	0.318	2,182	-0.025	0.321
TRU	V120	1,434	-0.018	0.331	1,958	-0.211	0.348	1,953	0.010	0.301	2,178	-0.108	0.313
TRU	V122	1,442	0.045	0.365	1,986	0.083	0.339	1,878	-0.071	0.330	2,155	-0.022	0.368
TRU	V123	1,446	0.102	0.334	1,788	0.128	0.333	1,692	-0.115	0.321	2,183	0.009	0.335
TRU	V124	1,452	0.169	0.350	1,974	0.179	0.328	1,700	-0.167	0.328	2,180	0.090	0.329
TRU	V126	1,447	0.035	0.394	1,930	-0.046	0.357	1,746	0.052	0.332	2,173	-0.147	0.379
TRU	V141	1,441	0.236	0.359	2,013	0.265	0.286	2,065	0.192	0.312	2,153	0.142	0.338
NOR	V9	1,420	-0.153	0.516	2,037	-0.213	0.476	2,112	-0.290	0.419	2,214	0.225	0.496
NOR	V19	1,477	-0.459	0.538	2,044	-0.560	0.431	2,443	-0.645	0.289	2,232	-0.082	0.703
NOR	V25	1,447	-0.278	0.538	2,044	-0.326	0.506	2,419	-0.596	0.323	2,210	0.008	0.602
NOR	V79	1,453	0.044	0.435	2,029	0.122	0.414	2,208	-0.173	0.349	2,195	0.134	0.396
NOR	V95	1,422	-0.026	0.338	1,865	-0.095	0.283	1,770	0.018	0.298	2,162	0.047	0.322
NOR	V108	1,450	-0.139	0.398	1,995	-0.172	0.423	2,130	-0.405	0.323	2,195	0.096	0.423
NOR	V121	1,448	0.077	0.376	2,011	0.254	0.377	2,158	-0.088	0.314	2,177	0.081	0.350
NOR	V132	1,432	-0.510	0.334	2,001	-0.546	0.319	1,913	-0.539	0.311	2,166	-0.398	0.367
NOR	V145	1,461	-0.344	0.465	2,025	-0.335	0.414	2,415	-0.163	0.293	2,204	-0.064	0.538
NOR	V147	1,462	0.213	0.506	1,998	0.185	0.503	2,005	0.083	0.435	2,199	0.449	0.405
NOR	V152	1,463	-0.026	0.576	2,009	-0.171	0.521	2,148	-0.097	0.424	2,200	0.362	0.467
NOR	V204	1,460	-0.042	0.465	2,003	0.115	0.450	2,090	0.116	0.398	2,167	0.109	0.467
NOR	V205	1,456	-0.252	0.395	2,004	-0.158	0.433	2,126	-0.102	0.419	2,167	-0.110	0.392
NOR	V207	1,454	0.319	0.436	1,978	0.351	0.431	2,183	0.492	0.338	2,158	0.383	0.407
NOR	V218	1,418	0.192	0.381	2,042	0.011	0.425	2,396	0.106	0.416	2,176	0.152	0.395
NET	V37	1,477	0.640	0.301	2,042	0.503	0.497	2,443	0.392	0.588	2,232	0.634	0.314

NET	V39	1,477	0.576	0.410	2,040	0.409	0.577	2,443	0.194	0.680	2,232	0.508	0.492
NET	V41	1,477	0.653	0.270	2,045	0.521	0.478	2,443	0.246	0.663	2,232	0.665	0.241
NET	V84	1,463	0.059	0.444	2,045	0.115	0.429	2,386	0.121	0.354	2,210	0.080	0.448
NET	V105	1,429	-0.057	0.330	2,010	-0.176	0.345	1,992	-0.314	0.286	2,205	-0.117	0.330
NET	V106	1,415	0.090	0.316	1,863	-0.008	0.332	1,498	-0.320	0.332	2,196	0.117	0.313
NET	V107	1,428	0.116	0.287	1,902	-0.006	0.331	1,461	-0.232	0.326	2,187	0.092	0.314
NET	V129	1,426	0.537	0.305	2,015	0.589	0.254	2,048	0.610	0.229	2,170	0.404	0.375
NET	V130	1,435	0.492	0.335	2,020	0.525	0.282	2,005	0.329	0.334	2,164	0.331	0.392
NET	V133	1,442	0.548	0.333	2,035	0.594	0.262	2,098	0.377	0.363	2,167	0.468	0.361
NET	V140	1,446	0.568	0.270	2,030	0.539	0.258	2,164	0.436	0.314	2,193	0.477	0.315

Factor SC	Wave5	CA			FR			UK			Total		
	Ques. No.	Valid Res.	Ave.	St. Dev.	Valid Res.	Ave.	St. Dev.	Valid Res.	Ave.	St. Dev.	Valid Res.	Ave.	St. Dev.
TRU	V10	2,157	0.430	0.283	998	0.350	0.322	1,039	0.436	0.310	12,272	0.362	0.303
TRU	V22	2,157	0.353	0.269	1,000	0.214	0.303	1,038	0.323	0.258	12,297	0.289	0.297
TRU	V23	2,107	-0.111	0.698	996	-0.443	0.551	1,022	-0.277	0.651	12,084	-0.150	0.691
TRU	V46	2,135	0.334	0.289	999	0.183	0.323	1,026	0.276	0.305	12,154	0.251	0.326
TRU	V47	2,125	0.145	0.344	999	0.097	0.333	1,028	0.081	0.348	12,063	0.065	0.349
TRU	V68	2,150	0.235	0.346	996	0.087	0.347	1,029	0.185	0.362	12,171	0.152	0.365
TRU	V84	2,152	0.432	0.264	999	0.323	0.331	1,037	0.350	0.292	12,148	0.218	0.357
TRU	V125	2,148	0.623	0.209	993	0.583	0.276	1,032	0.634	0.202	12,266	0.593	0.237
TRU	V126	2,128	0.257	0.317	988	0.292	0.410	1,009	0.216	0.341	12,016	0.172	0.331
TRU	V127	2,152	0.438	0.277	997	0.528	0.286	1,029	0.462	0.277	12,190	0.360	0.292
TRU	V132	2,077	0.210	0.371	986	0.095	0.414	1,004	0.252	0.378	11,850	0.213	0.367
TRU	V136	2,141	0.266	0.342	997	0.121	0.388	1,026	0.167	0.379	12,135	0.204	0.351
TRU	V137	2,119	0.120	0.381	995	-0.134	0.398	996	0.067	0.397	11,920	0.100	0.372
TRU	V138	2,024	-0.095	0.361	994	-0.233	0.391	999	-0.150	0.385	11,819	-0.134	0.359
TRU	V139	2,050	-0.201	0.324	990	-0.329	0.349	975	-0.260	0.327	11,741	-0.249	0.315
TRU	V140	2,035	-0.106	0.348	981	-0.160	0.378	987	-0.123	0.368	11,711	-0.152	0.348
TRU	V141	1,995	0.022	0.339	1,001	-0.021	0.378	947	-0.046	0.361	11,673	-0.027	0.336
TRU	V142	2,029	-0.105	0.338	983	-0.111	0.382	946	-0.121	0.349	11,481	-0.095	0.341
TRU	V143	2,052	0.145	0.330	986	0.088	0.354	968	0.119	0.351	11,467	0.048	0.355
TRU	V144	1,971	0.165	0.323	935	-0.063	0.389	818	0.113	0.354	10,833	0.051	0.351
TRU	V145	2,040	0.193	0.337	994	0.125	0.399	971	0.191	0.348	11,311	0.107	0.362
TRU	V147	1,952	0.071	0.384	976	-0.002	0.408	905	-0.064	0.401	11,129	-0.017	0.384
TRU	V163	2,070	0.248	0.291	985	0.168	0.325	990	0.143	0.335	11,717	0.205	0.322
NOR	V9	2,149	0.151	0.493	996	-0.114	0.479	1,026	-0.073	0.505	11,954	-0.053	0.519
NOR	V19	2,164	-0.274	0.652	1,001	-0.579	0.407	1,041	-0.457	0.540	12,402	-0.422	0.568
NOR	V24	2,157	-0.137	0.603	996	-0.604	0.328	1,029	-0.314	0.554	12,302	-0.302	0.554
NOR	V89	2,151	0.207	0.429	993	0.014	0.480	1,030	0.136	0.446	12,059	0.068	0.433
NOR	V114	1,624	-0.012	0.295	931	-0.112	0.333	880	-0.033	0.291	10,654	-0.022	0.313
NOR	V131	2,098	0.123	0.420	972	-0.086	0.464	956	-0.026	0.427	11,796	-0.089	0.447
NOR	V146	2,164	-1.179	0.000	1,001	-1.179	0.000	1,041	-1.179	0.000	12,000	-0.362	0.671

NOR	V153	2,043	-0.391	0.333	978	-0.411	0.346	973	-0.318	0.371	11,506	-0.454	0.347
NOR	V186	2,144	-0.130	0.495	997	-0.424	0.403	1,034	-0.297	0.487	12,280	-0.222	0.461
NOR	V187	2,111	0.454	0.414	989	0.212	0.524	1,008	0.272	0.468	11,772	0.278	0.479
NOR	V192	2,139	0.300	0.467	994	-0.128	0.493	1,025	0.012	0.526	11,978	0.061	0.534
NOR	V204	2,071	0.139	0.453	998	-0.146	0.500	974	0.086	0.445	11,763	0.074	0.459
NOR	V205	2,103	-0.095	0.412	997	-0.213	0.459	991	-0.143	0.411	11,844	-0.143	0.419
NOR	V207	2,037	0.431	0.366	988	0.278	0.446	941	0.264	0.430	11,739	0.380	0.408
NOR	V225	2,152	-0.509	0.176	1,001	-0.520	0.177	1,010	-0.522	0.177	12,195	-0.104	0.458
NET	V35	2,164	0.667	0.236	1,001	0.386	0.592	1,041	0.638	0.305	12,400	0.552	0.443
NET	V37	2,090	0.647	0.286	1,001	0.194	0.680	1,041	0.494	0.506	12,324	0.434	0.558
NET	V39	2,164	0.673	0.217	1,001	0.344	0.618	1,041	0.680	0.194	12,403	0.534	0.464
NET	V95	2,156	-0.037	0.451	1,000	-0.168	0.455	1,038	-0.110	0.469	12,298	0.035	0.441
NET	V128	2,117	-0.048	0.344	996	-0.087	0.406	969	-0.072	0.359	11,718	-0.134	0.350
NET	V129	2,069	0.147	0.282	965	0.231	0.409	844	0.166	0.320	10,850	0.051	0.362
NET	V130	2,061	0.113	0.282	980	0.239	0.389	857	0.160	0.312	10,876	0.057	0.343
NET	V150	2,073	0.537	0.308	978	0.457	0.354	986	0.470	0.381	11,696	0.522	0.320
NET	V151	2,016	0.442	0.348	971	0.408	0.341	947	0.445	0.363	11,558	0.420	0.351
NET	V154	2,114	0.498	0.302	990	0.409	0.349	1,003	0.460	0.333	11,849	0.483	0.337
NET	V162	2,127	0.545	0.255	995	0.469	0.288	999	0.490	0.327	11,954	0.503	0.293

Note. TRU: social trust; NOR: religious social norms; NET: political networks.

Sexual Harassment of Female Workers at Manufacturing Sectors in Bangladesh

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Abstract

Women's participation in the national work force is increasing rapidly in Bangladesh. Most of the women are migrated from village to an industrial area for employment, and they are mostly poor and illiterate. The number of female worker in many manufacturing sectors in Bangladesh are comparatively higher than men, and their contribution to GDP is remarkable. However, violence against women at work is an emerging issue globally. Bangladesh is also having the same scenario since it is mainly a dominating male nation. This paper aims to identify the current status and nature of sexual harassment of female workers in Bangladesh. Six In-depth Interviews (IDIs) and four Focus Group Discussions (FGDs) have been conducted among the female workers work in tannery, RMG, and leather footwear manufacturing sectors in Bangladesh. Both IDIs and FGDs are interaction-based, and participants are allowed to do open discussion free from interruption as recommended by Yin (2003). Findings of the study indicate that working women are always in fear of losing their sexual safety and security. Female workers in Bangladesh are not safeguarded by the management in general.

Keywords: Female Workers, Sexual Harassment, Bangladesh

Introduction

Women in South Asia have not remained as the only housewife anymore. Globalization, female education movement, and social reformation have influenced women economically and socially. Nowadays, women are participating in the workforce in order to contribute to family needs and to reduce the financial problem in the family. Women's participation in manufacturing sectors like RMG, Tannery, Bakery, Footwear, Food Processing Industry, Retail, etc. are comparatively more than Men in Bangladesh (Hossan, et al. 2012; Sarker & Afroze, 2014; Sarker & Akter, 2018). However, in this realm, women are always facing numerous problems at their workplace; sexual harassment being one of them. It is a common phenomenon across the globe and particularly

in the dominating male workplace. Sexual harassment in the workplace has been overlooked till the 1990s, now it is considered a big offense globally, and it is also counted as violence of human rights (Britz, 2007; Parveen, 2010; Rubya, 2015; WHO, 2013). Unfortunately, the issue of women's sexual harassment at the workplace globally, and particularly in Bangladesh has not overcome yet (Rahman & Rahman, 2017; Sarker & Akter, 2018). In many cases, women are not safe at the workplace, especially in the manufacturing sector in Bangladesh since they have been harassed either by their male colleagues or supervisors (Ali & Islam, 2017; Sarker, 2014; Sarker & Akter, 2018). The news headline of women rape, murder, and gender discrimination are very common in the everyday newspaper in Bangladesh. Therefore, it has become as serious issues to deal with immediate remedies. This study investigates the different forms of sexual harassment of women at work in the manufacturing sector in Bangladesh and recommends the ways to maintain gender equity at work.

Literature Review

In the late 1970s, the United States of America started using the term “sexual harassment” (Mallow, 2009). Then, in 1979, Catherine Alice Mackinnon, a legal scholar from the USA, came out with an argument regarding sexual harassment in the workplace which discriminates sex, human personality, and dignity. In addition, Mackinnon further clarified that sexual harassment is prohibited by the civil rights law of the United States of America (Mackinnon, 1979; Mallow, 2009). Since then, many national legislatures and international organizations have come up with the general definition of sexual harassment in the workplace. However, there is no universal definition on sexual harassment in the workplace. Nevertheless, scholars and different organizations have come up with several definitions of sexual harassment in the workplace. According to the United Nations (UN), the definition of sexual harassment at the workplace is “*Any unwelcome sexual advance, request for sexual favour, verbal or physical conduct or gesture of a sexual nature or any other behaviour of a sexual nature that might reasonably be expected or be perceived to cause offence or humiliation to another*” (UNHCR, 2005). Another definition is stated by the United Nations General Recommendation-19 in the Convention of the Elimination of all Forms of Discrimination Against Women, 1979. They define the elements of sexual harassment in the workplace as “*Such unwelcome sexually determined behavior as physical contact and advances, sexually colored remarks, showing pornography, and sexual demands, whether by words or actions. Such conduct can be humiliating and may constitute a health and safety problem; it is discriminatory when the woman has reasonable ground to believe that her objection would disadvantage her in connection with her employment, including recruitment or promotion, or when it creates a hostile working environment*” (CEDAW, 1992). Based on the two definitions made by UNHCR and CEDAW-UN, it is very clear that these sensual behaviours strongly but negatively affect women's mind and their nature in the workplace. Thus, it creates a huge negative impact on women empowerment both in the private and public arena. It is also a form of gender discrimination which destroys women's dignity and social status in the family as well as in the society. It is a violation of law on civil rights which is ensured by the constitution of the United Nations. Several studies have identified that women who have experienced sexual harassment in the workplace do not want to continue their jobs with male colleagues (Ali, et al., 2018). In addition, they want to leave the jobs because of sexual harassment, and problems are created for the countries' socio-economic growth in general. Moreover, the country also could not achieve the targeted GDP which they want to achieve by employing both men and women. The researchers feel that, the definition of sexual harassment in the workplace should be:

Unwanted sensual acts which makes a person uncomfortable in the workplace and creates pressure on the victim's mind for which the person cannot focus on job or any kind of behavioral activities, such as verbal, non-verbal, in written form, visual, psychological, or physical contacts, which also generate mental trauma and prevents or influences victim to left the jobs.

Therefore, sexual harassment affects women's performance in their jobs and productivity and creates a threatening working environment. In fact, sometimes, sexual harassment in the workplace may cause death. Consequently, many women do not want to work with male workers, even though they are very efficient in the public and private fields. Most women face or experience sexual harassment and physical assault from their co-

employees in the workplace. Hence, the situation and surrounding become dangerous and not safe for women in the workplace.

Forms of Sexual Harassment in the Workplace

There are several forms of sexual harassment in the workplace. Most of them are very annoying and irritating, while other forms lead to sexual assault. Though sexual harassment takes different forms, all the prevalence is unwelcome, unwanted, and not accepted by female employees in the workplace. Some of the forms of sexual harassments are discussed next. **Verbal harassment** is actually sexual insinuation, suggestive comments, jokes of sexual nature, sexual propositions, or sexual threats (Britz, 2007); these types of remarks or hints are directed to women in order to disturb and get their attention to the harasser are considered as verbal harassment. Sexual harassment also includes various ways to get women's responses by calling them in different names, for instance, calling a person "honey," "sweetheart," "darling," "babe," "dear," etc. In addition, under this type of harassment, men also spread gossip and make open comments on an employee's personal or sexual life (Mallow, 2009). Moreover, verbal harassment also includes passing comments about a female employee's face, appearance, body, dress, makeup, etc. (ILO, 2004). Besides the above-mentioned forms of harassment, some people harass their female colleagues by making phone calls at night and through other forms of electronic communications. **Non-verbal harassment** refers showing the victims suggestive sexual gestures, objects, pictures, graphic commentaries, suggestive or insulting sounds, leering eye contact, licking lips, holding eating foods, whistling, or obscene gestures (Mallow, 2009). These actions also humiliate women's dignity at work. **Written form of harassment** includes hand written and printed materials. It is also a form of sending text or note to the claimant which contains sexual tomes through mobile phone, electronic devices, and other forms of social networks, for instance, hand written sex-oriented short notes, faxes, Short Messages Service (SMS), Multimedia Message Service (MMS), and Electronic mail (E-mail) (Mallow, 2009). **Visual (Environmental) harassment** is something which creates a hostile environment for female workers in the workplace, and it is an indirect hint to the claimants. In this situation, the harasser is trying to paste nude picture in a place where women are passing by as well as sending nude pictures to the claimants. This also includes drawing a sexual object which contains or gives indirect hints of sex (Britz, 2007; Mallow, 2009). **Physical harassment** is a conduct in a sexual nature where people get involved in the form of unnecessary touching, pinching on the cheeks, putting hands at the back, touching private parts of a woman's body during problem-solving and supervision (Mallow, 2009). Another example of physical conduct is brushing employees' body, blocking pathways, neck rubbing, and coercive sexual intercourse. Finally, this kind of unlawful physical conduct forces illegal sexual intercourse between male and female colleagues. **Psychological harassment** includes many forms of harassment, for example, people utilize verbal abusiveness to humiliate someone in front of other co-workers. Another example of psychological harassment is an unwanted invitation, proposing for a date, and proposing for physical intimacy. This type of harassment in the workplace is very dangerous because it affects the victim's mind, and it also destroys the desire to work. Under this category, most of the victims feel nervous, anxious, and depressed when they see or meet any male in the family as well as in society. Sometimes it leads victims to commit suicide (Mallow, 2009).

Sexual Harassment of Working Women in Bangladesh

Women's presence in every manufacturing sector in Bangladesh is comparatively high. The number of working women in Bangladesh are increasing. Their percentage in the national labor force are significant, especially in the manufacturing sectors. There are nearly 5000 RMG factories in Bangladesh that produce fashion wear sold locally and internationally (Rahman & Rahman, 2017; Rubya, 2015). In this RMG sector, approximately 4.2 million workers are working, where more than 90% of the employees are women (Ali & Islam, 2017; Rahman & Rahman, 2017). Women have a great contribution to earn this huge amount of foreign revenue in every financial year, and it increases the GDP of Bangladesh. But, they also face sexual harassment everywhere by their male counter partner, which is truly unfortunate and unacceptable. Female workers in the RMG sector in Bangladesh experience vulnerable situation in terms of sexual harassment from their male colleagues and supervisors (Rahman & Rahman, 2017). Though Bangladesh Labor Act 2006 protects women at work with safety and security, they are raped, murdered and assaulted in many cases by men at the workplace, and unfortunately, there are no rules and regulations to prevent these derogatory activities (Rahman & Rahman, 2017; Rubya, 2015). The

scenario remains the same till today. Female workers in the RMG sector face sexual harassment from their male co-workers, and the percentage is approximately 69% (Rahman & Rahman, 2017). Therefore, the issue of women's equality, safety, and security is still a question, and the solution is overlooked.

Methodology

This study has followed qualitative approach where primary data has been collected to investigate the current status and nature of sexual harassment of women at work in Bangladesh. Since, women feel discomfort to discuss on this highly sensitive issue, data has been collected from working women known in personal network of the researchers. Six In-depth Interviews (IDIs) held in June, 2019 on women working in different manufacturing sectors in Bangladesh. Based on the findings of IDIs, four Focus Group Discussions (FGDs) were held in June and July, 2019 in order to validate and support the findings from IDIs. First FGD was conducted with participation of female workers from RMG sectors in Bangladesh. Second FGD was taken with the discussion of female workers from leather and footwear industry, and the third FGD was with female workers of tannery sector in Bangladesh. The last FGD was conducted with the female supervisors of these three sectors. Both IDIs and FGDs are interaction-based, and participants are allowed to do open discussion free from interruption as recommended by Yin (2003). Identity of the respondents are kept anonymous for confidentiality, and their consents have been taken before using their opinions and comments in findings part. Collected data have been analyzed thematically through a systematic and rigorous process.

Findings and Discussions

Participants of In-depth Interviews (IDIs) have mentioned their personal experiences in regards to sexual harassment. According to the participants of IDIs, sexual violence against women in Bangladesh is not disclosed and widely discussed. The untold stories of women at work in Bangladesh are heart breaking and mysterious. Women are assaulted and victimized at work as like as they are challenged in the family either verbally or physically or sexually (P3, P4 & P6). Participant P5 says, *"The job I do is very tedious, I feel so tired after working three or four hours. One day, I asked my supervisor to give me a few minutes for rest, and he offered me to go for sexual intercourse with him. He said, make my body feel relaxed, your job will be more relaxed then & you will get extra pay and benefit"*. Sexual harassment by male supervisors in many manufacturing sectors in Bangladesh is very common, but not well reported into the media. Participant P1 is an office assistant works in a RMG. She mentioned, *"I work hard to live a standard life. I work with men, and I often feel a lack of privacy and safety. My male colleagues often use embarrassing words while doing conversation. They try to touch my body during work. I am good looking young women, so-called beautiful. In my previous workplace, I entered the room of MD sir one day to clean the room. I did not know about his presence inside the room. As soon as I entered, he locked the room, and started coming closer to me. I tried to go out of the room to save myself, but I couldn't. I screamed and asked for helped, but no one listened. He raped me, and I couldn't protest since no one would believe me. I also had the fear of losing job, and I am a single mother with two kids. I kept quit and left the previous job for this company. I also experience same kind of male colleagues and bosses at this place"*. Participants of the Focus Group Discussions (FGDs) also mentioned that sexual assault for women is very common in manufacturing sectors of Bangladesh. All the participants both in IDs and FGDs are female worker with no formal academic degrees. Some of them can read and write, but many of them are illiterate. They work for food and survival. They are from poor section of the society. Many of them are abounded by their husbands. Most of them are migrated to urban area for work and left their extended family back in the villages. They mostly do the job of manufacturing workers in different sectors like RMG, Tannery, Bakery, Leather & Footwear factories, etc. Many women workers in Bangladesh get job with the support of men who often demand sex in return (F.1.5; F.2.6; F.3.7; F.1.4). Participant P2 mentioned, *"I came to Dhaka with my friend's elder brother who gave me a job in garments factory. He often phones me and meets me after office. One day, he hold my hand and offered love. We were in a relation for one year. We also have sex many times, when I asked for marriage he denied and left me for another girl"*. Women workers in Bangladesh are betrayed, abused, and harassed by their male counter parts in different ways. All the participants of FGDs have raised the issue of bullying at work by their male colleagues. Women listened at least one sexually abusive words in a day spoken either by their male colleagues or supervisors (F.1.2; F.2.4; F.3.5; F.4.8). It is said that women workers are not

given honor and dignity as like as their male colleagues (F.1.6; F.2.2; F.3.6; F.4.7). Women workers are considered to be easily available for sex by the men since they are poor, helpless, and less aware of their rights (F.1.1; F.2.1; F.4.2; F.4.3). The agony and frustration of working women are unseen, and they are still seen as commodity for entertainment both at work and home. Working-class women are always in the fear of losing their sexual safety, and they are not safe-guarded by the management. Therefore, women rights are violated, which is against the humanity.

Conclusion

Women are supposed to be free from any kind of mistreatment, sexual violence, and other forms of assault across the globe. It is the demand of modern teachings and values in this civilized society. Sexual assault creates negative impression on women's mind that, they are subordinates to men, and they have born only for men's satisfaction. All of these mistreatments practised by men onto women is because of ill practices of social norms and cultural traditions. These misjudgments and assumptions have been shown on women's issues in the family and in the society due to ignorance, rigidity, and muscle power of masculinity. Oppression on women in every aspect of life should be demolished since it affects women's personal development in the aspect of financial identity in the family, society, and countries' economic growth in general. As it is to be said behind every successful man there is women, it can also be said differently that someone wants something to be done, it could be the women to be asked. The power of womanhood can never be ignored in any society at all.

References

- Ali, M. M., Solihin, S. M., & Haque, M. F (2018). Empowerment of Women: An Analytical Study from the Islamic Perspective, *The Islamic Quarterly*, 62(2), 303-334.
- Ali, M. L., & Islam, N (2017). Working Environment of Female Readymade Garment Workers in Bangladesh. *Conference: International Academy of Management and Business Conference 2017*, December, 2017, Dubai, United Arab Emirates
- Britz, E. (2007). *The perceptions of employees regarding sexual harassment in an administrative higher educational work environment* (Doctoral dissertation, University of Johannesburg).
- CEDAW Committee. (1992). Committee on the elimination of discrimination against women. General recommendation No. 19. *Violence against women*.
- Hossan, C.G, Sarker, A.R, and Afroze, R. (2012). Recent unrest in RMG sector of Bangladesh: Is this an outcome of Poor Labour Practices? *International Journal of Business and Management*, 7(3), ISSN 1833-3850, Canada.
- ILO (2004). Sexual Harassment at the Workplace in Nepal. (2004). *International Labour Organization (ILO)*, Nepal, Kathmandu.
- MacKinnon, C. A. (1979). *Sexual harassment of working women: A case of sex discrimination* (No. 19). Yale University Press.
- Mallow, Muzaffar Syah Bin. (2009). *Sexual Harassment in the Workplace: The Law and Practice in Malaysia*, Ph.D. thesis, International Islamic University Malaysia.
- Parveen, R. (2010). *Violence against Women in Pakistan*. Islamabad, Aurat Foundation.
- Rahman, T. & Rahman, S. (2017). Work Place Environment of Garment Industry in Bangladesh: An Opinion Survey of the Female Garments Workers, *2nd Putrajaya International Conference on Children, Women, Elderly and Disabled People (PICCWED-2)*. 20-21 May, 2017 Putrajay: Kuala Lumpur.
- Rubya, T. (2015). The Ready-Made Garment Industry: An Analysis of Bangladesh's Labor Law Provisions after the Savar Tragedy. *Brooklyn Journal of International Law*, 40(2), 7.
- Sarker, A.R, and Akter, S. (2018). Impact of Human Resource Management Practices on the Working Life of Tannery Workers in Bangladesh. *Dhaka University Journal of Management*, 12(1), 161-170. January-June, 2018
- Sarker, A.R, and Afroze, R. (2014). Can HRM practices improve job satisfaction of RMG workers in Bangladesh? An alternative solution to recent unrest. *International Journal of Business and Management*, 9(10), ISSN 1833-3850, Canada.
- UNHCR, UNHCR's Policy on Harassment (2005). *Sexual Harassment, and Abuse of Authority*, United Nations High Commissioner for Refugee. April Report.
- World Health Organization, WHO (2013). Department of Reproductive Health and Research, London School of Hygiene and Tropical Medicine, South African Medical Research Council. *Global and regional estimates*

of violence against women: prevalence and health effects of intimate partner violence and non-partner sexual violence, 2.

Yin, R.K. (2003). *Case Study Research: Design and Methods*. Sage. Thousand Oaks, California.

Appendix-I: List of Participant in Focus Group Discussions (FGDs)

SL/ Code	Designation	SL/ Code	Designation	SL/ Code	Designation	SL/ Code	Designation
	FGD on Female Workers in RMG 29/06/2019		FGD on Female Workers in Leather Goods & Footwear Industry 30/06/2019		FGD on Female workers in Tannery 01/07/2019		FGD on Female Supervisors in RMG, Tannery, Leather Goods & Footwear Industries 02/07/2019
F.1.1	Finishing Worker	F.2.1	Packaging Worker	F.3.1	Sewing & Machine Operator	F.4.1	Supervisor in Leather Goods & Footwear (Sewing)
F.1.2	Sewing Worker	F.2.2	Cutting Operator	F.3.2	Buffing & Finishing Worker	F.4.2	Supervisor in Tannery (Quality Control)
F.1.3	Cutting Operator	F.2.3	Production Worker	F.3.3	Hydrolic Machine Operator	F.4.3	Supervisor in Leather Goods & Footwear (Cutting)
F.1.4	Quality Control Assistant	F.2.4	Sewing Worker	F.3.4	Quality Control Assistant	F.4.4	Supervisor in Tannery (Finishing)
F.1.5	Machine Operator	F.2.5	Lasting Worker	F.3.5	Raw Leather Cleaning Worker	F.4.5	Supervisor in RMG (Sewing)
				F.3.6	Leather Preserving Worker	F.4.6	Supervisor in Leather Goods & Footwear (Production)
F.1.6	Office Assistant	F.2.6	Quality Controller	F.3.7	Cutting Operator	F.4.7	Supervisor in RMG (Packaging)
				F.3.8	Leather Ironing Worker	F.4.8	Floor in charge in RMG

Appendix-II: List of Participants (Female Workers) in In-depth Interviews

SL/Code	Participants' details	Date
P1	Office Assistant in a RMG	23/06/2019
P2	Machine Operator in a RMG	24/06/2019
P3	Cutting Worker in a Leather Goods & Footwear Company	25/06/2019
P4	Sewing & Machine Operator in a Leather Goods & Footwear Company	26/06/2019
P5	Leather Preserving Worker in a Tannery	27/06/2019
P6	Buffing & Finishing Worker in Tannery	28/06/2019

Vietnam Economic Structure and Greenhouse Gas Emission Based on Input-Output Analysis

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Abstract

Over the years, Vietnam has a relatively high growth rate of gross domestic product (GDP) compared to other countries in the region, an average increase of 6.1% in the period of 2005 - 2016. However, the macro instability such as the budget deficit, public debt, the economy's debt is always high, the environment is more risky. In Vietnam, in the reports, even research articles are automatically admitted that the structure of Region II (industry and construction) and Region III (service) in GDP needs to grow and see it as an economic development in the right direction. From that, the idea of economic restructuring is to promote both Region II and Region III; The investment rate of this area is increasingly higher, if it is always very high in 2005 to 2015, it was around 43% in 2005 and nearly 50% in 2016, but the irony is that the value-added ratio compared to the value of production of this sector (region II) fell surprisingly fast; this ratio follows the structure of 2000, the structure of the input-output tables in 2007 of General Statistics Office of Vietnam) is 34.1%, in recent years (the structure of the new input-output tables) is only 21%. This means that this region is increasingly inefficient, resulting in an increasing amount of investment to compensate for that inefficiency. This research is based on Vietnam economic structure from the input-output table, 2012, that was published by Vietnam General Statistics Office, this research focused to analysis deeper on sectoral structure, inter-sectoral and effects induced impacts by final demand to output, value-added and greenhouse gas (GHG) emissions based on the approach of input-output analysis. This study hopes to help policymakers make rational decisions for sustainable development in Vietnam

Keywords: Backward, Forward, Linkage, Power of Dispersion, Sensitivity of Dispersion, Greenhouse Gas

JEL Classification: D57, R10, C67, R19, O00, B40

Highlights of this paper

- This study uses an input-output analysis method to examine the current status of inter - industrial structures in the Vietnamese economy,
- The results show that Vietnam's economy is not sustainable. The policies seem to favor the industry that emits many greenhouse gas effects

I. Introduction

Over the years, Vietnam has a relatively high growth rate of gross domestic product (GDP) compared to other countries in the region, an average increase of 6.1% in the period of 2005 - 2016. However, the macro instability such as the budget deficit, public debt, the economy's debt is always high, the environment is more risky. In Vietnam, in the reports even research articles are automatically admitted that the structure of Region II (industry and construction) and Region III (service) in GDP needs to grow and see it as an economic development in the right direction. From that, the idea of economic restructuring is to promote both Region II and Region III. The investment rate of this area is increasingly higher, if it is always very high in 2005 to 2015, it was around 43% in 2005 and nearly 50% in 2016, but the irony is that the value-added ratio compared to the value of production of this sector (region II) fell surprisingly fast; this ratio follows the structure of 2000, the structure of the input-output tables in 2007 of General Statistics Office of Vietnam) is 34.1%, in recent years (the structure of the new input-output tables) is only 21% This means that this region is increasingly inefficient, resulting in an increasing amount of investment to compensate for that inefficiency.

The notion of economic structure was proposed by W. Leontief (1941) to analyze the structural change of the US economy based on the input-output tables in 1919 and 1929. Since then, input-output analysis method has been developed by many modelers such as W. Leontief (1970), Schoonbeek, L. (1990), Ebiefung, A.A., Udo, G. (1999), Dobos, I. and Floriska, A. (2005), Yu Fan et al. (2016) W. Leontief (1970), Schoonbeek, L. (1990), Ebiefung, A.A., Udo, G. (1999), Dobos, I. and Floriska, A. (2005), Yu Fan et al. (2016). In this study, some of the main structures of the Vietnamese economy are indicated by absorption matrix, which was developed by Chenery and Watanabe (1958), Interdisciplinary structure determined through intermediary costs and consumption and the relationship between production value, incremental value, and final demand.

Today, in parallel with the System of National Accounts (SNA), the United Nations also introduces a System of Environmental-Economic Accounts, SEEA, if the traditional input-output framework is the center of the System of National Accounts, then the Hybrid input-output framework is the center of the System of Environmental-Economic Accounts.

In Vietnam, there are also some studies that apply the input-output frameworks in the analysis and measurement of economic and environmental structures through waste matrix such as T. Bui (2011), T. Bui and Q. Bui (2017), Thai, N. Q. et al. (2019).

This study used the input-output tables in 2012 and the Greenhouse Gas (GHG) matrix published by the Ministry of Natural Resources and Environment in 2014.

II. Methodology

1. *Competitive and non-competitive input-output table*

The competitive input-output table includes both domestically manufactured and imported products, intermediary consumption, and final demand; the non-competitive input-output table is a table which has already separated the imported products from intermediary consumption and final demand.

Leontief relation of input-output table

$$A.X + Y = X \quad (1)$$

Where X is the production value matrix, $A = (a_{ij})$ is the direct cost factor matrix with $a_{ij} = X_{ij}/X_j$, Y is the final demand matrix

$$Y = C + G + I + E - M \quad (2)$$

Analysis of matrix A and vector Y by using domestic and imported products, equation (1) can be rewritten:

$$A^d.X + A^m.X + C^d + C^m + G^d + G^m + I^d + I^m + E = X \quad (3)$$

$$G^d + C^d + I^d + E = Y^d$$

And notice that $A^m \cdot X + C^m + G^m + I^m = M$

From equations: (1), (2) and (3), we have:

$$A^d \cdot X + Y^d = X \quad (4)$$

And Leontief relation for non-competitive input-output model has form:

$$X = (I - A^d)^{-1} \cdot Y^d \quad (5)$$

With $(I - A^d)^{-1}$ is the Leontief inverse matrix and Y^d is the domestic final demand matrix, including the final products in the country, accumulated products produced in the country, and exported products. The matrix X denotes the production value that is diffused by the elements of the final demand.

Back link is defined $B_j = \sum B_{ij}$; reflects the expansion of a sector when using other sector's products as input costs. Forward link $B_i = \sum B_{ij}$, indicates the level of production depending on inputs from other sectors. Guo and Hewings (2001) explain that increased back link will create a greater demand for inputs from other sectors and increased forward link will lead to changes in the sensitivity of the output to other sectors.

From these ideas, the diffusion index and the sensitivity of each sector are determined:

$$\text{Power of dispersion index: } P_j = B_j \cdot (n / T) \quad (6)$$

$$\text{Sensitivity of dispersion index: } S_i = B_i \cdot (n / T) \quad (7)$$

n is number of sectors in the input-output table

Where: n ; a number of sectors surveyed in the table I/O; $T = \sum B_{ij}$

Let v be vector as value-added coefficient with $v_i = V_i / X_i$. Here, V_i is the added value of sector i and X_i is the production value of sector i . From (5) we have:

$$V = v \cdot (I - A^d)^{-1} \cdot Y^d \quad (8)$$

Similarly, e is the direct emission coefficient matrix by sector with $e_{ij} = E_{ij} / X_j$. Here, E_{ij} is the amount of direct waste produced by sector j in the production process. From (5) we have:

$$E = e \cdot (I - A^d)^{-1} \cdot Y^d \quad (9)$$

From there we can estimate the vector of the factorial in terms of production value (GOM), value added (VAM), and Waste (EM) as follows:

$$GOM = X \div \sum Y \quad (10)$$

$$VAM = V \div \sum Y \quad (11)$$

$$EM = E \div \sum Y \quad (12)$$

Where: \div shows scalar division

III. Research results

About indexes of power of dispersion and sensitivity for dispersion

The research results about diffusion index and sensitivity from Table 2 shows that group of agriculture, forestry and fishery (sector no.1), group of food processing industry, beverages and tobacco (sector no.3), production of products from oil and gas (sector no.5) and other manufacturing industries (sector no.10) have both the sensitivity and diffusion higher than the general average of the economy quite a lot, this shows that these 4 groups not only strongly stimulate other sectors in the economy but also make the input needs of the economy quite large. Most service industries do not have good diffusion and sensitivity, especially in the scientific and technological industries have the level of diffusion and sensitivity lower than the average level, this shows that the group of the sector does not diffuse anywhere and sectors in the economy do not need it much.

Table 1. Backward linkage, forward linkage, Power of dispersion and sensitivity for dispersion of the Vietnam economy (equations 5, 6, 7)

No.	Economic sector	2012			
		Back Linkage (BL)	Power of dispersion index	Forward linkage (FL)	Sensitivity of dispersion index
1	Agriculture, forestry, and fishery	1.688	1.104	2.299	1.504
2	Mining	1.396	0.913	2.219	1.452
3	Food processing industry, beverages, and tobacco	2.263	1.480	1.657	1.084
4	Production of textile products, costumes, and leather goods	1.551	1.014	1.364	0.892
5	Production of products from oil and gas	1.749	1.144	1.923	1.258
6	Production of chemical products	1.558	1.019	1.461	0.955
7	Production of non-metallic mineral products	1.582	1.035	1.304	0.853
8	Manufacturing and processing metals and metal products	1.464	0.957	1.752	1.146
9	Manufacturing equipment and machinery	1.377	0.901	1.294	0.846
10	Other manufacturing industries	1.778	1.163	2.489	1.628
11	Production and distribution of electricity, gas, hot water, steam, and air conditioning	1.183	0.774	1.337	0.874
12	Water supply; waste and wastewater management and treatment	1.385	0.906	1.106	0.724
13	Construction	1.697	1.110	1.153	0.754
14	Transportation of warehouses	1.603	1.048	1.442	0.943
15	Wholesale and retail; Hotel and restaurant	1.466	0.959	1.722	1.126
16	Information and communication	1.538	1.006	1.420	0.929
17	Financial activities, banking, and insurance	1.363	0.892	1.546	1.011
18	Professional, scientific and technological activities	1.355	0.886	1.229	0.804
19	Education and training	1.184	0.775	1.029	0.673
20	Health and social assistance activities	1.655	1.082	1.008	0.659
21	Other service sectors	1.271	0.831	1.353	0.885

Source: Calculations from I/O table 2012 of Vietnam General Statistics Office

Value-added and import multipliers (equations: 3,4,8)

In many cases, the increase in demand-side stimulates the supply side but at the same time stimulates imports and does not induce so much to value-added, further research has shown that although some sectors (sector number 4) was induced impacts strongly to production but how does it induce to value-added ($GDP = \sum \text{value-added} + \text{tax on product}$), and how it does not induced to imports? A sector that is considered as a high importance is high sensitivity and diffusion index sectors, but it is low diffusion to imports and high diffusion to value-added. Table 3 shows that in the four sectors with high sensitivity and diffusion index, only the agriculture, forestry, and fishery sectors met this requirement. Most sectors of the manufacturing and processing industries have a high sensitivity and diffusion index but strongly stimulate the import and diffusion to the value-added is much lower than the general average. This shows that the manufacturing and processing industries in Vietnam are mainly outsourcing and the level of outsourcing is increasingly high. Interestingly, most service sectors with a low diffusion index to imports, and diffusion to added value are higher than the average, but these sectors have relatively low sensitivity and diffusion index to output. In order to improve this issue, it may give an important

solution is that if Vietnam enhances its auxiliary products to meet inputs for a group of the service sector, and service sector must also develop to meet the needs of other sectors in the economy. This will lead to increased sector linkages through increased diffusion and sensitivity, thereby creating a strong motivation for the economic development of the country. However, "policy resources," especially tax policy, are not aimed at this issue. For example, on indirect tax, there are two issues: First, indirect tax for FDI enterprises are entitled to enjoy preferences on tax policies, most FDI enterprises do the outsourcing and export, these enterprises, due to direct export, so the input of imports get tax incentives, while local enterprises are not entitled to get tax incentives if they are in domestic sales, we can see that the call on the production of auxiliary products for the past 10 years cannot become true? The import-export tax policy does not show any action, it shows the flatness among different types of businesses and secondly, when most of the production in Vietnam is outsourced, the Vietnamese people in fact use Vietnamese goods as well as use imported goods in other forms only, use the products of FDI enterprises in this case too, so the contribution of the FDI region to the budget needs to be differentiated between indirect taxes and direct taxes, because the indirect tax is paid by the Vietnamese people to the budget, FDI enterprises contribute only corporate income taxes.

Table 2. Value added and import multipliers

No.	Economic sector	2012		
		Diffuse to added value	Average diffuse index to the added value	Average diffuse index to import
1	Agriculture, forestry, and fishery	0.684	1.024	0.952
2	Mining	0.654	0.979	1.042
3	Food processing industry, beverages, and tobacco	0.625	0.935	1.130
4	Production of textile products, costumes, and leather goods	0.560	0.838	1.327
5	Production of products from oil and gas	0.483	0.722	1.560
6	Production of chemical products	0.511	0.765	1.474
7	Production of non-metallic mineral products	0.663	0.992	1.016
8	Manufacturing and processing metals and metal products	0.431	0.645	1.716
9	Manufacturing equipment and machinery	0.388	0.581	1.845
10	Other manufacturing industries	0.538	0.806	1.392
11	Production and distribution of electricity, gas, hot water, steam, and air conditioning	0.879	1.316	0.364
12	Water supply; waste and waste management and treatment	0.772	1.154	0.689
13	Construction	0.578	0.864	1.274
14	Transportation of warehouses	0.604	0.904	1.193
15	Wholesale and retail; Hotel and restaurant	0.798	1.195	0.608
16	Information and communication	0.682	1.020	0.959
17	Financial activities, banking, and insurance	0.869	1.300	0.396
18	Professional, scientific and technological activities	0.822	1.230	0.536
19	Education and training	0.928	1.388	0.218
20	Health and social assistance activities	0.680	1.018	0.964
21	Other service sectors	0.886	1.325	0.345

Source: Calculations from I/O table 2012 of study group

Impacts on the environment (equation: 9)

This study focused on greenhouse gas emissions generated during production. Table 3 shows the sector groups number 1, 2, 3, 7, 10, 12, 13 has a higher level of greenhouse gas emissions than the economy average. Especially, the No. 7 sector (Production of non-metallic mineral products) has a greenhouse gas emission of 3.5 times higher than the average level, the No. 1 sector (Agriculture, forestry, and fishery) has a greenhouse gas emission of 2.6 times higher than the average and sector 13 (construction) has emissions. 2.5 times higher than the average level

Notably, the agriculture, forestry, and fishery sectors have taken into account the uptake of greenhouse waste from the forestry sector, but the greenhouse gas emissions of this sector are still higher than the average emission of more than 2.5 times.

Final demand of services sector group induced to high value-added and greenhouse gas low at almost sectors.

Table 3. Greenhouse gas emissions from production

No.	Economic sectors	2012	
		Greenhouse emissions (GHG) are induced by added one unit in final demand	Influence level average
1	Agriculture, forestry, and fishery	0.103	2.573
2	Mining	0.044	1.104
3	Food processing industry, beverages, and tobacco	0.060	1.497
4	Production of textile products, costumes, and leather goods	0.017	0.427
5	Production of products from oil and gas	0.029	0.714
6	Production of chemical products	0.025	0.636
7	Production of non-metallic mineral products	0.141	3.523
8	Manufacturing and processing metals and metal products	0.012	0.302
9	Manufacturing equipment and machinery	0.024	0.602
10	Other manufacturing industries	0.069	1.732
11	Production and distribution of electricity, gas, hot water, steam, and air conditioning	0.017	0.417
12	Water supply; waste and waste management and treatment	0.080	1.998
13	Construction	0.099	2.472
14	Transportation of warehouses	0.021	0.527
15	Wholesale and retail; Hotel and restaurant	0.021	0.534
16	Information and communication	0.019	0.479
17	Financial activities, banking, and insurance	0.003	0.081
18	Professional, scientific and technological activities	0.009	0.228
19	Education and training	0.005	0.123
20	Health and social assistance activities	0.025	0.633
21	Other service sectors	0.016	0.398

Source: The author's calculation based on the table I/O 2012 and reports of the Ministry of Natural resources and Environment.

Induced impacts of factors of final demand to output, value-added, import and greenhouse gas (equation: 10, 11, 12)

Table 4 shows that exports of commodities diffuse to the lowest added value, but strongly diffuse to imports, and it is more dangerous that production for exports of commodities is the largest source of greenhouse gas emissions among the elements of the final demand, Meanwhile, service exports produced the least greenhouse gas emissions but generated the most added value

According to the report of the Ministry of Natural Resources and Environment, it is estimated that by 2010 Greenhouse gas emissions GHG will be around 247 million tons, the calculation of the study group shows that GHG will be 300 million tons by 2012, which has an average annual increase of 10% while on the average GDP increased approximately 6% from 2010-2012. It is seemed illogical to the export priority policy both in terms of tax and credit policies. It seems that resources on policy showed the wrong place one more time.

Table 4. *Induced impacts of factors of final demand to output, value-added, import and greenhouse gas*

	Final consumption	Gross capital formation/ Accumulation	Exports of goods	Exports of services	Total (Million tons)
Output	1.744	1.799	1.788	1.601	
Value added	0.72	0.58	0.56	0.76	
import	0.28	0.42	0.44	0.24	
greenhouse gas emissions (million tons)	77	65	152	6	300
Structure of GHG	25.70%	21.70%	50.70%	1.90%	100%

Source: *The calculations based on the table I/O of the study group and data of the Ministry of Natural resources and Environment*

IV. Conclusion

The result of study shows that the current economic structure and policy priorities is not towards the sustainable growth, meanwhile on the average the GDP in the period of 2005-2017 has been increased around 5.7% (GDP growth in 2017 is 6.81%) and in 2017 manufacturing and processing industries have been increased by 14.5% (according to comparative price), corresponding to 8-10% of greenhouse gas emission growth. Accordingly, by 2020 if the economic structure has not been changed and the green growth has not been invested, greenhouse gas emissions (GHG) will be 550 million tons, which is higher than that forecasted by United Nation to Vietnam (by 2020 it can be 466 million tons).

In terms of manufacturing industries, the processing industry diffuses to a low added value but high greenhouse gas emissions.

In terms of demand, exports of goods diffuse to a low added value but the highest greenhouse gas emissions among the elements of the final demand (final consumption, asset accumulation, exports of goods and services). However, all policies seem to be in favor of exports. It is a waste of policy resources.

Recommendations

It is necessary to choose the appropriate policy for sustainable development, such as:

1. There should be consistent and harmonious policies not only between institutional sectors such as State-owned enterprises, FDI enterprises, non-state owned enterprises, and household sectors but also between the enterprises in the same type of institution.

2. Agro-forestry-fisheries sector has all economic indicators such as diffusion, sensitivity to good production, and added value, but it also a major cause of greenhouse gas emissions. Policy, capital, high-quality labor resources are necessary to progress to green agriculture for this sector.
3. The result of the study are similar to Nguyen Hong Son's study on "Service in Vietnam 2020: Towards quality, efficiency and modernity"⁸ as service sector diffuse well to income and less greenhouse gas emissions, but diffuse to production values and sensitivity is slightly low. If diffusion and sensitivity of this sector increase, the growth is not only high, enough quality, but also sustainable. For increase of diffusion and sensitivity, real specific priority policy is necessary for domestic auxiliary industries, particularly auxiliary production sectors for the input of the service sectors.
4. The study shows that the most important resource for sustainable and fast development is "policy resource." It is necessary to determine the specific destination, growth without environment, or sustainable growth? If GDP growth in all costs does not need macroeconomic instability such as debt, overspending, and environmental damage, this study will not make sense!
5. A flexible policy is necessary to deal with the elements of the final demand. This study shows that at the moment, the exports do not diffuse much to added value; only the imports and greenhouse gas emissions (GHG) are the biggest among the elements of the last demand.
6. Promote science, technology, and innovation under new institution, the quality of human resources needs to be improved urgently and in fact, to structure the income in total added value.

References

- CHENERY, H. B., WATANABE (1958), T. *International comparisons of the structure of production*. *Econometrica*, v. 26, n., p. 487-521, 958.
- Dobos, I., Floriska, A., 2005. *A dynamic Leontief model with non-renewable resources*. *Economic Systems Research* 17, 319–328.
- Ebiefung, A.A., Udo, G. (1999) *Human factors affecting the success of advanced manufacturing systems*, *Ergonomic, human factors engineering, IE education*, Volume 37, Issues 1–2, October 1999, Pages 297-300
- Guo, D. and Hewings, G. J. D. (2001). *Comparative Analysis of China's Economic Structures Between 1987 and 1997: An Input-Output Prospective*. Discussion Paper at Regional Economics Applications Laboratory. Urbana.
- Ministry of National Resource and Environment "THE INITIAL BIENNIAL UPDATED REPORT OF VIETNAM TO THE UNITED NATIONS FRAMEWORK CONVENTION ON CLIMATE CHANGE" VIETNAM PUBLISHING HOUSE OF NATURAL RESOURCES, ENVIRONMENT AND CARTOGRAPHY, 2014
- Nguyen Hong Son *Service in Vietnam 2020: Towards quality, efficiency and modernity*. Hanoi National University Publishing House, 2010
- Schoonbeek, L. (1990) *The Size of the Balanced Growth Rate in the Dynamic Leontief Model*, Economic Systems Research Volume 2, 1990 - Issue 4
- Sonis, M. and Hewings, G. J. D. (1999). *Economic landscapes: Multiplier product matrix analysis for multiregional input-output systems*. *Hitotsubashi Journal of Economics*, 40(1): 59–74.
- Thai, Nguyễn Quang, Trinh, Bui, Anh, Vu Tuan, and Nhung, Nguyen Hong. (2019) Some Issues on Vietnam Economy. In: *Journal of Economics and Business*, Vol.2, No.3, 739-748.
- To TrungThanh, Nguyen, V. P. and Trinh Bui. (2016). *Some comparisons between the Vietnam and China's economic structure, policy implications*. *Advances in Management & Applied Economics*, 6(3): 153-66.
- Trinh Bui, Kiyoshi Kobayashi, Nguyen Van Huan, Pham Le Hoa (2012) *An Integrated Framework for Multi-Purposes Socio-Economic Analysis Based on Input-Output Model*, *British Journal of Economics, Finance and Management Sciences*, Vol 4
- Trinh Bui and Quoc Bui "Some Problems on the Sectoral Structure, GDP Growth and Sustainability of Vietnam" *Journal of Reviews on Global Economics*, 2017, 6, 143-153
- United Nation, OECD, European commission, Food and Agriculture Organization of the United Nations, IMF, WB (2014) *System of Environmental-Economic Accounting 2012-Central Framework*, United Nations New York.
- United Nation, OECD, European commission, Food and Agriculture Organization of the United Nations, IMF, WB (2009) *System of National Accounts, 2008*, New York

- Yu Fan et al. (2016) *Relationships among Depression, Anxiety, Sleep, and Quality of Life in Patients with Parkinson's Disease in Taiwan*, Hindawi Publishing Corporation Parkinson's Disease Volume 2016, Article ID 4040185, 8 pages
- Wassily, L. (1941). *Structure of the American economy, 1919-1929*. Harvard University Press: Cambridge Mass.
- Wassily, L. (1970) *Environmental Repercussions and the Economic Structure: An Input-Output Approach*, The Review of Economics and Statistics, 1970, vol. 52, issue 3, 262-71

Appendix

Sectors in research

No.	Economic sector
1	Agriculture, forestry and fisheries
2	Mining industry
3	Production of foods, beverages and cigarettes
4	Production of textile products, costumes and leather products
5	Manufacturing petroleum and gas products
6	Production of chemical products
7	Production of non-metallic mineral products
8	Manufacturing and processing metals and metal products
9	Production of equipment and machinery
10	Other manufacturing and processing industries
11	Production and distribution of electricity, gas, hot water, steam and air conditioner
12	Water supply; Waste water, sewage management and treatment activities
13	Construction
14	Logistics
15	Wholesale and retail; Hotel and restaurant
16	Information and communication
17	Financial, banking and insurance activities
18	Professional, scientific and technological activities
19	Education and training
20	Health and social support activities
21	Other service sectors

Inter-Sectoral Key Success Factors of Small and Medium Scale Enterprises in Ghana

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Abstract

SMEs are a major source of livelihood for most people in the developing world, but most of them fail within a very short period. Several studies have been conducted on SME success, but the focus is usually on one section of SMEs, with no study yet on a cross-section of SMEs to allow inter-sectoral comparisons. This study, therefore, set out to conduct an inter-sectoral study amongst 600 SMEs with 150 SMEs each from the agriculture, hospitality, manufacturing and trading sectors in Ghana. There may be inherent differences between the success factors for the various SME sectors and as such, the need for a study that cuts across four sectors to better inform policy and investment decisions. The study employed a survey strategy to obtain quantitative data through the random distribution of questionnaires. The data were then coded into NCSS 19 software. Multiple regression was used to analyze data, and generalizations were made based on these analyses. From the findings, there is no key success factor common to all four factors. However, number of employees affect three sectors, namely: agriculture, manufacturing, and trading sectors. Infrastructure and education affect the agriculture and manufacturing sectors. Cost control and access to finance affect both the hospitality and manufacturing sectors. Some factors are peculiar to specific sectors, for example, tax and business plan for the hospitality sector, leverage, and inflation for the manufacturing sector while work experience, training, and marital status affect the trading sector. The study makes recommendations based on the findings of the study.

Keywords: SMEs, Sector, Agriculture, Hospitality, Manufacturing, Trading, Regression

1. Introduction

Estimated data indicate that a little less than 100% of businesses globally are SMEs (Ayyagari et al., 2011). In the year 2008, the number of SMEs in India were about thirteen million (Ghatak, 2010) while according to (Abor and Quartey, 2010), about ninety-one percent of businesses are SMEs in South Africa. Also here in Ghana, an estimate of eighty-percent of SMEs operate in the informal sector Ghana Statistical Service (GSS, 2009) and the SME sector as opined by (Abor and Quartey, 2010), contribute seventy percent to the nation's economy and make up ninety-two percent of total businesses.

Every country has a different definition of SMEs with no single definition in place. Storey (1994) explains that it is appropriate to use an upper limit of one hundred employees for small firms because of the productivity

increase over the last twenty years. Bouri et al. (2011) define small enterprises as businesses having fifty employees or less and €10m in turnover and medium enterprises as businesses with fewer than two hundred and fifty employees and having less than €50million in turnover. The most frequently used criterion in Ghana is the employee size (Agyapong et al., 2010). The GSS, NBSSI, GEDC, and other persons employ the size and other categories to define SMEs in Ghana (Mensah, 2004). The Ghana NBSSI employs the fixed asset together with the employee size distinction (NBSSI, 2009). It defines an SSE as an enterprise having nine employees or less and fixed assets (excluding land, buildings, and vehicles) not exceeding GHS10m.

Abor and Biekpe (2006) define SSEs as having fewer than thirty employees and later broke it down into: Micro Enterprise (six workers or less); Very Small Enterprises (between six and nine workers); and Small Enterprises (between ten and twenty-nine employees). It is evident from the above numerous definitions of SMEs that any research on the operations of SMEs will be confronted with a multiplicity of definitions (Buame, 2012). By implication, researchers, organisations, nations, and individuals globally are likely to formulate their own definitions to suit their particular "target" group (Storey, 1994). Consistent with the definition of SMEs globally, the definitions of (Abor and Biekpe 2006; NBSSI, 2009) will be synthesized and adopted. For the purpose of this study, businesses with less than six (6) employees and those with more than 5 employees but not exceeding 29 employees will be classified as small and medium enterprises, respectively.

When it comes to the role of SMEs in a country's economy, there are many studies that have documented it. The SME sector determines whether a nation is successful or not with regards to job creation (Wiese, 2014). SMEs play major roles in economic development in emerging countries (Kongolo, 2010). Liedholm and Mead (1998) confirm that SMEs close down more often than they expand. SMEs encounter various challenges which are caused by complex and multidimensional factors (Stephanou and Rodriguez, 2008). In Ghana, a third out of five SMEs fail initial stages (Mensah, 2004). SMEs deserve much-needed attention as a result of this sector's contribution to the National Economy (Schröder and Rodermund, 2006; Wiese, 2014) in order to thrive and blossom in their operations.

There are some existing studies on factors that drive SMEs success and those that impede SME success, for example (Alimo, 2015; Donkor, 2011). While other studies have focused on single sectors such as textile industry, there is no study yet on a cross-section of SMEs and inter-sectoral comparisons to identify whether differences and similarities exist in as far as the issues this study seeks to investigate are concerned. Since SMEs in the various sectors are different by their nature and therefore factors that drive their growth may also differ, it will be relevant to have a study that looks at intersectoral similarities and differences because that will better inform policy decisions right from the micro to the macro level in a much better fashion so that it would not be a "one size fits all" so that factors that will suit the manufacturing industry are not applied to the services industry or other sectors within the economy. This study will help determine whether there are differences in the various sectors in terms of their success factors and challenges they face. Those that researched various sectors also were regional studies which were limited in terms of sample size and scope. The growth rates of firms in different sectors vary, and this could be as a result of the inherent differences in the various sectors since factors that drive their growth, as well as available incentives, may differ. This study will help determine whether the researcher can generalise these findings across the country. This study goes beyond one region but uses two regions in Ghana to give a better representation of the country as a whole.

1.1 Research focus

The aim of this study is to identify the success factors of the various SME sectors to encourage SME growth. The researcher established the research questions below to direct this research:

1. What are the factors of SME success per existing literature?
2. What are the key success factors for the various SME sectors?
3. What are the similarities and differences in these sectoral success factors?

The overall value of this research is to contribute to the existing literature on inter-sectoral SME success factors. This will be useful to government, financial institutions, and policy makers provide the needed support to both new and existing SMEs as well as generate motivational strategies for SMEs success.

A study of this nature is vital to the economic development of a nation. This study is going to enlighten the SMEs in the various sectors on the factors needed for their growth and survival.

2. Literature Review

This section evaluates previous research to provide the necessary background for this study. It starts with definition of key concepts (growth and success). Further, the theoretical and empirical literature on SMEs are reviewed. This study reviewed some articles from different academic journals, and it discovered different variables or factors that influence or affect firm success either positively or negatively. Lastly, it outlines a compilation of hypotheses based on the empirical literature review of the study.

2.1 Growth Defined

Small businesses at their initial stage of production or operation usually produce or operate at a pace that is below what their industry expects from them. The failure of to operate at a rate that is the bare most minimum expected of their industry will put them at risk of winding up due to an unfair disadvantage they get from larger firms enjoying economies of scale and scope. Many small businesses can achieve the minimum level of efficiency through selling to target and uncompetitive markets. Growth, as explained by (Penrose,1959), means an incremental change in objects that are quantifiable. Delmar, et al. (2003) suggests a researcher has a wide range of measurement options when deciding on an indicator of growth, such as assets, profit, sales, and employment.

2.2 Success Defined

(Foley & Green, 1989) Suggests that success relates to the performance of a firm from a financial standpoint, but success can also be interpreted in diverse ways. Perren (2000) also affirms this notion that some researchers define success based on the tangible nature of what is being measured, such as revenue, growth, and profitability. When it comes to the definition of success (Perez & Caninno, 2009) explain that there is no single definition or consistency from researchers. Performance for (Sandberg et al., 2002) is the ability to commence a business, make it grow and survive as well as generating jobs and income from the business. The performance of a firm is significantly affected by macroeconomic factors(Hawawini et al., 2003).

2.3 Theoretical Perspective

To give a better understanding about firm growth, the three models (stochastic model, human capital model, and the learning-by-doing model) of small firm growth as suggested by Brock and Evans (1986) will be discussed in this section.

Stochastic Model

In this model, the likelihood of a the growth of a firm is dependent on sheer chance, and the distribution of firm sizes in an industry portray these processes. The Stochastic Model is in line with the Law of Proportionate Effects first opined in 1931 by Gibrat which suggests that the anticipated rate of growth of a firm is independent of the initial size of the firm during the time when examination occurred. In O'Farrell and Hitchens' description of the stochastic growth model in (1988), explain that there are three components (constant market growth rate, the potential for firm growth to have a relationship with its initial size and a random term for growth) which sum up firm growth and these.

Human Capital Model

This model was first developed by Lucas (1978). He asserted that an entrepreneur's ability to succeed in business is dependent on some business or management ability the owner-manager possesses. He further suggested that workers have different skills and so consequently, the distribution of firm size is dependent on the talents and skills of entrepreneurs and employees. Human capital is paramount to the firm's internal environment because the personal characteristics of the owner-manager can be found in this internal environment (Gibb and Scott,

1985). Factors such as the age of the owner, attitude towards growth, occupational background, education level attained, and training have been known to affect firm growth (O'Farrell and Hitchens, 1988).

Learning Model

This model was conceived by Jovanovic (1982) and suggests that it is only after a firm has started producing that its efficiency can be ascertained and a firm will have to alter its behaviour to be highly efficient. Firms that enhance their ability will expand, while firms that fail to improve on their abilities tend to shrink or wind up (Liedholm and Mead, 1999; Storey, 1994). This model implies that both firm age and size are key for firm dynamics. It predicts that the relationship between a firm's growth rate and its age and size is inversely proportional (Liedholm and Mead, 1999). The learning model, therefore, combines the major components of both the stochastic and human capital model, as discussed above.

2.3 Empirical Review-Objective 1

In this section, the researcher explores what factors are needed for SME growth.

Demographic Factors

Male owned firms exceed female-owned firms with a high failure rate for female-owned firms (Kantor, 2001; Chell, 2001). Owner characteristics like gender, age, education, experience, and managerial skills are critical for SME success (Lampadarios et al., 2017). Martey et al. (2013) posit that the age, marital status, and education of entrepreneur have positive impacts on performance.

Training and Number of Employees

Lim (2004) postulates that businesses that invested in training programs for their employees had better performance as a result of the training. Thus training is positively correlated with SME growth. Zindiye et al. (2008), in their study in Zimbabwe, discovered that unavailability of skilled workers results in unsatisfactory SME performance.

Location and Business Plan

Sulemana (2014), proves in his study that, there is a positive relationship between ME size and location. Sefiani (2013), also in consonance, posits that SME success is significantly influenced by its location. Researchers, for example, (Hove and Tarisai, 2013; Uddin and Bose, 2013) posit that having a business plan influences SME performance significantly.

Leverage and Cost Control

Abor (2007), in his study comparing Ghana and South Africa, discovers that the capital structure of a business, especially if funded by long term debts, has a negative impact on SME performance. (Asikhia and Rensburg 2015; Martey et al. , 2013) reveal that cost incurred by SMEs in running their business, significantly impacts on its performance.

Information Communication Technology (ICT)

Technological improvements enhance the efficiency of a business and consequently, its profits (Drucker, 1985). As revealed by (Morse et al., 2007; Lee, 2001), technology advancements will lead to efficiency and greater market share.

Access to Finance and Interest Rate

Aminu and Shariff (2015) discovered that access to finance affects firm performance. In a study by Samuelson (1945), he discovered that an increase in interest rate affects borrowers without affecting the bank's performance. Borrowers have no option than to accept the impact of the high-interest rate. Khawaja and Musleh (2007), reports that when interest rates increase, it results in depression of the borrowers. The banks capitalise on high returns from lending at high-interest rates to borrowers while paying out lower returns on depositors' investment and savings. Thereby discouraging depositors and borrowers alike.

Infrastructure and Government Support

As noted by (Abdullahi et al., 2015), infrastructure has a positive relationship with SME performance. Mohd et al. (2010) reveal that government policy is an active participant in moderating the relationship between entrepreneurship and SME performance. Chong (2012) confirms government support as one of the critical success factors of SMEs.

Inflation and Taxes

There is inflation, which refers to a rise in the overall level of prices, and it influences growth significantly (Bozkurt,2014). Sergii (2009) posits that the relationship between lower inflation rates and growth rate is a positive one while a negative relationship exists between higher inflation levels and growth. According to (Widmalm, 2001), revenue generated from income taxes influences the economic growth of OECD countries negatively. More complicated findings concerning the impact of taxation on growth have been discovered by (Arnold, 2008). His analysis revealed that economic growth occurs at a smaller pace from revenue from income taxes and a faster pace when revenue is from consumption tax and property tax.

2.4 Hypotheses of the study

Following the empirical review, nineteen (19) hypotheses are developed. These hypotheses employ the factors from the literature review. Table 1 shows the hypotheses that were proposed.

Table 1: Hypotheses of the study

Hypotheses: There is a significant relationship between	CODE
H01: gender of entrepreneur and SME success.	GEN
H02 : age of entrepreneur and SME success.	AGE
H03: marital status of entrepreneur and SME success.	MAR
H04: education of entrepreneur and SME success.	EDU
H05: previous work experience and SME success.	WKEX
H06: family business and SME success.	FAM
H07: training and SME success.	TRAIN
H08: firm location and SME success.	LOC
H09: number of employees and SME success.	EMP
H10: leverage and SME success.	LEV
H11: cost control and SME success	CTRL
H12: business plan and SME success.	BPLN
H13: information communication technology and success	ICT
H14: access to finance and SME success	FIN
H15: interest rate and SME success.	INTR
H16: tax and SME success	TAX
H17: infrastructure and SME success.	INFRA
H18: government support and SME success.	GOV
H19: inflation and SME success.	INFLA

Source: Author's empirical review of literature, (2019)

3. Methodology

The study began with an in-depth review of existing studies. Paper survey questionnaires were administered to SMEs using convenience sampling method to collect data from owners of SMEs located in Kumasi and Tamale in the Ashanti and Northern Regions of Ghana, respectively.

3.1 Research Strategy, Research Sample, Time Horizon and Data Collection

The current paper investigated the key success factors common to four sectors of SMEs. The research strategy serves as a guide for conducting a research in any field (Marshall and Rossman, 2010). The researcher has the

option of choosing one or more research strategies such as survey, experiment, and case studies if time and resources will permit (Saunders et al.,2009). Convenience Sampling which entails choosing subjects in no particular sequence and repeating the process until the target sample had been obtained for the study. A total of 600 questionnaires were obtained since the drop and collect mode of data collection was employed. This data collection was held from May to July of 2019. Descriptive analysis was employed in analyzing the data, and there was an application of multinomial regression to test the hypothesis for validation or rejection. The cross-sectional study involves studying a particular phenomenon within a certain period. Time horizons on this study did not allow the researcher to conduct a longitudinal study which has the ability to study change and development over a time period (Saunders et al., 2009). These studies usually adopt the survey approach (Robson, 2002). This study seeks to explain how factors are different or similar in various sectors with respect to SME success.

3.2 Justification for Selected Sectors

The Ghana Banking Survey (GBS, 2016) identified that in Ghana, the services sector, such as restaurants, hotels, business, and transport, form the majority of SMEs. The industry part includes electricity, water, and sewerage, mining, manufacturing, and construction. The services sector remains the largest in terms of contribution to GDP with a GDP increase from (51.95%) in 2014 to (54.4%) in 2015; Industry (25.3%) and agriculture (20.3%) by year-end 2015 (GBS, 2016). Generally, the GDP growth rate has fallen consistently from (9.3%) in 2012 to (3.9%) in 2015(GBS, 2016). Infrastructural and capital investment by government instead of consumption and the energy crisis saga resulted in a fall of GDP over the last few years (GBS, 2016) There is no study yet on a cross-section of SMEs and inter-sectoral comparisons to identify whether differences and similarities exist in as far as the issues this study seeks to investigate are concerned. The selected sectors involved in the study include Agriculture, Manufacturing, and Service sector comprising Hospitality and Trade industries due to their contribution to the nation's GDP. Since SMEs in the various sectors are different by their nature and therefore factors that drive their growth may also differ, it is relevant to have a study that looks at inter-sectoral similarities and differences because that will better inform policy decisions right from the micro to the macro level in a much better fashion so that it would not be a "one size fits all" so that factors that will suit the agriculture industry are not applied to the manufacturing industry or other sectors within the economy.

4. Results and Discussion

4.1 Respondent characteristics

From Table 2, it can be seen that the agriculture (73.33%) and manufacturing (90.67%) sectors are dominated by men while the hospitality (60.67%) and trading (58.00%) sectors are dominated by women. The greater percentage of entrepreneurs in the agriculture and hospitality sectors are in the age bracket of (45-55 years) while entrepreneurs in the age bracket of (30-44 years) dominate the manufacturing and trading sectors. With the exception of the trading sector, more than 50% of entrepreneurs in the remaining three sectors are married. The greater percentage of all entrepreneurs in this study had their education to the Secondary school level, which is equivalent to Senior High School in other countries. Having previous work experience is also a common feature of the majority of the entrepreneurs in all the sectors. A total of (56.67%) manufacturers and (58.67%) traders descend from a family of entrepreneurs, but the reverse can be said for entrepreneurs in agriculture (50.67%) and hospitality (57.33%) sectors.

More than half of the businesses in agriculture, manufacturing, and trading employ between (1-5) people while (84.00%) of businesses in hospitality sectors employ between (6-29) people. The upper tier of turnover (>GHC500,000) is dominated by (8.67%) traders compared to (2.00%) of businesses in the agriculture sector. The lower tier (< GHC100,000) is dominated by all the four sectors;(90.67%, of agriculture businesses, 70.00% of hospitality businesses, 62.00% of manufacturing businesses and 66.00% trading businesses). About (8.00%) of businesses in both the hospitality and trading sectors employ the highest leverage of (> GHC100,000) compared to (4.00%) of agriculture businesses and (6.00%) of manufacturing sectors. More than half of

businesses (56.00% agriculture and 50.67% trading) admit to not having a business plan, however, (77.33%) of hospitality businesses and (68.67%) of manufacturing businesses have a business plan.

Table 2: Respondent Characteristics

Factor	AGRIC		HOSPITALITY		MANUFACTURING		TRADING	
	Count	%	Count	%	Count	%	Count	%
Gender								
Male	110	73.33	59	39.33	136	90.67	63	42.00 58.00
Female	40	26.67	91	60.67	14	9.33	87	
Age								
<30	37	24.67	10	6.67	23	15.33	29	19.33
30-44	38	25.33	63	42.00	71	47.33	71	47.33
45-55	66	44.00	69	46.00	47	31.33	34	22.67
>55	9	6.00	8	5.33	9	6.00	16	10.67
Marital								
Single	56	37.33	60	40.00	55	36.67	93	62.00
Married	94	62.67	90	60.00	95	63.33	57	38.00
Education								
Primary	40	26.67	26	17.33	33	22.00	25	16.67
Secondary	71	47.33	76	50.67	79	52.67	77	51.33
Tertiary	6	4.00	18	12.00	9	6.00	30	20.00
None	33	22.00	30	20.00	29	19.33	18	12.00
Experience								
Yes	83	55.33	106	70.67	83	55.33	87	58.00
No	67	44.67	44	29.33%	67	44.67	63	42.00
Family Background								
Yes	74	49.33	64	42.67	85	56.67	88	58.67
No	76	50.67	86	57.33	65	43.33	62	41.33
Training								
Yes	138	92.00	95	63.33	143	95.33	137	91.33
No	12	8.00	55	36.67	7	4.67	13	8.67
Employee number								
1-5	105	70.00	24	16.00	99	66.00	137	91.33
6-29	45	30.00	126	84.00	51	34.00	13	8.67
Turnover								
<100K	136	90.67	105	70.00	93	62.00	99	66.00
100-500K	11	7.33	40	26.67	51	34.00	38	25.33
>500K	3	2.00	5	3.33	6	4.00	13	8.67
Leverage								
1-50K	54	36.00	47	31.33	54	36.00	44	29.33
51-100K	9	6.00	8	5.33	39	26.00	30	30.00
>100K	6	4.00	12	8.00	9	6.00	12	8.00
0	81	54.00	83	53.33	48	32.00	64	42.67
Business plan								
Yes	66	44.00	116	77.33	103	68.67	74	49.33
No	84	56.00	34	22.67	47	31.33	76	50.67

Source: Author's own analysis (2019)

4.2 Sectoral Key success factors (objective 2)

Table 3 shows that some factors are significant, and these factors in the table validate hypothesis Ha; which says: there are some factors that are considered to be key for SMEs success. Therefore, H0; which posits that there are no key factors for SMEs success in Ghana, is rejected in favour of Ha at 5% level of significance.

	AGRIC		HOSPITALITY		MANUFACTURING		TRADING	
	<i>P</i>	<i>Status</i>	<i>P</i>	<i>Status</i>	<i>P</i>	<i>Status</i>	<i>P</i>	<i>Status</i>
Intercept	0.001	Sig	0.046	Sig	0.009	Sig	0	Sig
GEN	0.176	Ns	0.806	Ns	0.593	Ns	0.855	Ns
AGE	0.811	Ns	0.393	Ns	0.545	Ns	0.639	Ns
MAR	0.136	Ns	0.477	Ns	0.594	Ns	0.001	Sig
EDU	0.041	Sig	0.709	Ns	0.011	Sig	0.089	Ns
WKEX	0.401	Ns	0.129	Ns	0.229	Ns	0.025	Sig
FAM	0.007	Sig	0.036	Sig	0.715	Ns	0.119	Ns
LOC	0.016	Sig	0.059	Ns	0.724	Ns	0.929	Ns
TRAIN	0.462	Ns	0.280	Ns	0.346	Ns	0.004	Sig
EMP	0.05	Sig	0.442	Ns	0.045	Sig	0.006	Sig
LEV	0.531	Ns	0.179	Ns	0.012	Sig	0.316	Ns
BPLN	0.033	Ns	0.001	Sig	0.929	Ns	0.051	Ns
CTRL	0.983	Ns	0.012	Sig	0.001	Sig	0.654	Ns
ICT	0.764	Ns	0.679	Ns	0.959	Ns	0.910	Ns
FIN	0.717	Ns	0.001	Sig	0.012	Sig	0.369	Ns
INT	0.177	Ns	0.599	Ns	0.506	Ns	0.399	Ns
TAX	0.497	Ns	0.006	Sig	0.879	Ns	0.262	Ns
INFRA	0.019	Sig	0.995	Ns	0.018	Sig	0.271	Ns
GOV	0	Sig	0.398	Ns	0.917	Ns	0.001	Sig
INFLA	0.245	Ns	0.156	Ns	0.001	Sig	0.675	Ns

Table 3: Significance of Independent Variables

Source: Author's analysis using NCSS19 (Sig=Significant, Ns=Insignificant)

The factors outlined below are eliminated from the significance tests because their p values are greater than 0.05: Agriculture: gender, age, marital status, work experience, training, leverage, business plan, cost control, ICT, access to finance, interest rate, tax, and inflation.

Hospitality: gender, age, marital status, education, work experience, location, training, number of employees, leverage, ICT, interest rate, infrastructure, government support, and inflation.

Manufacturing: gender, age, marital status, work experience, family background, location, training, business plan, ICT, interest rate, and government support.

Trading: gender, age, education, family background, location, leverage, business plan, cost control, ICT, access to finance, interest rate, tax, infrastructure, and inflation.

Analysis of the Impact of Factors on the SME sectors

The more the T-statistic exceeds zero, the greater its impact on success rate.

Table 4: Impact of Success Factors

<i>Factor</i>	AGRIC		HOSPITALITY		MANUFACTURING		TRADING				
	<i>T</i>	<i>Rank</i>	<i>Factor</i>	<i>T</i>	<i>Rank</i>	<i>Factor</i>	<i>T</i>	<i>Rank</i>			
FAM	2.75	1st	TAX	2.79	1st	EDU	2.61	1st	EMP	2.79	1st
EMP	1.98	2nd	FAM	-2.12	2nd	FIN	2.56	2nd	EXP	-2.27	2nd
EDU	-2.06	3rd	CTR	-2.56	3rd	EMP	2.02	3rd	TRAIN	-2.93	3rd
LOC	-2.44	4th	BPL	-3.69	4th	INFR	-2.39	4th	MAR	-3.37	4th
INFRA	-2.36	5th	FIN	-3.91	5th	LEV	-2.54	5th	GOV	-3.96	5th
GOV	-4.79	6th				INFLA	-3.71	6th			
						CTRL	-3.87	7th			

Source: Author's analysis using NCSS19

The most important factors, according to T-statistic ranking from Table 4, are outlined below:

Agriculture: family background, number of employees, education, location, infrastructure, and government support.

Hospitality: tax, family background, cost control, business plan, and access to finance.

Manufacturing: education, access to finance, number of employees, infrastructure, leverage, inflation, and cost control.

Trading: number of employees, work experience, training, marital status, and government support.

In the model Y represents the Success (Turnover) variable, 'a' represents a constant while $b_1, b_2, b_3 \dots b_z$ are regression coefficients.

Regression model

$$Y (\text{Agriculture}) = a + b_1 \text{FAM} + b_2 \text{EMP} + b_3 \text{EDU} + b_4 \text{LOC} + b_5 \text{INFRA} + b_6 \text{GOV}$$

$$Y (\text{Hospitality}) = a + b_1 \text{TAX} + b_2 \text{FAM} + b_3 \text{CTRL} + b_4 \text{BPLN} + b_5 \text{FIN}$$

$$Y (\text{Manufacturing}) = a + b_1 \text{EDU} + b_2 \text{FIN} + b_3 \text{EMP} + b_4 \text{INFR} + b_5 \text{LEV} + b_6 \text{INFL} + b_7 \text{CTRL}$$

$$Y (\text{Trading}) = a + b_1 \text{EMP} + b_2 \text{EXP} + b_3 \text{TRAIN} + b_4 \text{MAR} + b_5 \text{GOV}$$

4.3 Discussion

The findings reveal that there are no common factors that affect all four sectors. However, number of employees affect three sectors, namely: agriculture, manufacturing, and trading sectors. Infrastructure and education affect the agriculture and manufacturing sectors. Adequate infrastructure will enhance farm productivity, and this will consequently result in the expansion of the agriculture sector and the economy as a whole. Cost control and access to finance affect both the hospitality and manufacturing sectors. An entrepreneur's family background affects the agriculture and hospitality sectors, while government support affects the agriculture and trading sectors. Some factors are peculiar to specific factors, for example, location which affects only the agriculture sector. The hospitality sector is also affected by tax and business plan. There is a lot of risks when starting a business from the ground-up. A business plan will assist the hospitality entrepreneur to envision, prepare, and identify risks before he or she decides to pump investments into the business. This detailed research of a business plan will aid in decision making after necessary evaluations have been made. Leverage and inflation affect the manufacturing sector. This is in consonance with (Modebe and Ezeaku, 2016) when they postulated that inflation and interest rate have a negative and non-significant effect on manufacturing sector growth. The trading sector is affected by work experience, training, and marital status of entrepreneurs. Entrepreneurs who are married seem to perform poorer than entrepreneurs who are single. This is as a result of the divided time and effort between running a family and running a business. Entrepreneurs who have received training in their field of trade made greater impacts at their business, thereby achieving more.

5. Conclusion and Recommendations

The aim of this study is to identify key success factors for various sectors of SMEs to encourage SME growth. The findings reveal that SMEs do not require many factors to be successful but just a combination of certain factors, no matter the sector they are in. For the **agriculture sector**, only six **key factors** (family background, number of employees, education, location, infrastructure, government support) are needed for SME success. For the **hospitality sector**, five **key factors** (tax, family background, cost control, business plan, access to finance) are needed for success. For the **manufacturing sector**, seven **key factors** (education, access to finance, number of employees, infrastructure, leverage, inflation, cost control) are needed for success. For the **trading sector**, five **key factors** (number of employees, work experience, training, marital status, government support) are needed for success. Informed by the findings of the study, the author makes the following recommendations.

5.1 Recommendations for policymakers

The tax rates on businesses must be affordable to enable businesses in all sectors to have a desire to pay and thereby reduce tax evasion rate. There is a need to support the spread of financial institutions that cater to specific sectors of the industry. Policies that will enhance the competitiveness of the financial sector could make lenders less stringent in their requirements and hence make it easier for businesses to obtain credit. Government has, over the past decade, multiplied efforts to process cocoa beans locally. Enhanced technological equipment can help improve the efficiency and productivity of the agricultural sector. Government can incite the manufacturing sector through infrastructure and credit facilities to produce more to meet domestic and foreign demands which will also in the long term, minimise inflation and appreciate the domestic currency against foreign currencies. The government should incorporate sector analysis and opinions into SME policies for the promotion of sector equality and identification of obstacles.

5.2 Recommendations for specific sectors

Agricultural Sector

SMEs in the agriculture sector should endeavour to train their offspring who have a passion for business, especially in their field since the success rates for such potential entrepreneurs is high. Potential farmers should get an education before venturing into agriculture business, and they should not make agriculture business the business of last resort that every potential entrepreneur can substitute education for. Existing and new farmers should update themselves, especially those who lack high-level education, should update themselves from time to time on technology and machinery that can make their work effective and efficient. Farmers should assess a location before deciding to establish their agriculture business there. As much as possible, farmers should employ as many people as possible to increase productivity and profitability.

Hospitality Sector

SMEs must do their necessary background checks to gain accurate and adequate information on the hospitality business before they venture into it. They should also research on location, branding, and product or service diversification in order to gain full control over the business. Existing and potential SMEs who cannot draw up a business plan can employ consultants to develop one for them. The ability to control cost in this sector is something that entrepreneurs need to have if they are to survive and grow in this sector.

Manufacturing Sector

SMEs in the manufacturing sector should also learn either through self-discipline or workshops on how to control cost as some expenses can be avoided in order to increase their net profits and consequently, their business net-worth. They should also update themselves regularly on new methods of doing things. Having employees in their numbers is also a plus for businesses in this sector. Manufacturers should look for diverse ways of assessing external finance to serve as leverage for the business and give them a competitive edge.

Trading Sector

SMEs in the trading sector should gain experience if they are to venture into the trading sector. The number of employees, too, can be an asset for the business. Research on finance institutions that provide affordable interest rates so that they do not spend all their profits on servicing loans. Entrepreneurs should spend time in workshops getting the needed training for themselves and their employees in order to operate effectively and efficiently. Potential entrepreneurs looking to be part of the trading sector as well as existing traders should find a way to balance their married life and work-life so that one does not suffer at the expense of the other.

References

- Abdullahi, M., Ghazali, P., Awang, Z., Izah Mohd Tahir, I., & Mat, N. Z. (2015). The effect of finance, infrastructure and training on the performance of small and medium scale enterprises (SMEs) in Nigeria. *International Journal of Business and Technopreneurship* 5(1), 421–52.
- Abor, J. (2007). Debt policy and performance of SMEs: evidence from Ghanaian and South African firms. *Journal of Risk Finance*, 8(4), 364-379.
- Abor, J., & Biekpe, N. (2006). Small business financing initiatives in Ghana. *Problems and Perspectives in Management*, 4(3), 69-77.
- Abor, J., & Quartey, P. (2010). Issues in SME development in Ghana and South Africa. *International Research Journal of Finance and Economics*, 39(1), 218-228.
- Agyapong, D., Agyapong, G. K. Q., & Darfor, K. N. (2010). Criteria for assessing Small and Medium Enterprises' borrowers in Ghana. *International Business Research*, 4(1), 132-138.
- Alimo, M. T. (2015). The experiences of successful small business owners in Ghana. (Doctoral Dissertation). Walden University.
- Aminu, M., & Shariff, M. N. M. (2015). Determinants of SMEs performance in Nigeria: A pilot study. *Mediterranean Journal of Social Sciences*, 6(1).
- Arnold, J., (2008). Do tax structures affect aggregate economic growth? Empirical evidence from a panel of OECD countries. *OECD Working Papers*. No. 643, Economics Department.
- Asikhia, O. U., & Rensburg, M. J. V. (2015). SMEs wealth creation model: A conceptual framework. *African Journal of Hospitality, Tourism and Leisure*, 4(1).
- Ayyagari, M., Demirgüç-Kunt, A., & Maksimovic, V. (2011). Small vs. young firms across the world: Contribution to employment, job creation and growth. *World Bank Policy Research, Working Paper 5631*, April 2011.
- Bouri, A., Breij, M., Diop, M., Kempner, R., Klinger, B., & Stevenson, K. (2011). Report on support to SMEs in developing countries through financial intermediaries. Geneva: Dalberg Global Development Advisors (pp. 2–48) 2011.
- Bozkurt, C. (2014). Money, inflation and growth relationship: The Turkish case. *International Journal of Economics and Financial Issues*, 4 (2), 309-322.
- Brock, W. A., & Evans, D. S. (1986). Small Business Economics. *Small Business Economics* 1 (1), 7-20.
- Chell, E. (2001). Entrepreneurship: Globalization, innovation and development. London: Thomson Learning.
- Chong, W. Y. (2012). Critical success factors for Small and Medium Enterprises: perceptions of entrepreneurs in urban Malaysia. *Journal of Business and Policy Research*. 7 (4), 204-215.
- Donkor, S. (2011). Determinants of business failure: the perspective of SMEs building contractors in the Ghanaian construction industry. (Masters Thesis) Kwame Nkrumah University Of Science And Technology, Kumasi.
- Drucker, P. F. (1985). Introduction, innovation and entrepreneurship. Harper & Row Publishers, New York, 1–17.
- Foley, P., & Green, H. (1989). Small Business Success. London, England : Paul Chapman Publishing.
- Ghatak, S. (2010). Micro, Small and Medium Enterprises (MSMEs) in India: An appraisal. *Journal of Technology Management and Innovation*, 6(1), 66-76.
- GBS (2016). Ghana Banking Survey report on How to win in an era of mobile money. [Online] Available: <http://www.pwc.com/gh/en/assets/> (Retrieved on February 2019).
- Gibb, A. A., & Scott, M. (1985). Strategic Awareness, personal commitment and the process of palling in the small business. *Journal of Management Studies*, 22 (6), 597-631.
- Gibrat, R. (1931). Les inegalites economiques; aux inegalite's des richesses, a la concentration des entreprises, aux populations des villes, aux statistiques des familles, etc., d'une loi nouvelle, la loi de l'effect proportionnel, *Librairie du Recueil Sirey*
- GSS (2012). Ghana Statistical Service report on Population and Housing Census. [Online] Available: <http://www.statsghana.gov.gh/docfiles/2010phc/> (2010).
- Hawawini, G., Subramanian V., & Verdin, P. (2003). Is performance driven by industry or firm-specific factors? A new look at the evidence. *Strategic Management Journal* 24(1), 1-16.
- Hove, P., & Tarisai, C. (2013). Internal factors affecting the successful growth and survival of Small and Micro agri-business firms in Alice communal area. *Journal of Economics*, 4(1), 57-67.
- Jovanovic, B. (1982). Selection and the evolution of industry. *The Econometric Society*. 50 (3), 649-670.
- Kantor, P. (2001). Promoting women's entrepreneurship development based on good practice programmes: Some experiences from the North to the South. *International Labour Organization Working Paper No. 9*. ILO, Geneva.
- Khawaja, I., & Musleh-ud, D. (2007). Determinants of Interest spread in Pakistan. PIDE-Working Papers 2007:22, Pakistan Institute of Economics.

- Kongolo, M. (2010). Job creation versus job shedding and the role of SMEs in economic development. *African Journal of Business Management Vol. 4(11)*, 2288-2295.
- Krasniqi, B. A. (2007). Barriers to entrepreneurship and SME growth in transition: the case of Kosova. *Journal of Developmental Entrepreneurship, 12(1)*, 71–94.
- Lampadariou, E., Kyriakidou, N., & Smith, G. (2017). Towards a new framework for SMEs success: A literature review. *International Journal of Business and Globalization 18(1)*, 194–232.
- Lee, J. (2001). Education for technology readiness: prospects for developing countries. *Journal of Human Development, 2(1)*, 115–151.
- Liedholm, C., & Mead, D.C. (1999). Small enterprises and economic development: the dynamics of micro and small enterprises. Psychology Press, 1999. Business & Economics, 130 pages.
- Lim, K. G. (2004). The impact of employees' training programme on the performance of Small Medium Enterprises in northern Malaysia. (Masters Dissertation). Universiti Sains Malaysia.
- Lucas, R. (1978). On the size distribution of business firms. *Bell Journal of Economics, 9(2)*, 508-523.
- Marshall, C., & Rossman, G. B. (2010). Designing qualitative research. (5th ed.). SAGE Publications 2010-Social Science-321 pages.
- Martey, E., Annin, K., Attoh, C., Wiredu, A. N., Etwire, P. M., & Al-Hassan, R. M. (2013). Performance and constraints of Small Scale Enterprises in the Accra Metropolitan Area of Ghana. *European Journal of Business and Management, 5(4)*, 83-93.
- Mensah, S. (2004). A review of SME financing schemes in Ghana. In UNIDO Regional Workshop on Financing Small and Medium Scale Enterprises, 15-16, 1-19.
- Modebe, N. J., & Ezeaku, H. C. (2016). Dynamics of inflation and manufacturing sector performance on Nigeria : Analysis of effect and causality. *International Journal of Economics and Financial Issues, 6 (4)*, 1400-1406.
- Mohd Shariff, M. N., Peou, C., & Ali, J. (2010). Moderating effect of government policy on entrepreneurship and growth performance of Small Medium Enterprises in Cambodia. *International Journal of Business and Management Science, 3(1)*, 57.
- Morse, E. A., Fowler, S. W., & Lawrence, T. B. (2007). The impact of virtual embedness on new venture survival: Overcoming the liabilities of newness. *Entrepreneurship Theory & Practice, 139-159*.
- O'Farrell, P. N., & Hitchens, D.M.W.N. (1988). Alternative theories of small firm growth: Aa critical review. *Environment and planning A, 20(10)*, 1365-1383.
- Penrose, E. (1959). The theory of the growth of the firm.(Revised edition). England: Oxford University Press (2009)
- Perez, E. H., & Canino, R. M. (2009). The importance of the entrepreneur's perception of success. *Review of international comparative management, 10(5)*, 990-1010.
- Perren, L. (2000). Factors in the growth of Micro-Enterprises (part 2): Exploring the implication. *Journal of Small Business and Enterprise Development, 6 (4)*, 366-385.
- Robson, C. (2002). Real world research : A resource for social scientists and practitioner-researchers (2nd ed.). Oxford: Blackwell Publishers Ltd.
- Samuelson, P. A. (1945). The effects of interest rate increases on Banking Systems. *The American Economic Review, 35(1)*,16-27.
- Sandberg, K., Vinberg, S., & Pan, Y. (2002). An exploratory study of women in micro-enterprise: owner perceptions of economic policy in a rural municipality: gender-related differences. CD-proceedings of 12th Nordic Conference on Small Business Research.
- Saunders, M., Lewis, P., & Thornhill, A. (2009). Research methods for business student. (5th ed.). London: Pearson Hall Limited.
- Schröder, E., & Rodermund, E. S. (2006). Crystallizing enterprising interests among adolescents through a career development. *Journal of Vocational Behavior, 69 (3)*, 494-509.
- Sefiani, Y. (2013). Factors for success in SMEs: A perspective from Tangier. (Doctoral Dissertation). University of Gloucestershire.
- Sergii, P. (2009). Inflation and economic growth : The non-linear relationship evidence from CIS Countries. (Masters Thesis). Kyiv School of Economics.
- Shah, S. F. H., Nazir, T., Zaman, K., & Shabir, M. (2013). Factors affecting the growth of enterprises: A survey of the literature from the perspective of small- and medium-sized enterprises. *Journal of Enterprise Transformation, 3(1)*, 53-75.
- Stephanou, C., & Rodriguez, C. (2008). Bank financing to Small and Medium-Sized Enterprises (SMEs) in Colombia. Policy Research Working Paper No. 4481, Washington D. C.
- Storey, D. J. (1994). Understanding the Small Business Sector. London: International Thomson Business Press.
- Sulemana, I. (2014). Factors influencing the performance of Small Scale Entrepreneurs in the garment industry of the Tamale metropolis of Ghana. (Masters Thesis). University of Ghana.
- Uddin, M. R., & Bose, T. K. (2013). Factors that affect the success of SME in Bangladesh: Evidence from Khulna City. *Journal of Management and Sustainability, 3(3)*.

- Widmalm, F. (2001). Tax structure and growth : Are some taxes better than others?. *Public Choice*, 107 (3-4), 199-219.
- Wiese, J. S. (2014). Factors determining the sustainability of selected Small and Medium-sized enterprises . (Master's Thesis). North-West University.
- Zindiye, S., Roberts-Lombard, M., & Herbst, G. (2008). An empirical investigation into the factors affecting the performance of SMEs in the manufacturing sector of Harare, Zimbabwe (Doctoral Dissertation).

The Factors Affect Job Satisfaction of Workers at Vietnam State Bank

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Abstract

This research aims to identify and evaluate factors affecting the job satisfaction of officers who are working at the Vietnam State Bank. This is the agency performing the state management of monetary, banking and foreign exchange operations; issuing money, banking of credit institutions, and providing monetary services to the Vietnam Government. With the survey and opinion analysis of 252 officers, the research results have shown 6 groups of factors affecting job satisfaction of employees including Nature of work; Working conditions; Evaluation of work performance; Wages and welfare; Training and promotion opportunities; Relationships at the workplace. Besides, some individual characteristics of workers also affect job satisfaction. The analysis and evaluation of factors affecting employee satisfaction contribute to the development and implementation of effective measures to improve job satisfaction of the officers, create labor motivation, and bring higher labor productivity.

Keywords: Employee Satisfaction, Factor Analysis, Job Satisfaction, Vietnam State Bank, Human Resources Management

1. Introduction

The Vietnam State Bank is an agency attached to the Government of the Socialist Republic of Vietnam, performing the function of state management about currency; managing monetary policy in the economy; ensure the safety and efficiency in the operation of the system of credit institutions, thus contributing to the socio-economic development.

The Vietnam State Bank operates following regulations, mechanisms, and policies of the public sector with a lifetime career regime, operates by the state budget, strictly tied to rank and authority. Strict human resource management policies, the prescribed working environment, and the pressure of work at the State Bank of Vietnam make some workers feel dissatisfied, bored, tired, and reduce in working effectively. To improve operational efficiency, it is necessary to study and understand the factors affecting the satisfaction of employees working at the State Bank of Vietnam, from which appropriate measures to improve the satisfaction in work, create labor motivation, encourage employees to work hard and devote themselves to the organization.

This study focuses on analyzing the satisfaction level and the factors affecting job satisfaction for employees working at the Vietnam State Bank, thereby proposing solutions to improve employee satisfaction at work and create labor motivation. This is also the basis for managers at the state management agencies to adjust human resource management policies, improve the efficiency of state management activities, and ensure sustainable development on socio-economic.

2. Basis of theory, model and research hypotheses

2.1. Basic of theory

One of the most complex areas faced by human resource managers is measuring and improving job satisfaction. There have been many scientific studies measuring the satisfaction and factors affecting the working satisfaction of employees.

According to Herzberg (1959), the satisfaction of employees is the degree to which a worker loves his work or try his best to maintain the work, that is expressed by positive or negative perception about the different aspects of work that affect them.

According to Vroom (1964), in his definition of job satisfaction, he focused on the role of workers at working place. He said that job satisfaction is a state in which employees have a clear and effective orientation to the work they undertake in the organization and enjoy this work.

From Maslow (1943), Adam (1963) and McClelland (1988), satisfaction, in general, will be achieved when the value received is greater than or equal to the expected value. Based on that theory, some researchers define satisfaction as the actual value (actual satisfaction state) that employees receive compared to the expected value (state of satisfaction expected) on work aspects such as salary, welfare, job nature, working relations or working conditions, etc.

Smith, Kendall, and Hulin (1969) argue that employee satisfaction is reflected in the following five impact factors: job satisfaction; satisfied with wages; satisfied with training and promotion opportunities; satisfied with the supervision of leaders and satisfied with colleagues.

Research by Schemerhon (1993) has identified eight factors affecting employee satisfaction, including: (1) Job position, (2) Supervision by leader, (3) Relationship with colleagues, (4) Content of work, (5) Labor remuneration, (6) Advancement, (7) Infrastructure conditions of the working environment, (8) Organizational structure.

In the study of Foreman Facts (1946), employee satisfaction is related to ten factors: Skilled discipline, (2) Empathy with personal issues, (3) Interesting job, (4) Interact and share at work, (5) Occupational safety, (6) Working conditions, (7) Salary, (8) Fully evaluate the work done, (9)) Personal loyalty to superiors, (10) Career advancement and development.

In general, there are many different definitions of job satisfaction of workers. Each researcher has its view and explanation through their research works. In this study, the authors consider the satisfaction in work is the aggregate level of employee satisfaction with the components or aspects of the job. In other words, general

satisfaction in work and satisfaction with the aspects of work are different variables, and they are related to each other.

2.2. Model and research hypotheses

Inheriting and selecting a number of theoretical bases and scales of factors in previous studies, adjusting to suit the research objectives, the research model is designed based on a combination of factors that measure job satisfaction in the context of Vietnam as: (1) nature of work; (2) working conditions; (3) evaluation of job performance (4) salaries and welfare; (5) training and promotion opportunities; (6) relations at the workplace; at the same time, combine the personal characteristics that measure the satisfaction in work of workers. The research model is as follows:

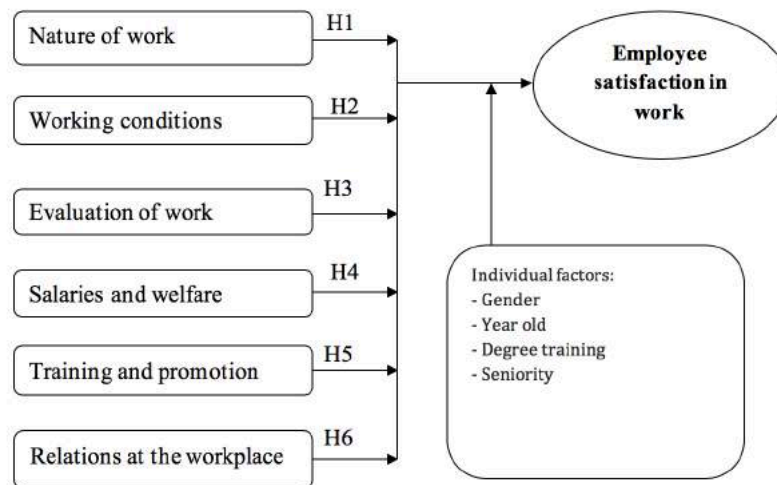


Figure 1. The Proposed Research Model

(Source: The author research)

Hypotheses for the proposed research model include:

H1: The nature of work has a positive impact on the general satisfaction in the work of employees

H2: Working conditions have a positive impact on general satisfaction in the work of employees

H3: Accurate and fair evaluation of job performance positively affects the overall satisfaction of workers on the job.

H4: Salaries and welfare have a positive impact on the general satisfaction in the work of employees

H5: Training and promotion opportunities have a positive impact on the general satisfaction in the work of employees

H6: Friendly relationships at the workplace have a positive impact on employee satisfaction with work.

3. Research method

3.1. Measure variables and select research samples

The study was conducted based on a combination of qualitative research and quantitative research. The first step, the qualitative research method is used to conduct preliminary research, the authors discuss with 2 groups of employees, each group of 5 people works in 5 different job positions. Discussion use set of preliminary scales with satisfaction factors in reference work from previous studies. The participants in the discussion were free to give their opinions on aspects of satisfaction in work. Preliminary study sample is 10 (n = 10). Preliminary research results are used to complete research questionnaires and research models.

Quantitative research methods are conducted to collect employees' opinions about their satisfaction with current jobs. The questionnaire was set up based on preliminary research results and use Likert 5-level questions. Due to the limited time of the survey, the author used a convenient sampling method. The sample size was determined

according to the rules of Comrey and Lee (1992) and also referred to the rules of Trong, Hoang & Mong Ngoc, Chu Nguyen (2005). With 36 observed variables necessary to conduct factor analysis, the minimum number of samples is $36 \times 5 = 180$ observation samples. With the point of view of collecting as many samples as possible to ensure the stability of the impact, based on the ability to collect samples, the authors decided to select the number of observation samples is $n = 270$. To ensure the sample size, the authors have broadcasted 270 questionnaires, the number of questionnaires collected was 258, of which 252 valid votes were included in the analysis.

Table 1: The factor scales in the model

	Observed variables	Reference
1. Natural of work		
TC1	The work is suitable for education and professional qualifications	Bellingham, R. (2004); Herberg (1959); Luddy, Nezaam (2005); Ellickson, M.C. & Logsdon, K. (2002) Dung T.K (2005)
TC2	The work allows good use the personal abilities	
TC3	The work is very interesting and has many challenges	
TC4	The workload is divided appropriately	
TC5	Encourage to be creative at work	
2. Working conditions		
DK1	Working time per day is reasonable	Bellingham, R. (2004); Herberg (1959); Judge, T. A., & Klinger, R. (2008); Dung T.K (2005)
DK2	Fully equipped with equipment and necessary tools for the job	
DK3	Good facilities for working	
DK4	The workplace ensures safety, comfort, and cleanliness	
DK5	Work pressure is not too high	
3. Evaluation of work performance		
DG1	Being fair in work performance evaluation	Bellingham, R. (2004); Ellickson, M.C. & Logsdon, K. (2002) Judge, T. A., & Klinger, R. (2008); Tung H.T & Dung N.T.T (2016)
DG2	Assessing the performance of the work following the performance results of the employee	
DG3	The evaluation process is clear and serious	
DG4	Evaluating work performance to ensure publicity and transparency	
DG5	Evaluating work performance to ensure effectiveness	
4. Salary and Welfare		
TL1	Wages are commensurate with the nature of work and the energy spent	Bellingham, R. (2004); Durst, S. L. & DeSantis, V. S. (1997); Herberg (1959); Judge, T. A., & Klinger, R. (2008); Dung T.K (2005)
TL2	Get paid following the job results	
TL3	Wages ensure the life of yourself and your family	
TL4	Receive bonuses when the good job is done	
TL5	Received attractive welfare (insurance, travel expenses, meals, tourism annually, ...)	
5. Training and promotion opportunities		
DT1	Participate in necessary training courses to work effectively	Ellickson, M.C. & Logsdon, K. (2002); Bellingham, R. (2004); Judge, T. A., & Klinger, R. (2008);
DT2	Your office has clear training and development plans	
DT3	Know the conditions needed to develop the job	
DT4	Your office always encourages and creates opportunities for promotion and development	
DT5	Fair training and promotion policies	
6. Relations at the workplace		
QH1	Colleagues are always willing to help and support each other	Bellingham, R. (2004); Herberg (1959); Judge, T. A., & Klinger, R. (2008); Dung T.K (2005); Tung H.T & Dung N.T.T (2016)
QH2	Colleagues are sociable, friendly, easy-to-approach people	
QH3	The superior listen to views and thoughts	
QH4	Superiors value talents and contributions	
QH5	The superior has the ability, vision and good operating ability	

Source: Authors research

3.2. Analysis of research data

The research data, after collected will be cleaned and analyzed with the support of SPSS 20.0 software with analytical techniques:

Descriptive statistics: Describe the characteristics of the sample according to the identified signs.

Check the reliability of the scale (Cronbach's Alpha): This method evaluates the reliability of the scale by Cronbach's Alpha coefficient and removes the unsuitable variables. Variables whose correlation coefficient with a total variable is less than 0.3 will be rejected. The scale with Cronbach's Alpha coefficient over 0.6 is usable.

Factor Analysis EFA: Factor analysis EFA allows compaction of multiple correlated variables into representative factors. Using the Kaiser-Meyer-Olkin (KMO) and Bartlett test to measure the fit of the research samples. Factor analysis is statistically significant if the KMO value > 0.5 and the value of sig < 0.05 ; Factor loading must be > 0.5 ; In case an observed variable uploads both factors, the loading factors must be different more than 0.3, and this observed variable is included in the factor that it uploads the highest with the condition must satisfy the factor loading > 0.5 .

Correlation and Regression analysis: After extracting the representative factors, using the Pearson correlation coefficient method to evaluate the linear correlation relationship between the factors in the model. If the sig value is < 0.05 , the analytical result is statistically significant; correlation coefficients > 0 represent variables with linear correlation. On that basis, the linear regression model was set up and the R2 coefficient adjusted to indicate the suitability of the established regression model.

Verify the difference impact of personal factor: Independent - Sample T-Test and One-Way ANOVA test will be used to consider the different influence of qualitative variables such as age, gender, seniority.

4. Research results

4.1. Introduction of research samples

The Vietnam State Bank is an agency of the Government and a Central Bank of the Socialist Republic of Vietnam. The State Bank performs the function of State management over monetary, banking activities and foreign exchange; Functions of the Central Bank on issuing money, banks of credit institutions and providing monetary services to the Government. Activities of the State Bank to stabilize value for money; ensure the safety of banking activities and the system of credit institutions; ensure the safety and efficiency of the national payment system; contribute to promoting socio-economic development. The State Bank of Vietnam has 26 affiliated organizations, of which 20 units perform the state management function and the Central Bank function, 6 units are non-business organizations. The total number of employees of the State Bank is 2,632, of which 60% are women; 79.8% of employees are under 50 years old; 100% of employees have university and postgraduate degrees; 73% of labor have seniority work from 3-10 years.

According to the survey result, satisfaction level by each measurement factor is shown in Table 2

Table 2. Statistical results of satisfaction level

Satisfaction	Statistic				
	Sample Number	min	max	mean	Standard deviation
Satisfaction with the nature of work	252	1	5	3.17	.826
Satisfaction with working conditions	252	1	5	3.56	.875
Satisfaction with the evaluation of work performance	252	1	5	2.86	.888
Satisfaction with salaries and welfare	252	1	5	3.32	.975
Satisfaction with training and promotion opportunities	252	1	5	3.54	.870
Satisfaction with relations at the workplace	252	1	5	2.97	.977

Source: Synthesis from questionnaires

With a 5-level Likert scale, employees' satisfaction based on job performance, working conditions, performance evaluation, training, and advancement activities is only above average with an average score from 3.15 to 3.29. The satisfaction level of workers with workplace relationships was assessed at an average level (3.0 points) showing the impact of rigidity in organizational structure and coordination regulations at state management agencies nowadays. Due to getting a salary from the state budget, the salary regime is quite strict, the salary is still quite low compared to the common ground, so the satisfaction level about the salary and welfare is below average with a score of 2.86

4.2. Check the reliability of the scale

Cronbach's Alpha coefficient test result shows that all the coefficients are greater than 0.6 (Table 3), the correlation coefficient with the total variable of the observed variables is greater than 0.3. This shows that research is appropriate and reliable. In 6 groups of factors with initial observation variable $X_m = 30$ variables, remove 2 variable from the scale (TC4; LT1) because it has Cronbach's Alpha if the Item Deleted is greater than the Cronbach's Alpha of the scale. After removing 2 variable, the number of observations variables taken into the model is $X_k = 28$ variables.

Table 3. Cronbach's Alpha test result

Scale	The number of an observation variable			Cronbach's Alpha
	Before testing	After testing	Observation variable was removed	
1. TC	5	4	1	0.747
2. DK	5	5	None	0.802
3.DG	5	5	None	0.875
4. LT	5	4	1	0.893
5. DT	5	5	None	0.80
6. QH	5	5	None	0.849
Total	30	28		

Source: Synthesis from test results

4.3. Factor Analysis EFA

Using EFA factor analysis with Varimax rotation to analyze 28 observational variables after Cronbach's Alpha reliability test.

The results of the EFA analysis, at Eigenvalue value, is 1.206 (greater than 1) with Principal Components variance and Varimax rotation, factor analysis extracted 6 factors from 28 observational variables with variance extraction of 63.64% (>50%) qualified. The KMO coefficient is 0.833 (> 0.5) shows that the analysis is meaningful. The value sig = 0.000 < 0.05 indicates that the observed variables correlate each other in the overall and the EFA factor analysis is appropriate.

Table 4. Factor analysis EFA result

Scale	Component					
	1	2	3	4	5	6
DG4	.801					
DG3	.774					
DG2	.769					
DG5	.767					
DG1	.661					
LT2		.856				
LT3		.891				
LT5		.839				
LT4		.816				
QH3			.787			
QH5			.700			
QH4			.689			
QH2			.650			
QH1			.633			
DK3				.805		
DK2				.778		
DK5				.698		
DK1				.645		

DK4				.643		
DT2					.802	
DT1					.771	
DT3					.756	
DT4					.709	
DT5					.689	
TC1						.772
TC5						.753
TC3						.750
TC2						.723
Eigenvalues				1.206		
Total variance extraction				63.64%		
KMO				0.833		
Sig.				0.000		

Source: Synthesis from test results

The process of factor analysis with the Eigenvalues is 1.206 (> 1), the 28 observed variables are converged in 6 groups of factors: (TC) nature of work; (DK) working conditions; (DG) evaluation of job performance (TL). salaries and welfare; (DT) training and promotion opportunities; (QH) relations at workplace, with total variance extraction, is 63.64%, that means 63.6% of the fluctuation in data is explained by these six factors

4.4. Analysis of linear correlation and regression

4.4.1. Analysis of linear correlation

From the result of factor analysis EFA, the authors use the linear correlation method "Pearson correlation" to assess correlations relation between the factors in the model. The results of the correlation analysis (Table 5) show that the correlation coefficients of the factors ($r > 0$), the sig value < 0.05 indicates that the variables are a linear correlation and statistically significant.

Table 5. Linear Correlation result

		HL	TC	DK	DG	QH	DT	TL
HL	Pearson Correlation	1	.161*	.435**	.441**	.404**	.010**	.113*
	Sig. (2-tailed)		.011	.000	.000	.000	.000	.024
	N	252	252	252	252	252	252	252
TC	Pearson Correlation	.161*	1	.144*	.130*	.070**	.032*	.032**
	Sig. (2-tailed)	.011		.023	.039	.027	.014	.008
	N	252	252	252	252	252	252	252
DK	Pearson Correlation	.435**	.144*	1	.412**	.381**	.020*	.157*
	Sig. (2-tailed)	.000	.023		.000	.000	.000	.012
	N	252	252	252	252	252	252	252
DG	Pearson Correlation	.441**	.130*	.412**	1	.661**	.041**	.021**
	Sig. (2-tailed)	.000	.039	.000		.000	.014	.004
	N	252	252	252	252	252	252	252
QH	Pearson Correlation	.404**	.070	.381**	.661**	1	.042*	.024**
	Sig. (2-tailed)	.000	.007	.000	.000		.010	.003
	N	252	252	252	252	252	252	252
DT	Pearson Correlation	.010**	.032	.020*	.041**	.042*	1	.051
	Sig. (2-tailed)	.006	.014	.004	.014	.010		.000
	N	252	252	252	252	252	252	252
TL	Pearson Correlation	.113**	.032*	.157*	.021**	.024**	.051*	1
	Sig. (2-tailed)	.024	.008	.012	.004	.003	.000	
	N	252	252	252	252	252	252	252

*. Correlation is significant at the 0.05 level (2-tailed).

Source: Synthesis from test results

4.4.2. Regression analysis

Based on the results of the linear correlation analysis, the authors conducted a regression analysis to examine how is the impact of factors on the dependent variable.

Table 6. Regression analysis result

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson
1	.649a	.421	.407	.50520	1.853

ANOVA						
Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	45.495	6	7.583	29.709	.000b
	Residual	62.532	245	.255		
	Total	108.027	251			

Coefficients ^a							
Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Collinearity Statistics	
	B	Std. Error	Beta			Tolerance	VIF
	(Constant)	.410	.334		1.230	.000	
	DG	.238	.052	.305	4.549	.002	.526
	TL	.058	.036	.079	1.591	.000	.963
1	QH	.149	.053	.188	2.840	.003	.541
	DK	.319	.065	.273	4.933	.000	.772
	DT	.022	.058	.018	.377	.000	.987
	TC	.085	.049	.085	1.729	.001	.971

a. Dependent Variable: Hlchung

Source: Synthesis from test results

From the results of regression analysis, the authors set up a linear regression equation that evaluates the impact of independent factors on the dependent variable "Employee satisfaction in work" as follows:

$$HL = 0,41 + 0,085TC + 0,273DK + 0,305DG + 0,079TL + 0,018DT = 0,188QH$$

Through the data shown in the linear regression equation, it can be seen that under the condition the other factors unchanged, if the nature of work (TC) factor increases by one unit, lead to the change of variable "Employee satisfaction in work" increases by 0.085 units; if the working conditions (DK) factor goes up by one unit, the satisfaction in work level rise by 0.273 units; if the factor "working performance assessment" (DG) increases by one unit, the change of variable "Employee satisfaction in work" rises by 0.3305 units; if the salary and welfare factor (TL) increased by one unit, the employee satisfaction level change by 0.079 units; if the training and promotion opportunity (DT) increases by 1 unit, the satisfaction level rises by 0.018 units; if the workplace relationships increase by one unit, the change of employees satisfaction go up by 0.188 units;

The adjusted coefficient $R^2 = 0.649$ indicates that the independent variables in the model can explain 64.9% of the variation of the dependent variable.

In the ANOVA variance analysis table, the value $F = 29.709$; sig value = 0.000 shows that the linear regression model is suitable for the data set and can be using.

The statistics of Durbin-Watson = 1,853 show that there is no correlation between the remainder. This means that the regression model does not violate the assumption of the independence of the error. Magnification coefficient (VIF) with a value less than 10 indicates that the regression model does not violate multicollinearity phenomenon (independent variables are strongly correlated with each other).

5. Verify the different impact of the personal factor

Test the differential impact of gender factor: Because this factor has only two values so can be used the test "Independent-Sample T-test." The results show that: The Sig value at Levene's Test = 0.876 > 0.05 indicates the variance between the male and female genders is uniform (no difference) and can use the sig T-Test at the line "Equal variances assumed." At the line "Equal variances assumed," Sig value = 0.227 > 0.05, so we can conclude: There is no statistically significant difference in the satisfaction in work of different gender workers.

Table 7: Result of Independence-Sample T-test
Independent Samples Test

	Levene's Test for Equality of Variances		t-test for Equality of Means						
	F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference	
								Lower	Upper
HL Equal variances assumed	.025	.876	-1.124	196	.226	-.11262	.09275	-.29553	-.07028
HL Equal variances not assumed			-1.212	181.530	.227	-.11262	.09294	-.29601	-.07077

Source: Result from a regression analysis of the authors

Determine the impacts between groups of workers with different age on job satisfaction, and the authors use One-Way ANOVA test. In the test results, considering the value in the Test of Homogeneity of Variances table, the sig value of Levene Statistic = 0.063 > 0.05, so it can be concluded: the variance between groups does not differ, eligible for Anova analysis; Anova analysis results show that the value of Sig = .000 < 0.05. This proves that there is a statistically significant difference in job satisfaction among workers of different ages

Testing the differences impact between groups of employees with different levels of training, because of all employees working at the State Bank are at university and post-graduate levels (only two values), so can use Independence-Sample T-test. The results show that: The Sig value at Levene's Test = 0.136 > 0.05 indicates the variance between the 2 employee groups at the level university and post-graduate are uniform (no difference) and can use the sig T-Test at the line "Equal variances assumed." At the line "Equal variances assumed," Sig value = 0.902 > 0.05, so we can conclude: There is no statistically significant difference in the satisfaction in work of different training level employees.

Determine different impacts among groups of workers with different seniority on job satisfaction, the authors use One-Way ANOVA test. In the test results, considering the value in the Test of Homogeneity of Variances table, the sig value of Levene Statistic = 0.167 > 0.05, so it can be concluded: the variance between groups does not differ, eligible for Anova analysis; Anova analysis results show that the value of Sig = .006 < 0.05. This proves that there is a statistically significant difference in job satisfaction among workers of different seniority.

6. Conclusions and recommendations

6.1. Conclusions

The research results show that the job satisfaction level of workers reached an average level of 3.13 point. Specifically: 29% of surveyed people answer at the level from 1- 3 points; 79% of surveyed people have a level from above 3 - 5 point.

Employee satisfaction with aspects of the job is arranged according to the point of assessment of average satisfaction with the order from low to high (from 1 to 5)

(1). The factor "Assessment of work performance" has a high impact level of 30.5%; The average satisfaction score was only 2.86, of which 62.7% of the surveyed people had a level of agreed from 1 to 3 score meanwhile 37.3% have a level of consent from 3 to 5 score, showing that the employees are not satisfied with the assessment of job performance at the State Bank of Vietnam.

(2). The factor "Relationships at work" influences 18.8%; The average satisfaction score was 2.97, of which 59.1% of the surveyed people had agreed level from 1 to 3 score; 40.9% had an agreed level from 3 to 5 score. The results showed that the employees are not satisfied with the relationship at work.

(3). The factor "Nature of work" has the least impact with the rate of 8.5%; The average satisfaction score was 3.17, of which 47.2% of the respondents had a level of agreed from 1 to 3 score; while 52.8% had a level of consent from over 3 to 5 score. This shows that the nature of work in the state management agencies on money and banking is quite stressful because the employee has to handle many jobs that require high expertise and they often have to deal with issues that affect a lot of individuals and organizations, so workers satisfaction is only in average level with their current job.

(4). The factor "Wages and welfare" has an impact rate of 7.9%; The average satisfaction score was at 3.32, of which 41.3% of the surveyed people had a level of agreed from 1 to 3 score and 58.7% had a level of agreed from 3 to 5 score. This result shows that employees are not satisfied with the salary and welfare at the State Bank.

(5). The factor "Training and promotion opportunities" has a relatively low impact rate of 1.8%; The average satisfaction score was 3.54, of which 23% of the surveyed people had a level of agreed from 1 to 3 score; 77% of people surveyed agreed on over 3 to 5 score. This shows that employees are quite satisfied with the opportunity to be trained and promoted at the State Bank, but due to the regulations on the training regime, promotion and promotion in state management agencies have been institutionalized, all people have to follow the regulations, so the influence level of this factor is not high.

(6). The factor "Working conditions" influences 27.3%; the average satisfaction score was 3.56, of which 22.2% of the surveyed people had a level of agreed from 1 to 3 score; 77.8% had a level agreed from 3 to 5 score. According to the results of quantitative analysis, this factor has a large influence and the survey results show that employees are quite satisfied with working conditions at the State Bank

6.2. Recommendations

Firstly, it is necessary to improve the assessment of job performance for employees working at the State Bank. Assigning tasks must be clear, right people, right jobs; assess the level of completion based on the time taken, and the quality of the work be processed. The evaluation of work performance must be from the grassroots level with the participation of the workers in the assessment process.

Secondly, improve relationships at the workplace; build and implement democratic regulations at all offices of the State Bank; set up reporting channels and increase information exchange so that employees can easily share, report timely and receive the attention and assistance of the higher leaders to solve the work quickly as well as without difficulties in communicating and exchanging with the superiors. Thereby increase understanding between superiors and subordinates. Organizing cultural exchanges, arts, and sports among departments, thereby

enhance the solidarity between employees and brings about a spirit of refreshment, health, and physicality better for employees. Building a friendly and cooperative working atmosphere among individual employees.

Thirdly, the nature of work at the State Bank is quite stressful and affects many individuals or organizations in society, so it is necessary to identify and show employees the role of the job and the level of work, degree of contribution, the importance of work to society. This will help employees understand the role of the work they are doing, thereby create working motivation better.

Fourthly, at the State Bank, the salaries and welfare are paid by the state budget, and according to the regime, it is quite rigid; workers do not have additional income, so they are not satisfied with the salary and current welfare. Therefore, the state bank needs to find ways to save expenses for activities, thereby increasing the spending on salaries and welfare.

Fifthly, creating conditions for employees to attend training courses to improve their qualifications; Publicity all process for promotion; organize examinations to appoint each job position, especially leading positions in agencies under the State Bank.

Sixthly, constantly improving the working environment, new equipment, or replacing old working equipment and facilities so that workers can easily use and improve working efficiency. Raising awareness of preserving public assets, observing rules on occupational safety, ensuring workers' health and safety.

References

- Abraham H Maslow (1954), 'Motivation and Personality,' *New York: Harper and Row*.
- Adams, J. S. (1963), Toward an understanding of inequity, *Journal of Abnormal and Social Psychology*, 67, 422–436.
- Aziri B. (2011), Job Satisfaction, a literature review, *Management Research and Practice*. Vol. 3 Issue 4, pp 77-86
- Bellingham, R. (2004), *Job Satisfaction Survey*, Wellness Council of America.
- Dung T. K (2005), "Measure the level of satisfaction with the job in the context of Vietnam," *Science and Technology Development Journal*, Vol 8, Issue 12, pp.1-9.
- Durst, S. L. & DeSantis, V. S. (1997), *The determinants of job satisfaction among federal, state, and local government employee*, *State and Local Government Review*, Vol. 29, No. 1 (Winter 1997), p. 7-16.
- Ellickson, M.C. & Logsdon, K. (2002). *Determinants of job satisfaction of municipal government employees*. *State and Government Review*, Vol. 33, No. 3, pp.173-84.
- Hackman, J.R., & Oldham, G. R. (1974), *The job diagnosis Survey: An instrument for the diagnosis of jobs and the evaluation of job redesign projects*, Technical Report No. 4, Department of Administrative Sciences, Yale University, USA, Issue 1974-May, pp.87
- Herzberg, F., Mausner, B. and Snyderman, B.B. (1959), *The Motivation to Work*, John Wiley & Sons, New York.
- Luddy, Nezaam (2005), *Job Satisfaction amongst Employees at a Public Health Institution in the Western Cape*, University of Western Cape, South Africa.
- Judge, T. A., & Klinger, R. (2008), Job satisfaction: Subjective well-being at work. In M. Eid, & R. Larsen (Eds.), *The Science of Subjective WellBeing* (pp. 393-413), New York: Guilford Publications.
- Luddy, N., *Job Satisfaction amongst Employees at a Public Health Institution in the Western Cape*, University of the Western Cape, 2005
- Tung H.T & Dung N.T.T (2016) *The sense of fairness in attitudes of treatment at the workplace and working motivation of the lecturers*, *International Journal of Education and Research*, Vol. 6 No. 9 September 2018
- Trong H & Ngoc C.N.M (2008). *Research data analysis with SPSS*. Vol.1, Hong Duc Publisher, Ho Chi Minh City <https://sachvui.com/ebook/phan-tich-du-lieu-nghien-cuu-voi-spss-tap-1-hoang-trong-chu-nguyen-mong-ngoc.857.html>
- Smith, P. C., Kendall, L. M., & Hulin, C. L. (1969). *The measurement of satisfaction in work and retirement: A strategy for the study of attitudes*. Oxford, England: Rand McNally. American Psychological Association, <https://psycnet.apa.org/record/1971-05152-000>
- Vroom, V. H. (1964). *Work and Motivation*. New York: Wiley.

Risks Management and Corporate Performance of Business Enterprises in Jalingo Local Government, Taraba State

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Abstract

This study evaluated the relationship between risk management and corporate performance of Twenty (20) organization register with CAC in Jalingo Taraba state because Risk Management is an integrated framework and monitoring tool for managing uncertainties surrounding the business objectives. To achieve that, this objective was formulated. To provide empirical evidence of the extent to which RM framework has impacted performance in the business sector in Jalingo. The independent variables used were existence of risk management committee, the existence of financial expertise, the existence of audit committee, existence of Chief risk officer, and board size. The study data were sourced from annual reports and accounts of the selected enterprises. The collated data were analyzed using descriptive statistics and correlation matrix. The results reveal that risk management committee, financial expertise, audit committee, and board size have significant positive effect on performance. The result also shows that the existence of chief risk officer has a significant negative effect on performance. The study, therefore, recommended that the regulatory authorities and other relevant institutions are enjoined to reassess their supervisory role with the view to strengthen the RM process and taking the issue of risk management seriously at every level of organizations to provide reasonable assurance.

Keywords: Risk Management, Corporate Performance, Jalingo, and Taraba State

1. Introduction

1.1 Background of the study

The global economic conditions are continuously changing due to innovations, changing nature of the business environment, and risk drivers. This illustrates the realities that organizations are facing risks that threaten reputation and brand as the scope of uncertainties broadened. The risks have become the most important factors that influence the goal of an enterprise (Liu, 2012). The goal of an enterprise is to improve performance; performance is the ability of the firm to generate earnings given the risky environment that the enterprise operates. Therefore, how to deal with risks and how to understand their nature has become companies' first priority. As it is widely acknowledged, companies are set up to create maximum value for their stakeholders, and all activities relating to wealth creation are exposed to risks, therefore, companies are constantly facing

uncertainties, risk are uncertainties which affect company ability to achieve its objective and may result in many interdependent outcomes either negative or positive.

Some risks are necessarily encountered in order to take advantage of strategic opportunities and also, risks that threaten success must be mitigated. Antonius (2015) posits that increased attention is being placed on the subject of risk (Connair, 2013). The Nigeria business environment is examined to be unfriendly with reference to uncertainties in political regimes, cybersecurity risks, the demographic structure, the economic situation, falling oil prices, and geopolitical conflicts. In view of this, the management of companies cannot afford to manage risks casually, especially in this era of constantly changing innovation and technological developments.

Management is responsible for the implementation and monitoring of the risk management process and incorporating it into day to day activities of the company. This requirement on the best practices of the code is recommended by Nigeria code of corporate governance for all listed companies to disclose their risk appetite, risk exposure and disclosure of establishment of risk management thecommittee in their annual reports. In addition, the Committee of Sponsoring Organizations of the Treadway Commission (COSO, 2004) emphasized that the implementation of RM by companies largely depend on corporate governance, enabling laws, regulations, and listing requirements. According to Ishaya and Siti (2015), the implementation of ERM is influenced by the existence of corporate internal audit effectiveness, the existence of risk management committee, the existence of chief legal officer, chief risk officer, and firm size. While investors and shareholders need to be protected through regulation, it is also important for the issuers of securities they invest in, to adhere to effective risk management (OECD, 2011).

Accordingly, based on the data acquired from the annual reports and accounts of industry, it indicated that many of the companies have Risk Management Committee (RMC), Audit Committee, Chief Risk Officer (CRO), executive directors with financial expertise and acceptable board of directors which are variables that will implement RM framework. Therefore, the primary purpose of this study is to determine the type of relationship that exists between RM and firm performance of the business enterprise in Jalingo, Taraba state.

1.2 statement of the problem

The greatest problem of enterprise is in their inability to understand risks and to venture into it, management of risk is an aptitude task to enterprise hence, there corporate performance cannot be measured in a better light, therefore the absence of corporate performance is linked directly or indirectly to risk management. This study investigates the link between Risk Management corporate performances in business enterprise in Jalingo Taraba State.

1.3 Objective of the study

The objective of the study is to provide empirical evidence of the extent to which RM framework has impacted performance in the business sector in Jalingo.

1.4 Research question

The research question that emanates from the objective is; To what extent does risk management impact performance of business enterprises in Jalingo?

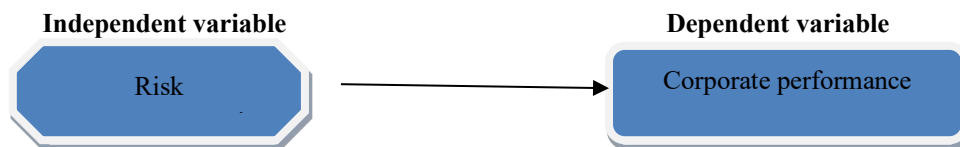
1.5 Significant of the study

Despite the benefits of risk management, not many business enterprises maintain RM in Taraba. Moreover, there is a dearth of study on risk management in business enterprises in Nigeria. The available studies on risk management in Nigeria focused mainly on the Nigerian banking industry (Garuba, 2010; Adeyemi, 2011; Njogo, 2012; Ugoani, 2012). Thus, there is limited literature on risk management in business enterprises in Nigeria. The study fills the gap and contributes to knowledge by broadening the scope of literature on risk management and

corporate performance of business enterprises in Nigeria most especially Jalingo, Taraba state. Consequently, the study is imperative in order to increase knowledge on risk management, its importance, and the need to minimize risk in business enterprises in Jalingo, thereby improving enterprises performance and the nation's economy.

2. Literature Review

2.1 Variables of the Study



2.1.1 Theoretical Framework

There are several theories used in the literature on risk management research; such as stewardship theory, agency theory, and rational choice theory. For the purpose of this study, agency theory serves as the theoretical foundation. Agency theory stresses the need for resolution of conflict of interest between the principal (shareholders) and the agents by enhancing monitoring mechanisms such as Enterprise Risk Management (ERM), corporate governance and effective internal control system (Nocco & Stulz, 2006; Jensen, 1993). This theory underscores the need for the firm to reach its goal of improving financial performance, thereby increasing shareholders value by implementing Enterprise Risk Management (ERM) practices. Agency theory serves as the interplay between the principal and the agent in ensuring that organization achieves its corporate objective.

2.2 The Concept of Risk and Risk Management (RM)

Every step taken in life involves risk; Life itself is a risk. Risk occurs in the everyday life of humans, as well as companies. Consequently, it is imperative to detect and manage risks in order to lessen their threats and improve their potential (Reuvid, 2012). Risk is the likelihood of gaining or losing something important. It is the implication of action taken in the face of possibility or threat of damage that is caused by external or internal weaknesses which may be avoided through pre-emptive action. Sobel and Reding (2004) view risks as that unknown or unforeseen circumstances that may stand in the way to success. Risk are uncertainty that can affect a company's ability to attain its objective and can lead to many interdependent results, so business risk is related to business objective; therefore, risk-taking is a necessity for success; there is no reward devoid of risk.

The awareness of RM was very low not until when Committee of Sponsoring Organization of Treadway Commission (COSO) initiated CRM Framework in 2001 by engaging PriceWaterhousecoopers (Pwc) to develop a comprehensive CRM framework for management and to improve organization risk management. COSO is a joint initiative to combat corporate fraud established by five private organizations in the United States. Their objective is to guide executive management and governance entities on important aspects of corporate governance, internal control, CRM, and fraud. Hoyt and Liebenberg (2008) affirmed that, the result of Pwc effort was formally announced in 2004. Gates, Nicolas, and Walker (2012) asserted that COSOC ERM framework components help companies to cope with risk and provide objective setting, event identification, risk assessment, risk response, control activities, information communication, and monitoring. CRM provides a framework for the Board of directors and management to deal effectively with uncertainties, the risk, and opportunities associated with firm objectives. RM builds on internal control and provides a more vigorous and all-encompassing focus on risk management.

RM is a strategic issue for businesses and the academia, which is now broader in scope and have been included in corporate philosophy (Kleffner, Lee, & McGannon 2003). In Carrying out ERM, COSO emphasizes the existence of ERM frameworks such as Objective setting, risk identification, Risk assessment, Risk response,

internal control environment, the involvement of management, divisions, and all line of directors within an organization (Arif, 2011). In addition, (COSO, 2004) emphasized that the implementation of RM by companies largely depend on corporate governance, enabling laws, regulations, and listing standards. Therefore, the implementation of RM framework is usually effected by the existence of audit committee, risk management committee, chief legal officer, chief risk officer, regulations like laws and other regulatory compliance and the size of the firm (Ishaya & Siti, 2015).

2.3 Risk Management and Performance

Shima, Mahmood, Happy, and Akbar (2013) examined the relationship between enterprise risk management and firm performance using 175 listed non-financial public companies in Malaysia. Data were sourced from annual report and accounts of the listed companies using the existence of risk management committee, finance experts, the board size, Audit committee and separation of the audit committee and risk management as independent variables while Return on Assets is proxy for performance. Their study used multiple regressions to test the relationship and the findings show that there exists a significant relationship between ERM and firm performance Kallamu (2015) also examined the impact of risk management committee attributes and firm performance of 37 Malaysian finance companies covering period of five years from 2007 financial year to 2011 using finance expertise, presence of none executive directors, existence of risk management committee as independent variables and return on assets as dependent variable. The result indicated a significant positive relationship between risk management committee and firm performance.

Kacem and ZemZem (2014) studied the relationship between risk management, corporate governance, and performance in 17 Tunisian lending institutions over a period of 10years using OLS regression. Their findings revealed that board size has a significant effect on performance, while the existence of a risk committee within the institution has a significant negative effect on performance. Arif (2011) investigated the effect of ERM on performance after its implementation using 18 non-banks listed public company's in Indonesia. The study uses the existence of chief risk officer and the existence of risk management committee as independent variables while earnings per share and return on assets were used as dependent variables. The result of statistical test after implementing ERM indicate that financial performance only significant below 5% and the t value is greater than t table. This explained that after ERM implementation, it gives the significant difference to income volatility. In a similar study, Ugwuanyi and Ibe (2012) examine ERM and firm performance of Nigerian Brewery industry using cross-section survey design. The questionnaires were distributed to top and middle management staff of 3 major brewing firms in Nigeria. The results of the statistical test indicate that ERM enhances the performance of firms in the Brewery industry in Nigeria.

In another research on ERM and firm performance, Ping and Muthuveloo (2015) studied the effect of implementing ERM on firm performance using both primary and secondary data. Their results revealed that the implementation of ERM has a significant influence on firm performance. Silva and Chan (2014) carried out research on ERM adoption and firm performance in 30 companies listed on Brazilian stock exchange for a period of 9 years. The findings show a positive and significant relationship between ERM and firm performance. Odonkor, Osei, Abor and Adjasi (2011) examined 18 Ghanaian banks, and they discovered that high involvement of boards in the risks management process has a significant impact on the efficient risk management system, and this customarily leads to considerably higher ERM practices in the banks. In the same vein, Njogo (2012) conducted research in risk management practices in the Nigerian banking sector and opines that a high level of leverage is related to high risk. Thus, the banks need to implement a more rigorous and Effective ERM.

In identifying whether the company implement RM or not, there are several variables that can be found in annual reports and accounts of listed companies. Therefore, based on review of related literature, five independent variables were selected which are relevant to the study such as Existence of Risk Management Committee, the Existence of Financial Expertise, the existence of Chief Risk Officer (CRO), Existence of Audit Committee and Board Size. The study of Kacem and Zemzem (2014) revealed that the existence of a risk management committee in the institution has a significant negative effect on performance. Fadun (2013)

maintained that the risk management committee has a significant influence on performance. Ahmed and Mohammed (2010) investigated the adoption level of ERM in Malaysia, and their study discovers that a positive relationship between the presence of CRO and firm value. The findings of a study conducted by Daud, Yazid, and Hussein (2010) on the effect of Chief Risk Officer in Enterprise Risk Management Practices indicated that CRO and ERM were significant and CRO is an important factor in risk management.

The professional experience of board members has become very significant and germane to the performance of an organization (Rose & Rose, 2008). Xie, Davidson, and DaDalt (2003) affirmed that if directors do not have ample knowledge of accounting, then it will diminish their ability to create informed decisions and may lead to higher cost of an agency. However, Van Ness, Miesing, and Kang (2010) examined the board of directors' composition and corporate performance and discovered a negative relationship between board expertise and firm performance. Existence of audit committee plays a role in ERM because it ensures oversight of internal processes and enhances continuous improvement in the organization (Badara & Saidin, 2014). Hasnah and Adejoh (2015) affirm that there is a significant relationship between the audit committee and firm performance. There are different views on whether board size has an impact on firm performance. Kyereboah-Colemon (2007) indicated that large boards enhance shareholders wealth more positively than smaller ones.

2.4 Research gap identified

Business enterprises are fast growing in Nigeria; however, volatility in oil prices and the changes in business models coupled with global economic crisis and consumer preferences have exposed products and retail companies to business risk. In addition, the unpredictable business environment and globalization have also increased risks facing firms and consequently leading to dwindling performance of companies in the Cons Nigerian economy. Despite the aforementioned factors, little attention is given to Risk management, coupled with weak and ineffective risk management. Therefore, in order to avoid earnings volatility and return Nigeria to the path of long-term economic growth, stimulating the business sector through the use of enterprise risk management model that mitigate impending risk in the sector is emphasized.

3. Methodology

3.1 Study design

Due to the nature of the research, descriptive statistics, correlation design were used. Correlation method examines the extent of the relationship between the independent variable (Risk Management (RM)) and the dependent variable (corporate performance). The data were analyzed through the use of the SPSS statistical package.

3.2 Population and Sample Size

To ascertain the numbers of entire enterprises in Jalingo, is very difficult due time and resources at the time of the study however, convenient sampling was adopted. Where the sample size was selected to be 20 enterprises

3.3 Instrument of analysis

The data on the study variables were collected from the annual reports sourced from the population for the study is Twenty (20) Companies, register with CAC. The data for this study are secondary data sourced from annual reports and accounts of the Twenty (20) sampled companies covering a period of 6 years, starting from 2013 to 2018.

3.4 Result and discussion

Table 1. Descriptive Statistic

	*RMC	*FIN.EXP	*CRO	*AUD. COM	*BSIZE	*PERF
MEAN	0.95	0.4056	0.275	6	9.9	0.07845
MEDIAN	1	0.4	1	7	17	0.4
MAX.	1	0.4	1	7	9	0.08
MIN.	0	0.25	0	4	6	-0.24
STD.DEV.	0.219043	0.103947	0.451261	0.64345971	3.006726	0.1216902
Observations	120	120	120	120	120	120

Table 1 provides basic descriptive statistics of the variables. A mean value 95% of companies have a risk management committee, while 5% do not have a risk management committee? However, this might be due to the fact that risk management committee does not exist in some companies in the early years of the period under investigation. Adoption of this variable may serve as long term competitive advantage to companies. The presence of financial expertise, measured by the percentage of directors with an accounting/finance background or relevant professional qualification, shows a mean value of 40.5%. This is an indication that 59.5% of board members do not have a background in accounting/finance. The minimum percentage of directors with a background in accounting/finance is 25%, and the maximum is 75%. The table also shows that on the average 27% of the sample companies have chief risk officer while 73% do not have. The mean value for audit committee reflects 6. This implies that the audit committee of sample companies have significant members and comply with provisions of section 359 (4) of companies and allied matter acts that stipulates 3 shareholders and 3 directors, respectively. Thus, this may affect the effectiveness of audit committee and brings about greater board's attention and governance oversight, which in turn increase shareholders wealth. Board size of the sample companies have an average of 9.9, which can be approximated to 10, and this shows the level of compliance with the corporate affair code of corporate governance. The CAC code recommends for companies to have a minimum of 5 board members. It, therefore, means that the sample companies have an average of 10, which is more than the minimum requirement. Furthermore, the minimum number of board size is 6 with a maximum of 17 directors

Table 2. Correlation Matrix

	PERF	RMC	FINEXP	ECRO	AUDCOM	BSIZE
PERF	1					
RMC	0.2779	1				
FINEXP	0.3814	0.1691	1			
ECRO	0.0236	0.1413	-0.1031	1		
AUDCOM	0.1790	0.7211	0.0438	0.2841	1	
BSIZE	0.2658	0.0658	0.1941	0.0666	0.2011	1

Table 2 shows the degree of correlation between risk management committee and performance is 0.277 (positively low correlated) and significant, which implies that as risk management committee increases, return on asset increases and vice versa. The degree of correlation between board size and risk management committee is 0.06 (positively low), which implies that as board size increases risk management committee increases and vice versa. Existence of a chief risk officer is negatively associated with performance. The coefficient between audit committee the existence of chief risk officer is 0.28(positively correlated), which means they both move in the same direction. The coefficient of correlation between financial expertise and return on assets is 0.38 (positively correlated) that is, and they move in the same direction.

Conclusion and Recommendation

Management is responsible for executing and monitoring the process of risk management and incorporating it into the daily activities of the company. Therefore the significant correlation between RM and firm performance suggests that RM can leverage firm performance by ensuring that adequate resources are deployed to enhance risk management systems. The existence of risk management committee, financial expertise on the board, size of the audit committee, and board size have significant impact while the existence of chief risk officer exhibits insignificant impact on performance. The study shows that there exists a significant positive relationship between risk management committee and firm performance. This means that when an organization has a risk management committee in place, the organization can use it as a competitive advantage to transform risk management into a value-enhancing capability. This supports the findings of Hoyt and Liebenberg (2008), Shima et al. (2013) and Kallamu (2015). On the other hand, the finding is partially in accordance with the findings of Kacem and Zemzem (2014), whose findings indicate a negative but significant effect of the existence of risk management committee on performance. Board size has a positive significant impact on firm performance, and this finding is consistent with the findings of Kyereboah-Colemon (2007) and Kacem & ZemZem (2014). This means that large boards enhance shareholders wealth more positively than smaller ones and also implies that the CAC code recommendation for companies to have a minimum of 5 board members is in order.

The findings of the study also revealed that the existence of finance experts has a significant positive impact on firm performance. This will enhance firm performance and attainment of organization's objectives. However, the positive relationship is contrary to prior studies such as Kallamu (2015) and Shima et al. (2013) whose findings were negative.

The existence of the chief risk officer has an insignificant impact on the performance of consumer goods companies. This is contrary to the findings of Daud, Yazid, and Hussein (2010). The size of the audit committee has a significant negative impact on the performance of the consumer goods companies. However, these companies have complied with the provisions of section 359(4) of Companies and Allied Matter Acts (CAMA) that stipulated 3 shareholders and 3 directors. This implies that the requirements of CAMA is quite adequate. The existence of risk committee, chief risk officer, finance experts, audit committee, the acceptable board size, and development of policies on ERM and effective coordination of firms' activities will go a long way in building risk management capabilities. The study, therefore, recommended that the regulatory authorities and other relevant institutions are enjoined to reassess their supervisory role with the view to strengthen the RM process and taking the issue of risk management seriously at every level of organizations to provide reasonable assurance.

References

- Ahmad, R. R., & Tahir, M. T. (2011). Review of the literature on enterprise risk management. *Business Management Dynamics*, 1(5), 8-16.
- Antonius, A. (2015). *The essential of enterprise risk management*. Indonesia Institute of commissioners and director.
- Arif, S. (2011). The analysis of company's financial performance before and after implementing ERM: An empirical study in Indonesia. *Asian Journal of Business and Management Sciences*, 17(1), 92
- Connair, S. (2013). *Enterprise risk management: from silo to strategic objectives*. Armed Forces Comptroller
- COSO. (2004). *Enterprise risk management—integrated framework executive summary*. Retrieved April 23, 2016, from <http://www.coso.org/Publications>.
- Daud, W. W., Yazid, A. S., & Hussin, M. R. (2010). The effect of chief risk officer on enterprise risk management practices: evidence from Malaysia. *International business and Economics Research*.
- Fadun, O. S. (2013). Risk management and risk management failure: Lessons for business enterprises. *International Journal of Academic Research in Business & Social Sciences*,
- Gates, S., Nicolas, J. L., & Walker, P. L. (2012). Enterprise risk management: a process for enhanced management and improved performance. *Management Accounting Quarterly*.

- Hoyt, R. E., & Liebenberg, A. P. (2008). The value of enterprise risk management: evidence from the U.S. insurance industry. *Journal of Risk and Insurance*.
- Ishaya, J. D., & Siti, Z. S. (2015). Determinants influencing the implementation of enterprise risk management in the Nigerian banking sector: *International Journal of Asian Social Science*
- Kacem, O., & Zemzem, A. (2014). Risk management, board characteristics and performance in Tunisian lending Institutions. *International Journal of Finance and Banking Studies*, 3(1), 2147-4486.
- Kallamu, B. S. (2015). Risk management committee attributes and firm performance. *Journal of International Finance and Banking*, 2(2), 1-24. <https://>
- Kyereboah, C. A. (2007). Corporate governance and shareholder value maximization: an African perspective. *African Development Review*,
- Liu, J. (2012). The enterprise risk management and the risk oriented internal audit. *International Business Journal*,
- Njogo, B. O. (2012). Risk management in the Nigerian banking industry. *Kuwait Chapter of Arabian Journal of Business and Management Review*,
- Odonkor, T. A., Osei, K. A., Abor, J., & Adjasi, C. K. (2011). Bank risk and performance in Ghana. *International Journal of Financial Services Management*, Ping, T., & Muthuveloo, D. (2015). The impact of ERM on firm performance. *Asian Social Studies Journal*,
- Olayinka, Eriki, Jacob (2018) Enterprises risk management and financial performance: Evidence from Emerging market,
- Reuvid, J. (2012). Managing business risk: A practical guide to protecting your business. *Annals of Actuarial Science*, OECD, (2011). Principles of corporate governance and its assessment methodology. Retrieved April 27, 2016
- Shima, N., Mahmood, Z., Happy, A., & Akbar, A. (2013). Enterprise risk management and performance in Malaysia. *Interdisciplinary Journal of contemporary Research in Business*,
- Silva, J. B., & Chan, B. L. (2014). Enterprise risk management and firm performance: evidence from Brazil. Retrieved March 3, 2017 from www.soac.unb.br/index.php/paper,
- Sobel, P. J., & Reding, K. F. (2004). Aligning corporate government with enterprise risk management. *Management Accounting Quarterly*
- Ugwuanyi, U. B., & Ibe, I. G. (2012) Enterprise risk management and performance of Nigeria's brewery industry.
- Yinka, Taibat, Bamidele (2018) Enterprise risk management and financial performance of selected consumer goods companies in Nigeria.

Determinants of Entrepreneurial Intent Among University Students: The Case of Marien Ngouabi University

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Abstract

Government and policy makers in Congo-Brazzaville are faced with different social-economic problems. One of the most pressing challenges facing Congo especially in the face of economy recession is unemployment problem among the graduates. Marien NGOUABI University have introduced entrepreneurship education to promote the interest of graduates to becoming future entrepreneurs. This Research aimed to establish and explain factors that influence entrepreneurial intentions among university students in Congo brazzaville. The target is university graduates students. The data was gathered at University-enterprise partnerships department. The survey was structured and planned at a time when student's graduates were gathered in rectorat in May 2017, for seminar about self-marketing conducted by the University-enterprise partnerships department. A total of 2800 students were selected, they were graduate from different major area, aged between 20 and 35 years old. Results from logistic regression analysis showed that gender, tutor education, Field of study, parents own a business, having a job while at university, Parent's monthly income, desire for independence, living with parents together, school calendar were the key factors that influence students' entrepreneurial intention.

Keywords: Determinant, Entrepreneurial Intent, University Students, Marien NGOUABI University

Introduction

Government and policy makers in Congo-Brazzaville are faced with different social-economic problems. One of the most pressing challenges facing Congo, especially in the face of economic recession is unemployment problem among the graduates. The underlying problem is that there is an increasing number of graduates from Colleges of Education, Polytechnics, and Universities that are seeking opportunities in the labour market every year. As the graduates cannot always depend on the public and private sectors in providing job opportunities, entrepreneurship is tend to be the alternative solution for their unemployment (Iro-Idoro and al, 2017).

Indeed, in CONGO it used to be that if you graduated from university, with good grades, you were guaranteed a job in your chosen field. But as more and more people go to university, this is no longer the case.

Research by Pihie and Akmaliah (2009) posited that 'there is a need for universities to enhance their teaching strategies in order to improve entrepreneurial self-efficacy and desire among students to opt for entrepreneurship as a career choice.'

The enthusiasm for entrepreneurship is obviously felt all over the world, in developed countries, but increasingly in developing countries as well. Such is the case in Congo, a country willing to put into place development policies driven by other industrial sectors than hydrocarbons.

Entrepreneurship has been given serious devotion due to its importance on economic growth, job creation, sources of innovation, and productivity (Urbano and Aparicio, 2015). Thus, developing countries like Congo encourage students to be involved in entrepreneurship. Part of the government effort to instill entrepreneurial spirit among university students is to make entrepreneurship subject compulsory to all students regardless of their field of study. According to Gree and Thurnik (2003), entrepreneurship has been recognized as one of the tools that drive the economy of a country. Turker and Selcuk (2009) pointed out that entrepreneurial activities are not only the incubator of technological innovation, but they also provide employment opportunities and increase competitiveness.

Given the role that entrepreneurship play in the economic development of a country, researchers acknowledge that students are the key population for entrepreneurial activities. A majority of these students will immediately contribute more to the economic growth after they graduate, not as salary workers but as entrepreneurs.

Therefore, it is important to know the factors that influence students' intentions to launch a new start-up or entrepreneurship effort. Thus, there is a call to conduct a research to understand the determinants of students to involve in entrepreneurship and also to contribute to the development of understanding in this area. This study can help governmental institutions, agencies, academic, entrepreneurial educators, consultants, and advisors to find the appropriate solutions to foster entrepreneurship in universities and consequently in the society. The main purpose of this study is to understand the student's entrepreneurial intention.

1.2 Research Questions

What are the determinants of entrepreneurial intentions of Congolese students?

Which factors can motivate and hinder the entrepreneurial intentions among university students in Congo Brazzaville?

The following specific questions have also been addressed on the basis of the main question to explore the entrepreneurial intentions:

- 1- Do demographic factors such as age, gender, education level, and grades, work and business experience, family background affect the entrepreneurial intentions among university students?
- 2- Is there any relationship between entrepreneurial education and entrepreneurial intentions?
- 3- is there a link between perturbation of scholar calendar and entrepreneurial intentions?

Study Objectives

This study aims to determine the factors that influence the "entrepreneurial intent" among Marien NGOUABI university students in Congo Brazzaville.

Significance of the Study

This study would have the potential to contribute at least the following aspects. First and foremost, this study will contribute a lot to the university in order to thoroughly understand its students towards self-employment intention and take a remedy/action in creating entrepreneurial environment which stimulate students to become self-employed/entrepreneurs since universities are expected to incubate entrepreneurs rather than institutions to produce those who are waiting jobs/employment opportunities from government, non-government organizations.

Consequently, the university has to play its role in the fulfillment of the country's Millennium Development Goal (MDG).

Second, the subjects of this study will be benefited from the study by getting some insights regarding the importance of self-employment/entrepreneurship.

Many studies on entrepreneurship intention have been done in so many places such as South Africa, America, Asia, Europe, and America. However, there has never been much studies on entrepreneurship intention among the University students in central Africa, and particularly in Congo Brazzaville, therefore this study has come about to fill this particular gap.

The rest of this paper proceeds as follows:

We will first summarize the entrepreneurial intentions literature. Our hypotheses will be developed in the latter. After having presented our methodology, our results will be discussed, and suggestions for future research avenues and more appropriate public policies for youth entrepreneurship in Congo will be made.

Originality/value: Over the past decades, universities have been receiving an increasing demand to go beyond their role of producing science and technology to explore its knowledge potential to produce novel commercial applications. However, while there is a growing interest in ways to foster scientific, academic entrepreneurship, universities also serve as a positive environment for student entrepreneurship training, knowledge sharing, testing ideas, and learning. So far, the importance of student entrepreneurship has received far less attention than it likely deserves.

Literature Review and Conceptual Framework

2.1 Introduction

For a better understanding of entrepreneurial behavior, this chapter provides the *definition of Core Concepts* and some highlights of previous research on entrepreneurial intentions.

2.2 Definition of Core Concepts

Entrepreneurship

Entrepreneurship has always been an interesting topic which is being discussed not only by economists and sociologists but also by psychologists. Various researches from those disciplines succeeded to enhance and develop the theories of entrepreneurship.

The literature review proves that understanding of "entrepreneurship" varies and there is no consensus between researchers in this respect.

Among the earliest scholars is Schumpeter (1934), who described entrepreneurship as a process of creative destruction. A firm that produce new product, services, or systems is innovator who made the existing practice obsolete.

Knight, Drucker, Hart, Stevenson, and Dial have defined entrepreneurship as risk-taking behavior which has been carried out for the future benefit and gaining independence and self-control (Parker, 2004). An entrepreneur is a person who undertakes and operates a new enterprise or venture and assumes some accountability for the inherent risks.

Ma and Tan (2006) defined entrepreneurship as a generator of national prosperity and competitiveness. It is a process of establishing a business organization for the provision of goods and services, the creation of jobs which contribute to economic development (Bilic et al., 2011). It is the act of opening and running a business venture for rendering services to people, creation of employment opportunities, as well as making profit.

Entrepreneurship can also be defined as a discipline, which can be learned, as it is being done in increasing quantity and quality across the globe (Kassean et al., 2015). Kew et al. (2013) stated that promoting entrepreneurship amongst young people is important in reducing unemployment in the labour market where formal employment opportunities are scarce. According to Maas and Herrington (2006), entrepreneurship is a significant component of the solution to a nation's development issues. Herrington et al. (2009) noted that given the failure of the formal and public sector to absorb the growing number of job seekers in a nation, increasing attention had focused on entrepreneurship and new firm creation and its potential for contributing to economic growth and job creation.

Early exposure to family business influence attitude towards entrepreneurship (Krueger, 1993). Krueger (1993) also suggested that students with self-employed father gain good knowledge about entrepreneurship in their early age. Drennan et al. (2005) found that those who reported a positive attitude toward family business experience agreed starting a business is both desirable and feasible.

Most of the entrepreneurs are self-motivated (Akhteruddin, 1999). The most important factors behind the self-motivation is the attachment with the environment by the family, gender, education, and others. Women entrepreneurs are motivated by husbands (50%), family members (34%), friends, and families (16%) and GO and NGOs (Rezia, 2000).

2.2.2 Intention

Human beings are the best creature of almighty and thus excel themselves over other creature in certain important areas. One area certainly is their ability to think and judge phenomenon and also provide judgmental opinion by concisions and judicious thinking (Liñán, 2004). Alongside that human beings tend to differ genetically as far as their preferences are a concern. This notion certainly gives the birth of their ability to get attracted towards certain things while also distracted and demotivated by certain factors and forces (Delmar and Davidsson, 2000). This motivation and demotivation about objects, issues, feelings, beliefs, and also many other verbal and nonverbal expressions commonly referred to as an intention which may be positive or negative in both ways (Bird, 1988). Intention is an individual's specific propensity to perform an action or a series of actions. It is the result of conscious thinking that directs behavior (Parker, 2004). Bird (1998) defines intention is the state of mind directing a person's attention and action towards self-employment as opposed to organizational employment.

2.2.3 Entrepreneur and Entrepreneurial Intention

The origin of the concept "Entrepreneur" lies in the 17th century in France – as an individual commissioned to undertake a particular commercial project by someone with money to invest. In its earlier stages, this usually meant an overseas trading project. Such projects were risky, both for the investor (who could lose money) and for the entrepreneur (who could lose a lot more) (Liñán, 2004 and Tkachev and Kolvereid, 1999). Although the term was used before Cantillon, it is clear that Cantillon was the first to offer a clear conception of the entrepreneurial function as a whole (in 1755). This term was introduced in the economic literature by him to identify the person who had the responsibility to a particular project (Nueno, 1995). He defined "Entrepreneur" as a person who took an active risk-bearing role in pursuing opportunity. Behaviorists' such as Max Weber (1930) and David C. McClelland (1961): tried to understand entrepreneur as a person. They mainly concentrated on creativity and intuitive characteristics of entrepreneurs (Ronstadt, 1990 and Krueger et al., 2000). Entrepreneurs not are characterized by every action they take, but by a particular set of actions aimed at the creation of new wealth with their ventures.

The universe of the entrepreneur, since its genesis, is associated with its own behavior and the factors that influence their decision making. Thus becoming worthwhile an analysis on the main conceptions and models of existing entrepreneurial intentions.

Entrepreneurial intention refers to intent to perform entrepreneurial activity. Several scholars focus on entrepreneurial intention in different perception, for example; Entrepreneurial intention as intention to start a new business (Krueger & Brazeal, 1994), the intention to own a business (Crant, 1996), or intention to be self-employed (Doughlas & Shepherd, 2002). It usually involves inner guts, ambition, and the feeling to stand on ones feet (Zain, Akram & Ghani, 2010).

Krueger (1993) defines entrepreneurial intentions as a commitment to starting a new business. This intention indicates potentiality of an entrepreneur to start business in the future.

Some scientists (Wu, 2008; Nabi, et al., 2006; Guerrero, et al., 2008) define entrepreneurial intention as a state of mind that people wish to create a new firm or a new value driver inside existing organizations.

An individual may have potential to be an entrepreneur but not make any transition into entrepreneurship unless they have such intentions (Ismail et al., 2009). Bird (1988) argues that intention is an important factor in facilitating towards new venture establishment and has a significant impact on the firms' venture success, survival, and growth. He suggested that intentional process often begins based on entrepreneur's personal needs, values, wants, habits, and beliefs. Studying on entrepreneurial intention provides valuable insights for researcher to understand entrepreneurial process and predict entrepreneurial activities in better way through identifying antecedents of entrepreneurial intention (Davidsson, 1995; Bird, 1998; Krueger et al., 2000; Peterman & Kennedy, 2003; Liñán, 2004; Kolvereid & Isaksen, 2006; Krueger, 2007; Dell, 2008; Ismail et al., 2009). Krueger (2007) stipulates that intention serves as a mediating factor between entrepreneurial action and potential exogenous influence (traits, demographics, skills, social, cultural, and financial support). They suggested that entrepreneurial intention helps in explaining the reasons on why certain individuals tend to start own business before opportunity scan or deciding type of business to involve in. They stated that entrepreneurs themselves should benefit from a better understanding of their own motives, intention affords them a chance to understand what factors drive them to make their decisions to pursue entrepreneurial career and how the venture becomes reality.

2.3 Theories of entrepreneurial intention

Previous studies have contributed to the entrepreneurship literature by using intentional models in trying to explain the entrepreneurship phenomenon. One of these models is the entrepreneurial event model (SEE) in which entrepreneurial intentions depend on three elements: a) the perception of the desirability; b) the propensity to act; and c) the perception of feasibility (Shapero, 1982). Another well-recognized model is based on Ajzen's theory of planned behavior (Ajzen, 1991). According to Ajzen, intentions are explained by: a) subject's attitudes toward the behavior; b) subjective norms; and c) the subject's perception of behavioral control. Another model of intentions was developed by Bird (1988) which considers that entrepreneurial intentions are based on a combination of both personal and contextual factors. Further development of the Bird's model was made by Boyd and Vozikis (1994) to include the concept of self-efficacy taken from the social learning theory. Another model was proposed by Davidsson (1995), which suggested that entrepreneurial intentions can be influenced by: a) conviction, defined by general attitudes (change, compete, money, achievement, and autonomy) and domain attitudes (payoff, societal contribution and know-how); conviction, in turn, is related to personal variables including age, gender, education, vicarious experience, and radical change experience.

Different studies have been conducted around the models described above (see e.g. Audet, 2002); Autio, Keeley, Klofsten, and Ulfstedt, 1997; Boyd and Vozikis, 1994; Davidsson, 1995; Krueger et al., 2000; Peterman and Kennedy, 2003; Souitaris, Zerbinati, and Al-Laham, 2007). To our knowledge, few empirical evidences have been reported regarding the effect of exposing students to entrepreneurship education on the entrepreneurial intentions. Previous studies have suggested that entrepreneurship education should improve the perceived feasibility for entrepreneurship by promoting self-efficacy and perceived desirability for an entrepreneurial career (Krueger and Brazeal, 1994). One study is of Peterman and Kennedy (2003) in which it was found that exposure to enterprise education affects intention. However, the sample was taken at high school rather than at the university level. Hence, more research is needed to investigate the claims discussed above.

2.4 Factors influencing Entrepreneurial Intention

Factors affecting entrepreneurial intention may be internal that is personality traits or external that is the general environmental factors such as culture, political, and economic factors.

2.3.1 Internal factors

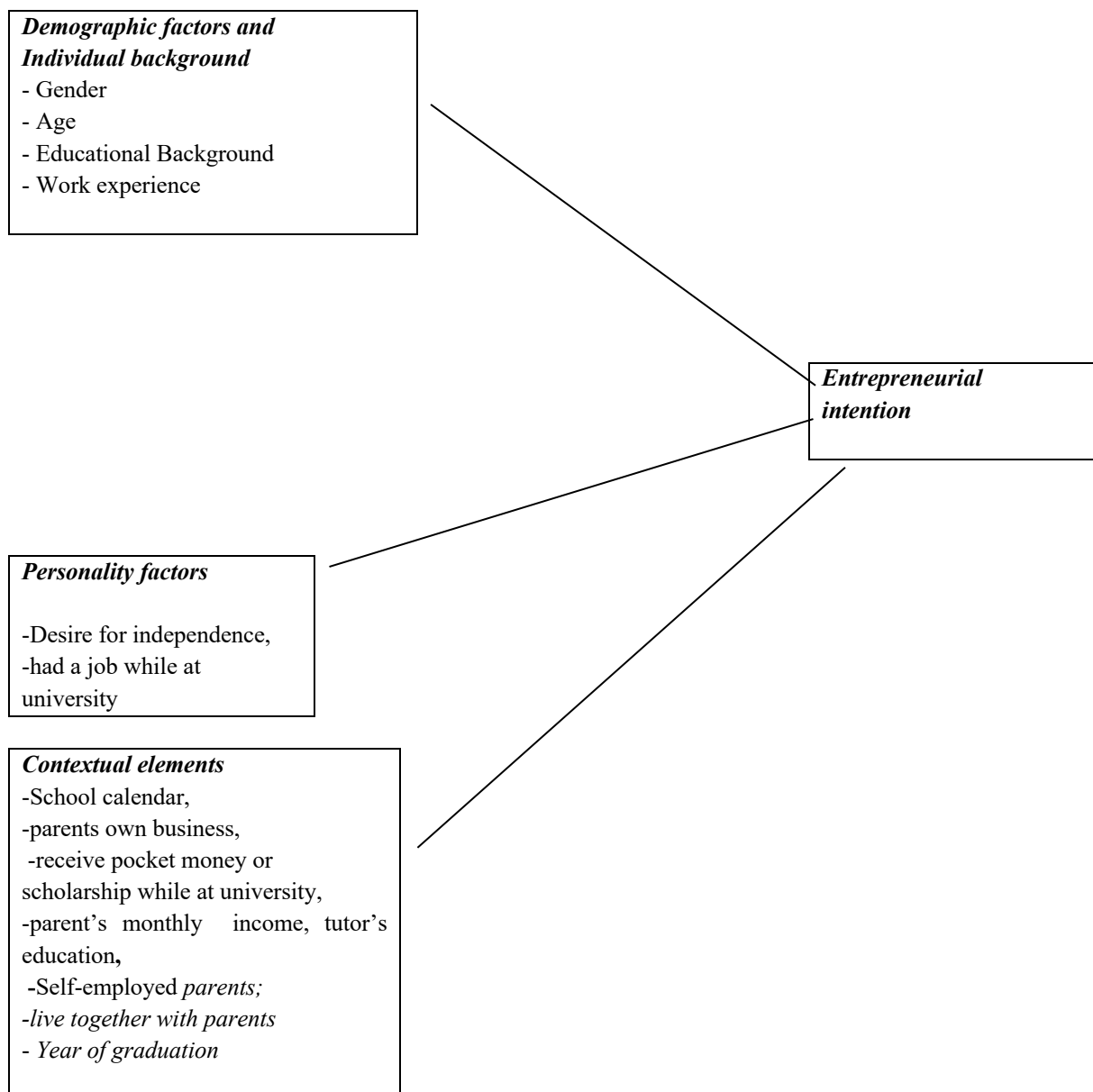
From the substantial number of previous research on entrepreneurial intention, it has been identified that three factors dominate entrepreneurial intention. One is his or her demographic profile that includes age, sex (gender), previous experience (whether they had a job while at university), and influence of role model. Second one is personality traits that include self-efficacy, confidence, autonomy (whether they received pocket money or scholarship while at university, desire for independence), locus of control, risk-taking tendency, and professional attraction. Third factor is contextual that includes education and environment (Wärneryd, 1988).

According to trait theory of entrepreneurship- entrepreneurial intentions are dictated by some particular traits. Those are: High need for achievement; which means a need to always achieve new bold goals, risk-taking propensity; which defined as a willingness to take financial risks, tolerance for ambiguity; which refers no fear of the unknown, innovation; which is an ability to create new or modify existing business concepts, intuition; which is synonymous of make decisions based on 'gut feelings', internal locus of control which is synonymous to a belief that the future is determined by their own actions and also proactiveness; which is making plans for events before they occur (Boyd and Vozikis, 1994).

2.3.2 External Factors Environment

According environmental approach theory-Choice of Entrepreneurship is related to external factors beyond the individual's control, seen as a cultural phenomenon, education(Entrepreneurial knowledge, field of study) and experience, family background(whether parents own business; parent's monthly income, tutor's education, Self-employed *parents*, *Whether parents live together with him*), School calendar . Adze(2018) et al. worked on some factors to identify the determinants of entrepreneurial intentions among students in the democratic republic of Congo. They investigated the effect of innovation, education, family background, and gender difference on creating intentions. They found innovativeness and family business experience are related with entrepreneurial intention. Contingency theory of entrepreneurship suggests that people do not become entrepreneur willingly rather situations or contingencies force them to become so. In such situations, they have some motivations for becoming entrepreneurs in certain situations (Shaver and Scott, 1991).

Based on some previous research, it is important to test the influence of internal and external factors in stimulating student intention at university in entrepreneurship. The framework of this research can be seen in Figure 1.

Figure 1. **Research Model**

Based on the description above, the hypothesis in this study are:

Hypothesis 1: Demographic factors and individual backgrounds, such as age, gender, education, and work experience have an influence on entrepreneurial intentions.

Hypothesis 2: students' environment is determinant factor of entrepreneurial intention.

Hypothesis 3: The perceived students' capability (personal factors) positively influences their entrepreneurial intention.

3. Methodology

Data Collection

The study on entrepreneurial intentions among Marien NGOUABI university students employs the survey conducted at Marien NGOUABI University (the only one public university) in Congo - Brazzaville, Central Africa. The data was gathered at University-enterprise partnerships department. The survey was structured and

planned at a time when student's graduates were gathered in rectorat in May 2017, for seminar about self-marketing conducted by the University-enterprise partnerships department.

The English language questionnaire was translated into French. Students were instructed on how to take the questionnaire.

Sample selection: Survey data were collected from university student's graduates where efforts were made not only to include students who have taken entrepreneurial courses and those who have not but also to ensure female students were represented. A total of 2800 students were selected, but, only 2548 students responded to the survey, they were graduate from different major area, aged between 20 and 35 years old. The questionnaire was pilot tested in center of research and prospective studies, and the Cronbach alpha tests were carried out to determine the reliability of the questions.

Dependent variables

For the purpose of this study, the dependent variable is entrepreneurial intention. The entrepreneurial intention. Is further segregated into Disagree, Neutral and Agree. Of the 2548 respondents 18.58 % did not want to be entrepreneurs, 41.72% were not sure about it, 39.7% had strong entrepreneurial intentions.

Independent variables

The choices of explanatory variables are based on the objective of study and variables that affect the student behavior on their future professional.

The following variables were considered as the explanatory/independent variables: age ,gender, field of study, whether parents own business, whether they received pocket money or scholarship while at university, whether they had a job while at university, parent's monthly income, tutor's education, Self-employed *parents*; School calendar, Desire for independence, year of graduation, Whether parents live together with him.

Identification

<i>Age</i>	<i>taking dummy variable, 1 if 20-35years and , 0 otherwise (35+ years= reference)</i>
<i>Gender</i>	<i>taking dummy variable, 1 if female and, 0 otherwise (Male= reference category)</i>
<i>Field of study</i>	<i>taking dummy variable, 1 if business management course and , 0 otherwise (other courses= reference category)</i>
<i>Whether parents own a business</i>	<i>taking dummy variables,1 if parents own a business and ,0 otherwise (parents don't own = reference category)</i>
<i>Pocket Money received in university</i>	<i>taking dummy variables,1 if received and 0 otherwise (not received = reference category)</i>
<i>Had a job while in university</i>	<i>taking dummy variables,1 if had a job and 0 otherwise (no job = reference category)</i>
<i>tutor's education</i>	<i>taking dummy variables,1 if educated and , 0 otherwise (Not educated = reference category)</i>
<i>Parent's monthly income</i>	<i>income1 = 1 if the parent's monthly income is 100000-199000 income 2 = 1 if the parent's monthly income is more 199000</i>
<i>Self-employed parents</i>	<i>taking Dummy variable with value 1 if the mother, father or both are self-employed, and value 0 if neither of the parents is self- employed (Not self-employed = reference category)</i>

School calendar	<i>taking dummy variables, 1 if calendar is respected and 0 Otherwise (not respected = reference category)</i>
Desire for independence	<i>taking dummy variables, 1 if had a desire for independence and 0 otherwise (had no desire for independence = reference category)</i>
<i>Whether parents live together with him</i>	<i>taking dummy variables, 1 if parents live together with him And, 0 otherwise (don't live together = reference category)</i>
<i>Year of graduation</i>	<i>taking dummy variable, 1 if 2017 and, 0 otherwise (2016 and before , reference category)</i>

Table 1: summary statistics of the variables under consideration total observations (n)= 2548

variables		Mean	Std dev	Min	max
Age		24680	3495	19	48
Gender	Male	0516	0500	0	1
	female	0484	0500	0	1
Field of study	Business courses	0.359	0.480	0	1
	Others courses	0641	0.480	0	1
Tutor's education	Educated	0,442	0,497	0	1
	Not educated	0,558	0,497	0	1
Self-employed parents	Self-employed	0,223	0,419	0	1
	Not self-employed	0,776	0,419	0	1
Parent's own business	yes	0144	0352	0	1
	no	0856	0352	0	1
received Pocket money	Yes	0818	0386	0	1
	no	0182	0386	0	1
Had a job while at university	yes	0092	0289	0	1
	no	0908	0289	0	1
Parent's monthly income	Below 100000	0568	0495	0	1
	100000-199000	0274	0446	0	1
	More than 200000	0159	0365	0	1
School calendar	Yes	0.654	0.476	0	1
	No	0.346	0.476	0	1
Desire for independence	Yes	0.723	0.448	0	1
	No	0.277	0.448	0	1
Whether parents live together with him	yes	0.774	0.418	0	1
	No	0.226	0.418	0	1
Year of graduation		2014,861	0,562	2006	2017

To analyze and measure the entrepreneurial intentions of students, I have adopted the Multinomial Logit Model (MNL) for empirical analysis as proposed by Hosmer, Lemeshow, and Sturdivant (2013) in their book titled «Applied Logistic Regression». In order to apply multinomial logistic regression analysis in this study, the five-point likert scores were recorded and made into a categorical dependent variables.

Starkweather and Moske (2011) also suggests the application of multinomial logistic regression when the dependent variables are categorical since the estimation does not assume normality, linearity, and homoscedasticity. They further imply that multinomial logistic regression assumes that the choices in the dependent variable is not related to each other.

Multinomial regression is taken to discuss the relationship between one nominal dependent variable and one or more independent variables. This technique offers a relaxed assumption of the linearity between the dependent

and independent variables. Having more than two categories on a single dependent variable in the model, this technique is appropriate (Fox, J. 2000.)

The mathematical functions are modelled as follows:

$$\begin{aligned} G1(x) &= \ln \frac{\Pr(Y=1/X)}{\Pr(Y=0/X)} = \beta_1 \cdot X_i \\ &= \beta_{10} + \beta_{11}X_1 + \beta_{12}X_2 + \dots + \beta_{1p}X_p \\ &= X' \beta_1 \end{aligned} \quad (1)$$

And

$$\begin{aligned} G2(x) &= \ln \frac{\Pr(Y=2/X)}{\Pr(Y=0/X)} = \beta_2 \cdot X_i \\ &= \beta_{20} + \beta_{21}X_1 + \beta_{22}X_2 + \dots + \beta_{2p}X_p \\ &= X' \beta_2 \end{aligned} \quad (2)$$

The conditional probabilities of each outcome category given the covariate vector are

$$\Pr(Y=0/X) = \frac{1}{1 + e^{g1(X)} + e^{g2(X)}}$$

$$\Pr(Y=1/X) = \frac{e^{g1(X)}}{1 + e^{g1(X)} + e^{g2(X)}}$$

$$\Pr(Y=2/X) = \frac{e^{g2(X)}}{1 + e^{g1(X)} + e^{g2(X)}}$$

The more general expression for the conditional probability in the three category model is

$$\Pr(Y=j/X) = \frac{e^{g^j(X)}}{1 + \sum_{k=0}^2 e^{g^k(X)}} \quad (3)$$

In order to ascertain the model fitting information, the following hypothesis has also been developed as a first stage analysis to confirm the empirical results:

H0: there is no difference between the model without independent variables

H1: there is a difference between the model without independent variables

The strength of the multinomial logistic regression relationship has been measured by considering the value of the pseudo R-square.

Table 3: Chi square values and pseudo R2 values

Multinomial logistic regression	No of observations = 2548
LR chi2 (28)=	164,89
Probability >chi2 =	0.0000
Log likelihood = -2607.82	pseudoR2 = 0.0306

While testing the null hypothesis that there is no difference between the model without independent variables and the model with the independent variables. The chi-squared values have been utilized to test the statistical significance. As evident from Table 3, the probability of the model chi-squared was 0.000, less than the

significance level of 0,01. Therefore, we reject the null hypothesis that there is no difference between the model without independent variables and the model with independent variables and accept the alternate hypothesis that there exists a relation between the independent variables and the dependent variables.

The pseudo R square value from table 3 shows that 3.06 per cent of the variability is explained by this set of variables used in the model.

Table 4: estimation results from the multinomial logit model

Total observations(n)= 2548

Variables	neutral		Agree	
	coefficient	Marginal effect	coefficient	Marginal effect
Age	0.262** (0.123)	0.036 (0.023)	0.192* (0.132)	0.002 (0.022)
female	-0.315*** (0.111)	0.005 (0.021)	-0.551*** (0.119)	-0.071*** (0.019)
Tutor's education	-0.059 (0.135)	-0.037 (0.025)	0.151 (0.143)	0.041* (0.023)
Field of study	0.293*** (0.117)	-0.014 (0.021)	0.576*** (0.123)	0.079*** (0.019)
Self-employed parents	0.032 (0.154)	0.038 (0.028)	-0.203 (0.164)	-0.048* (0.026)
Parent's own business	0.326* (0.175)	-0.026 (0.030)	0.711*** (0.178)	0.103*** (0.026)
Received pocket money	0.001* (0.137)	0.004 (0.026)	-0.024 (0.148)	-0.005 (0.024)
Had a job while at university	-0.323 (0.178)	0.006 (0.037)	0.570*** (0.201)	-0.074** (0.036)
Parent's monthly income (100000-199999)	0.022 (0.138)	0.006 (0.037)	-0.570 (0.201)	0.012 (0.024)
Parent's monthly income (more than 200000)	0.053 (0.180)	-0.005 (0.026)	0.073* (0.148)	0.058* (0.030)
School calendar	0.182* (0.114)	-0.030 (0.022)	0.503*** (0.125)	0.080***
Desire for independence	0.196* (0.131)	-0.011 (0.026)	0.394*** (0.145)	0.055** (0.024)
Whether parents live together with him	0.229* (0.137)	0.022 (0.027)	0.526*** (0.154)	0.078*** (0.026)
Year of graduation	0.031 (0.182)	0.003 (0.034)	0.030 (0.195)	0.002 (0.032)
Constant	0.212 (0.237)		0.746 (0.263)	
R squared	0.031		0.031	
Disagree	Base outcome			

Note: ***, ** and * represent significant at 1%, 5% and 10% respectively.

Source: Survey data 2017

Table 4 highlights the estimate of the analysis adopted for the study as dependent variable was recoded into categorical variable. Two different estimates were generated in comparison to the base outcome. For this study, disagree was assigned as a base outcome or reference variable and estimates for the variable neutral and agree were generated in order to compare with the base outcome. However, as the variable neutral does not provide any significance, in comparison to the base outcome, only the estimates generated from the variable agree are presented in comparison with the base outcome.

Results from logistic regression analysis showed that gender, tutor education, Field of study, parents own a business, having a job while at university, Parent's monthly income, desire for independence, living with parents together, school calendar) were the key factors that influence students' entrepreneurial intention.

Gender and entrepreneurial intention

The estimation results from the gender perspective on entrepreneurial intention show that females are less likely to venture into entrepreneurship, the estimates show that in comparison to male, a female is 7,1 percent less likely to become an entrepreneur which is significant at a 1 percent level of significance.

The reasons for lower female interest in entrepreneurship may relate to a number of factors, such as personal background and experience and reduced perceptions of skill and self-efficacy. Gender may relate to such factors as "need for achievement" (McClelland, 1961), confidence or over-confidence (Busenitz and Barney, 1997) and propensity to take risk (Van Praag and Cramer, 2001, Franke and Luthje, 2004). Evidence from psychology implies that females have higher risk aversion tendencies than males (Arch, 1993; Byrnes et al., 1999).

Effect of tutor education on entrepreneurial intention

Likewise, tutor (father, mother, or guardian depending on who was the household head) education level was another factor with a very strong contribution to predicting graduates' entrepreneurial intention. The results were statistically highly significant at a 10 percent level of significance. In other words, a graduate whose tutor is educated is 4.1 percent more likely to become entrepreneur.

These findings confirm the findings by Van Praag (2005) who observed that parental background characteristics such as education or job level of the father and sometimes mother influence the probability of starting up a firm but not entrepreneurial performance. People are more likely to become entrepreneurs if their father was also an entrepreneur and /or if their father had a higher qualified job or a higher level of education (Van Praag, 2005).

Effect of Field of study and entrepreneurial intention

In terms of academic courses undertaken while at university, the estimates indicate that a graduate who has undertaken an entrepreneurial course is 7,9 percent more likely to take up entrepreneurship as a career option which is statistically significant at a 1 percent level of significance.

Entrepreneurship intention is very much associated with entrepreneurial knowledge which begins from within the family, and this knowledge can stimulate the entrepreneurial intentions.

Similar findings were obtained by Siyanbola *et al.* (2009) who studied the determinants of entrepreneurial propensity of Nigerian undergraduates and found that entrepreneurial education, among other things influenced entrepreneurial propensity of Nigerian undergraduates. The authors further argue that entrepreneurship training and communication initiatives are key sources of positive entrepreneurial influence.

Effect of parents own a business on entrepreneurial intention.

A graduate whose parent owns a business is 10,3 percent more likely to become an entrepreneur and is statistically significant at a 1per cent level of significance.

Graduates recalled the influence of business enterprise on their lives as they were growing up. They understood the value their families placed on their business and were observers and participants over the years; involved in sharing conversations and discussions; learning values, commitment, personal responsibility, accountability, hard work and understanding along with other aspects of family life.

This finding is not surprising, as it is in line with the results provided by (Bosma et al., 2012; Carr & Sequeira, 2007; Laspita et al., 2012; Oren Caduri, & Tziner, 2013), among others.

Effect of having a job while at university on entrepreneurial intention. With regard to the entrepreneurial intentions among those graduates who were already employed while pursuing their studies at the university, the estimates show that those graduates who had a job were less likely to become entrepreneurs in comparison to their counterparts which did not have a job while studying.

Graduates who had a job while studying at the university were 7,4 percent less likely to become entrepreneurs which are statistically significant at a 5 percent level of significance.

Effect of Parents monthly income on entrepreneurial intention

While measuring Parent's monthly income and the corresponding impact on their children perception towards entrepreneurship, the estimates show that as the parent's monthly income increases over 200000 a month, the probability of entrepreneurial intention exist. The estimates claim that a graduate whose parent's monthly income is more than 200000 is 5, 8 percent more likely to have entrepreneurial intention when compare to those graduates whose parent's earnings are less than 200000 a month which is statistically significant at a 10 percent level of significance.

Effect of desire of independence on entrepreneurial intention

The relationship between the desire for independence and the entrepreneurial intention was statistically significant at a 5 percent level of significance. This finding converges with the study of Douglas & Fitzsimmons, 2005 who said that, generally, individuals who possess a high need for independence would seek for careers with more freedom (Lee & Wong, 2004). Wilson et al. (2004) resolved that teenagers in Hispanic and African American who like entrepreneurship are motivated by a motivational factor such as the desire for independence. This implies that students with a strong desire for independence are likely to possess a higher level of entrepreneurial intentions.

Effect of graduate for living with parents together on entrepreneurial intention

Joint family pattern of living is a force to be reckoned with in providing a base in entrepreneurship the results from joint family encouraging to consider entrepreneurship as a career choice shows that the likelihood of a graduate to endeavor into entrepreneurship increases by 7, 8 percent if a graduate lives together with parents. The estimates have been found statistically significant at a 1 percent level of significance.

Effect of School calendar on entrepreneurial intention

Another important determinant of graduates' drive and determination is the school calendar. School calendar generally refers to the turbulence occurred this last five year due to the strike in repetition. University staff launched an indefinite strike since on unpaid wages. The findings showed that the school calendar significantly predicts graduates' drive and determination.

These strikes are used to pressure governments to pay wages and to change policies of universities infrastructural development and welfare of both Academic and non-Academic staff union of universities. Strikes are often part of a broader social movement taking the form of a campaign of civil resistance undertaken by unions during collective bargaining. Strike consists of workers refusing to attend work and picketing outside the workplace to prevent or dissuade people from working in their place or conducting business with their employer.

Irregularity of academic program, examination malpractices and cultism amongst students, certificate racketeering, and erosion of dignity motivate and hinder the entrepreneurial intentions among university

students in Congo Brazzaville. The estimates has been found statistically significant at a 1 per cent level of significance.

Estimates from variables such as age, year of graduation, whether they received pocket money or not and household income level between 100000-199000 was not found statistically significant in this analysis.

Conclusion

The motivation for this study was to explore the factors that influence entrepreneurial intentions among university students in Congo Brazzaville. The finding of this study are presented through descriptive analysis as well as through econometric model. Logistic regression model was adopted for the econometric analysis. Findings from the empirical analysis show that there exist some aspect of gender differences while considering entrepreneurship as a career choice. The study claims that female graduates are less likely to become entrepreneurs as compared to male graduates. It confirm the first hypothesis. Concerning academic courses undertaken while at university, graduates who have pursued business management courses are more likely to opt entrepreneurship as a career as those graduates who have pursued other courses.

The study also finds that there is a great significance between graduates' entrepreneurial intention and their parents' owning a business. The probability of a graduate's entrepreneurial intention increases if the parent owns a business. This can be attributed to the fact that parents who are themselves involved in entrepreneurship would most likely encourage their children to venture into entrepreneurship. As entrepreneurial intention is highly associated with entrepreneurial knowledge and parents who are involved in entrepreneurship may well be the first source of that entrepreneurial knowledge. This finding confirms the presence of normative belief, which refers to the individual's belief established by perceived social pressure and subjective norms.

The study also reports that those graduates who had a job while pursuing their studies are less likely to become entrepreneurs when compared with those who did not have a job while pursuing their studies. This finding is realistic as those graduates who had a job while pursuing their studies were in-service candidates, mostly from the civil service who were upgrading their educational qualification.

Those in service graduates already had a job, were on study leave and would, therefore, resume work after completion of their studies and hence are less likely to be entrepreneurs. Parent's monthly income level were also found to be positively associated with entrepreneurial intentions. The higher a parent's monthly income, the more likely that a graduate would venture into entrepreneurship. Individuals who possess high need for independence will seek for careers with more freedom. This implies that students with a strong desire for independence are likely to possess a higher level in entrepreneurial intentions as it was mentioned in hypothesis 3. The results from parent's education level show that if a father is educated, graduates are more likely to have entrepreneurial intentions in comparison to those graduates whose fathers are not educated.

Irregularity of academic program, examination malpractices and cultism amongst students, certificate racketeering, and erosion of dignity motivate and hinder the entrepreneurial intentions among graduates students this situation confirm hypothesis 2. Congolese graduate students have high attitudes towards self-employment actually this indicates that the respondent is more in favor of self-employment than organizational employment.

Areas for Further Research

Further studies should expand the study to private universities in Congo Brazzaville.

References

- Adze(2018) et al, what push student to have entrepreneurship intentions, *Journal of Asia Industrial Training*, 21(4), 154-160.
- Ajzen, I., (1991), *The theory of planned behavior*. *Organizational Behavior and Human Decision Processes*, Vol. 50, No. 2, pp. 179-211.
- Akhteruiddin, M. (1999), A Case Study of Sokme Successful and Unsuccessful Entrepreneurs in Bangladesh. *Journal of Business Administration*, 25 (1/2), University of Dhaka.(Arch, 1993).
- Audet, J. (2004), L'impact de deux projets de session sur les perceptions et intentions Entrepreneuriales d'étudiants en administration, *Journal of Small Business and Entrepreneurship*, Vol. 17, No. 3, pp.223–240.
- Autio, e, keeley, r. h., klofsten, m. & ulfstedt, T. (1997), Entrepreneurial intent among students. Testing an intent in Asia, Scandinavia and USA. In *Frontiers of Entrepreneurship Research*, Proceedings of the 17th Annual Babson College Entrepreneurship Research Conference.
- Bilic, I., Prka, A., & Vidovic, G. (2011), How does education influence entrepreneurship orientation? Case study of Croatia, *Management*, 16(1), 115–128.
- Bird, B. (1988), Implementing entrepreneurial ideas: the case for intention, *Academy of Management Review*, Vol. 13, No. 3, pp. 442-453.
- Bird, B. (1998), Implementing Entrepreneurial Ideas: The Case for Intention, *Academy of Management Review*, 13, 442-453.
- Bosma, N.S., Wennekers, S. and Amorós, J.E. (2012), *Global Entrepreneurship Monitor 2011 Extended Global Report: Entrepreneurs and entrepreneurial employees across the globe*, Babson Park, MA, US: Babson College, Santiago, Chile: Universidad del Desarrollo, Kuala Lumpur, Malaysia: Universiti Tun Abdul Razak and London, UK: Global Entrepreneurship Research Association.
- Boyd, N.G. and G. S. Vozikis (1994), The influence of self-efficacy on the development of entrepreneurial intentions and actions, *Entrepreneurship Theory & Practice* 1: 63-77.
- Busenitz LW. and Barney JB. (1997), Differences between entrepreneurs and managers in large organizations: Biases and heuristics in strategic decision-making, *Journal of Business Venturing* 12(1): 9–30.
- Byrnes, J. P., D. C. Miller, & W. D. Schafer. (1999), Gender Differences in Risk Taking: A MetaAnalysis, *Psychological Bulletin*, 125(3), 367–383.
- Cantillon, Richard. (1755), *Essai Sur La Nature Du Commerce en General*, London, Gyles.
- Carr, J. & Sequeira, J. (2007), Prior family business exposure as intergenerational influence and entrepreneurial intent: A Theory of Planned Behaviour Approach, *Journal of Business Research*, 60 (10), pp. 1090-1098.
- Crant, J.M. (1996), The proactive personality scale as a predictor of entrepreneurial intentions, *Journal of Small Business Management*, 34, 3, 42-49.
- Davidsson, P. (1995), Determinants of entrepreneurial intentions. Paper prepared for the RENT IX Workshops, 23-24.
- Dell, M. S. (2008), An investigation of undergraduate student self-employment intention and the impact of entrepreneurship education and previous entrepreneurial experience. Doctor of Philosophy Thesis, School of Business University The Australia.
- DELMAR, F., DAVIDSSON, P. Where do they come from? Prevalence and characteristics of nascent entrepreneurs. *Entrepreneurship and Regional Development*, v. 12, n.1, p. 1-23, 2000.
- Douglas, E. J., & Shepherd, D. A. (2002). Self-employment as a career choice: Attitudes, entrepreneurial intentions, and Knowledge context and entrepreneurial intentions among students utility maximization. *Entrepreneurship Theory & Practice*, 26(3), 81–90.
- Douglas, E.J. and Fitzsimmons, J.R. (2005) Entrepreneurial Intentions towards Individualvs. Corporate Entrepreneurship. SEAANZ 2005 Conference, Armidale, NSW, September 2005, 25-30.
- Drennan, J., Kennedy, J., & Renfrow, P. (2005), Impact of childhood experiences on the development of entrepreneurial intentions, *The International Journal of Entrepreneurship and Innovation*, Vol. 6, No. 4, pp. 231-238.
- Fayolle, F. Liñán, (2013), The Future of Research on Entrepreneurial Intentions , *Journal of Business Research*, 67 (5) pp. 663-666.
- Franke, N, & Luthje, C. (2004), Entrepreneurial intentions of business students: a benchmark Study. *Int J Innov Technol Management*, 1(3), 269–288.
- Gree, A, & Thurnik, C. (2003), Firm selection and industry evolution: the post country performance of new firm, *Econ*, 4(4), 243–264.
- Herrington, M, Kew, J, & Kew, P. (2009). *Global Entrepreneurship Monitor*, South African report.
- Iro-Idoro and al, (2017), Entrepreneurship Education And Self-Efficacy: Strategies For Reducing Unemployment Problem Among Nigerian Graduates , *IOSR Journal Of Humanities And Social Science (IOSR-JHSS)*, Volume 22, Issue 12, Ver. 5 (December. 2017) PP 34-39 .

- Ismail, M, Khalid, SA, Othman, M, Jusoff, HK, Rahman, NA, Kassim, KM, & Zain, RS. (2009), Entrepreneurial intention among Malaysian undergraduates. *Int J Bus Management*, 4(10), 54–60.
- Karimi R, et al., (2014). Mercury-nutrient signatures in seafood and in the blood of avid seafood consumers, *Sci. Total. Environ* 496,PP 636–643
- (Fox, J. 2000.)
- (Kassean et al., 2015). Entrepreneurship education: A need for reflection, real-world experience action, *Int J Entrepreneur Behav Res*, 21(5), 690–708. <https://doi.org/10.1108/IJEER-07-2014-0123>.
- Kew, P., Turton, N., Herrington, M. and Christensen, J.D. (2013), The state of entrepreneurship in the Free State: A baseline study of entrepreneurial intentions and activity amongst young men and women. *South Africa SME Observatory*.
- Kolvereid, L. and Isaksen, E. (2006) 'New business start-up and subsequent entry into self employment', *Journal of Business Venturing*, Vol. 21, No. 6, pp.866–885.
- Krueger, N.F. & Brazeal, D.V. (1994), Entrepreneurial potential and potential entrepreneurs, *Entrepreneurship Theory and Practice*, Vol. 18, pp. 91-91.
- Krueger, N.F. What Lies Beneath? The Experiential Essence of Entrepreneurial Thinking, *Entrep. Theory Pract.*2007, 31, 123–138.
- Krueger, N. F. Jr., Reilly, M. D., Carsrud, A. L. (2000), Competing models of entrepreneurial intentions, *Journal of Business Venturing*, 15, 411- 432.
- Krueger, N. (1993), The Impact of Prior Entrepreneurial Exposure on Perceptions of New Venture Feasibility and Desirability. *Entrepreneurship: Theory and Practice*, 18 (1),pp. 5-21.
- Laspita, S., Breugst, N., Heblich, S. and Patzelt, H. (2012), Intergenerational transmission of entrepreneurial intentions', *Journal of Business Venturing*, Vol. 27, No. 4, pp.414–435.
- LEE, S. H.; WONG, P. K.(2004) An exploratory study of technopreneurial intentions: A career anchor perspective, *Journal of Business Venturing*. v. 19, n. 1, p. 7-28.
- Liñán, F. (2004). Intention based model of entrepreneurial education. *Piccola Impresa/Small Business* 3(1):11-35. Ma and Tan (2006).
- Maas, G, & Herrington, M. (2006). *Global Entrepreneurship, Monitor South Africa report*.
- Max Weber (1930) *the protestant ethic and the spirit of capitalism* translated by Talcott parsons, London Allen &Unwin.
- McClelland, D. (1961) *The Achieving Society*, Collier- Macmillan Free Press New York.
- Nabi, et. al., (2006) Graduate career-making and business start up ; a littérature review , *Education + Training* , Vol. 18 No 5, PP. 373-85.
- NUENO (1995), *Emprendiendo – El arte de crear empresas y sus artistas*. Bilbao: Ediciones Deusto S. A.
- Oren, L., Caduri, A. & Tziner, A. (2013). Intergenerational occupational transmission: Do offspring walk in the footsteps of mom Or dad, or both? *Journal of Vocational Behavior*, 83(3), 1-551.
- Parker, (2004), *The economics of self-employment and entrepreneurship* , Cambridge , Cambridge university press.
- Peterman, N.E. and Kennedy, J. (2003), Enterprise education: Influencing students 'perceptions of entrepreneurship. *Entrepreneurship Theory and Practice*, 28, 2, 129-144.
- Pihie, L. & Akmaliah, Z. (2009), Entrepreneurship as a career choice: An analysis of entrepreneurial self-efficacy and intention of university students, *European Journal of Social Sciences*, Vol. 9, No. 2,pp. 338-349.
- (Rezia, 2000).
- Ronstadt, R. (1990), the educated entrepreneurs: a new era of entrepreneurial education is beginning. In Kent,C.A. (Ed.), *Entrepreneurship education: current developments, future directions*. Quorum Books, Westport.
- Shapero, A. and Sokol, L. (1982), *The Social Dimensions of Entrepreneurship*. In: *Encyclopedia of Entrepreneurship*, Prentice-Hall, Englewood Cliffs, 72-90.
- Shaver and Scott, L. R. (1991), Person, process, choice: the psychology of new venture creation, *Journal of Social Sciences*, Vol. 9, No. 2,pp. 38-49.
- Schumpeter, J.A. (1934), *The Theory of Economic Development*. Harvard University,Cambridge.
- Siyanbola et al. (2009), *Determinants of entrepreneurial propensity of Nigerian undergraduates: an empirical assessment*, Published in: *International Journal of Business Environment* , Vol. 5, No. 1 (2012): pp. 1-29.
- Souitaris, V., Zerbinati, S., & Al-Laham, A. (2007), Do entrepreneurship programmes raise entrepreneurial intention of science and engineering students? The effect of learning, inspiration and resources. *Journal of Business Venturing*, 22(4), 566–591.
- Starkweather and Moske (2011) , multinomial logistic regression , consulted page at September 10 th, http://www.unt.edu/rss/class/jon/benchmarks/MLR_JDS_aug_2011.pdf 29, 2825 2830.
- Tkachev, A., & Kolvereid, L. (1999). Self-employment intentions among Russian students, *Entrepreneurship and Regional Development*, 11(3), 269-280.

- Turker, D. and Sonmez Selcuk, S. (2009), Which Factors Affect Entrepreneurial Intention of University Students? *Journal of European Industrial Training*, 33, 142-159.
- Urbano, David & Aparicio, Sebastian, (2016), Entrepreneurship capital types and economic growth: International evidence, *Technological Forecasting and Social Change*, Elsevier, vol. 102(C), pages 34-44.
- Van der Sluis, J., Van Praag, M., & Vijverberg, W. (2005), Entrepreneurship selection and performance: A meta-analysis of the impact of education in developing economies, *The World Bank Economic Review*, 19(2), 225-261.
- Praag, M., and Jan Cramer(2001) The Roots of Entrepreneurship and Labour Demand: Individual Ability and Low Risk Aversion mars.cramer@upcmail.nl *Economica*, vol. 68, issue 269, 45-62.
- Wärneryd, K-E. (1988), The Psychology of Innovative Entrepreneurship. In: W.F. van Raaij, G.M. van Veldhoven & K-E. Wärneryd (eds.) *Handbook of Economic Psychology*, Dordrecht: Kluwer.
- Wilson, F., D. Marlino, and J. Kickul. (2004), Our entrepreneurial future: Examining the diverse attitudes and motivations of teens across gender and ethnic identity, *Journal of Developmental Entrepreneurship*, 9 (3): 177-197.
- Wu, S., & Wu, L. (2008), The impact of higher education on entrepreneurial intentions of university students in China. *Journal of Small Business and Enterprise Development*, Vol.15, No. 4, pp. 752-774.
- Zain, Z. M., Akram, A. M., & Ghani, E. K. (2010), Entrepreneurship Intentions Among Malaysian Business Students. *Canadian Social Science*, 6(3), 34-44.

Equity Market Performance and Economic Growth in Nigeria: An Application of Vector Error Correction Model

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Abstract

Equity market has been seen as a vehicle for promoting economic growth by mobilizing long term funds for productive investment, but theoretical postulations differ over this role. The understanding of this role is of strong policy relevance in Nigeria. This paper therefore attempts to establish the existence of long-run relationship between economic growth and equity market performance with the view to improving policy formulation that will promote growth through capital market in Nigeria. Using data from Q1:1998 to Q4:2018, the Johansen and Juselius (1990) multivariate cointegration results establish long-run relationship between economic growth and each of equity market capitalization and turnover ratio. The test result could not find cointegration between economic growth and number of securities traded. The VEC Granger Causality/Block Exogeneity Wald test results establish a uni-directional relationship running from market capitalization and turnover ratio to economic growth, while bi-directional relationship exist between economic growth and number of securities traded. The parsimonious VECM for economic growth and equity market capitalization (model 1) shows that market capitalization and turnover impact on economic growth positively. The paper recommends that market capitalization as measure of equity market performance should be considered by policy makers as a veritable policy instrument for enhancing economic growth in Nigeria.

Keywords: Equity Market, Economic Growth, Cointegration, VECM

JEL Classification: C30, E010, G120

1. Introduction

The Capital market is seen as a vehicle for promoting economic growth by mobilizing long term funds from the surplus units and making it available for businesses in the productive sector of the economy. This market is generally made up of *equity market* (market for buying and selling of shares) and bond market (market for the issuance of debt securities). In most countries, equity market is the most significant segment of capital market; and also more liquid and volatile than the bond segment.

Theoretical postulations vary over equity market linkages with economic growth. Kyle (1984); Levine (1991); Obstfeld (1994); Holmstrom and Tirole (1993); Greenwood and Smith (1996); and Bencivenga, Smith, and Starr (1996); prove that equity market is significant for economic growth. However, Stiglitz (1985, 1993); Mayer (1988); Morck, Shleifer, and Vishny (1990a,b) and Devereux and Smith (1994) postulate that equity market is of little or no relevance to growth. In the mist of these conflicting theoretical prepositions, it becomes critical to investigate empirically the stance of this argument in the Nigerian context even though theories seem to favour positive relationship between capital market performance and economic growth in general terms.

In Nigeria, development in the market has been mixed over time. All Share Index (ASI) and Market Capitalization (MC) grew from 163.8 index points and N7.1 billion in 1986 to 31,450.8 index points and N6,957.5 billion in December 2008, respectively. The ASI decreased to 28,078.8 index points in December 2012 (CBN, 2012), reflecting the after effect of 2008/2009 global financial crisis. On the other hand, economic growth, measured in terms of gross domestic product (GDP) growth between 1986 and 2012 has been mixed.

To the knowledge of this study, none of the few available literature in Nigeria on the subject since the 2007/2009 global financial crisis (See Nyong, 1997 and Adenuga, 2010) accommodated the effect of the crisis while modeling long term relationship between economic growth and capital market performance. This is a huge gap considering the perceived effect of the crisis on the economy through the financial sector.

Thus, this study seeks to achieve the following objectives: (1) To examine the directional causality between equity market performance indicators and economic growth in Nigeria; (2) To establish the existence of short-run and long-run relationship between equity market and economic growth in Nigeria.

Following this introduction is section two, which examines the existing theoretical and empirical literature, including equity market performance indicators. Section three describes the data used, source, econometric methodology and the model. Section four covers the empirical investigations and analysis of results, while section five concludes the paper with policy implication of findings.

2. Theoretical and Empirical Literature

2.1. Theoretical Literature

The traditional belief that stock market contain useful information about the future path of economic growth was given a boost by Irving Fisher's (1907) formalization of the asset market and real economic growth, which further elucidated the theoretical connection between equity market performance and economic growth. Deducing from Fisher's work, the price of stock is given as the discounted value of expected cash flows while the magnitude of these cash flows is a function of the strength of the economy. Since Fisher's theoretical formalization, other renowned economists have postulated that equity market has link with economic growth through the role it plays in the mobilization and allocation of resources to the productive sectors of the economy. Ajit (1993) argued that, in principle, a well-functioning stock market may help the development process of an economy through growth of savings, efficient allocation of investment resources and better utilization of the existing resources. Greenwood and Smith (1996) argue that large stock market tends to reduce the associated cost of fund mobilization and thereby enhancing investment in the productive sectors with the state of the art technologies.

Notwithstanding the growing theoretical supports for the positive relationship between equity market and economic growth, opposing views have been put forward by fewer economists like Stiglitz (1985, 1993), Shleifer and Summers (1988), Mayer (1988), Morck, Shleifer, and Vishny (1990a,b), Bencivenga and Smith (1991), Obstfeld (1994) and Devereux and Smith (1994). In summary, the projected arguments are: firstly, greater liquidity may reduce savings rate to the extent of slowing down economic growth; secondly, diversifying risk through internationally integrated stock market could lower the propensity to save, reduce economic growth thereby reducing living standard; thirdly, quick information about stock market that is revealed through price will reduce motivations to spend private resources to seek relevant information. Moreover, since managers have

more relevant information about firms than outsiders, then they could misprice share/equity in the market and issue new equity. Such behaviour is inimical to economic growth as investors will be discouraged with the high prices of new issues; fourthly, there is the belief that efficient stock market enhances diffusion of ownership which impedes effective corporate governance.

2.2. Empirical Literature

The resolve of available empirical studies on stock market-growth nexus is not significantly different from theoretical postulations as there has not been consensus of results among authors on the subject matter. Table 1a presents a summarized survey of literature on the subject, with focused on foreign countries.

Table 1a: Related Literature on the Economic Growth and Capital Market Performance

Author	Objective	Data Frequency/Coverage	Market Performance Indicator	Control Variables	Estimation Technique	Findings
Atje and Jovanovic (1993)	To establish if stock-market development affects the level and/or the growth rate of economic activity for 40 countries.	Annual data:1980 to 1988	GDP, GDP growth rate and Market Cap	None	Single Equation Model (SEM), Ordinary Least Square (OLS)	It finds a substantial positive effect on the level and the growth rate of economic activity.
Levine and Zervos (1996)	To empirically evaluates the relationship between stock market development and long-term growth for 41 countries.	Annual data:1973 to 1993	Single composite index	Political instability, investment in human capital, macroeconomic conditions	Two stage least square regressions	Strong connection exists between stock market development and economic growth in the long run.
Bekaert and Harvey (1997)	Explores the links between financial markets and economic growth for 18 countries	Annual data:1986 to 1992	Number of stock, market cap, total stock value, turnover ratio, market cap to gdp ratio and total stock value to gdp ratio.	None	Rank Correlation	Stock market development is positively associated with economic growth.
Mohtadi and Agarwal (2001)	To assess the relationship between stock market development and economic growth for 21 emerging markets.	Annual data:1977 to 1997	Market cap to gdp ratio, value of share to gdp ratio	Foreign direct investment, secondary school enrollment and domestic investment	Dynamic panel model	Strong positive relationship exists between stock market development indicators and economic growth.
Brasoveanu et al (2008)	Explains the relationship between market development (size and liquidity of the capital market) and economic growth in Romania.	Quarterly data: 2000 to 2006	Market size and liquidity.	None	Regression function and VAR models	Capital market development is positively correlated with economic growth with stronger feedback effect from economic growth to capital market.

Source: Authors' Compilations with focus on studies done outside Nigeria

The available literatures in Nigeria reviewed in this study such as Osunibi T. S. and Econs Dept, 2001; Donwa and Odia, 2010; and Owolabi and Ajayi 2013 employed relatively less robust analytical technique with a very short sample period. Only Nyong, 1996; Adenuga, (2010) and Usman and Abdulmumini (2013) employed a more advanced analytical methodology while establishing long-run relationship between stock market development and economic growth. However, none of them accounted for the effect of the 2008/2009 financial crisis in their models. Table 1b gives a succinct report of these studies.

Table 1b: Literature on the Economic Growth and Capital Market Performance in Nigeria

Author	Objective	Data Frequency/Coverage	Market Performance Indicator	Control Variables	Estimation Technique	Findings
Nyong (1997)	To determine Equity Market development relationship with long-run economic growth in Nigeria.	Annual data: 1970 to 1994	Aggregate index of equity market development	Broad money supply to gdp ratio	Single Equation Model (SEM), Ordinary Least Square (OLS)	Equity market development is negatively and significantly correlated with long-run growth. Bi-directional causality established.
Adenuga (2010)	Explores the hypothesis that stock market development promotes economic growth in Nigeria.	Quarterly data: 1990:1 to 2009:4	Market cap ratio, total value of shares traded ratio and turnover ratio	inflation, investment ratio, Savings Ratio, foreign direct investment to GDP ratio and private sector credit to GDP ratio	Vector Error Correction Model (VECM)	Validates the hypothesis that the stock market promotes economic growth in Nigeria.
Usman A. U. and Abdulmu mini B. A. (2013)	To investigate the impact of stock exchange market on economic growth in Nigeria.	Quarterly data: 1981 to 2010	Market Cap and Value traded	None	Johansen Cointegration test approach and Granger Causality test	Existence of positive long run relationship between Market indicators and economic growth. Bi-directional relationship exists.
Ovat (2012)	To ascertain whether or not there exists a long-run relationship among Stock market and economic growth variables in Nigeria.	Annual: 1980 to 2009	Market Cap and turnover ratio	None	Granger Causality and Johansen (1988) co-integration test	Two-way causation between market turnover and economic growth with stronger effect from market liquidity. Market size have little or no effect on growth.
Osunibi T. S. and Econs Dept (2001)	To examine whether stock market promotes economic growth in Nigeria.	Annual: 1980 to 2000	Market cap, new issues, and stock value traded ratio	Per capita income, political stability, gross capital formation, lagged growth rate GDP and SAP dummy	Single Equation Model (SEM), Ordinary Least Square (OLS)	Positive links between the stock market and economic growth was established.
Donwa and Odia (2010)	To analyze the impact of the Nigerian capital market on her socio-economic development.	Annual: 1981 to 2008	Market cap, new issues, volume of transaction and total listed equities and Government stock.	None	Single Equation Model (SEM), Ordinary Least Square (OLS)	Capital market indices have no significant impact on the GDP in Nigeria.
Owolabi and Ajayi (2013)	To examine whether or not stock market promotes economic growth in Nigeria	Annual: 1971 to 2010	Capital market index	Gross capital formation, foreign direct investment and debt overhang.	Single Equation Model (SEM), Ordinary Least Square (OLS)	Positive relationship exists between economic growth and stock market development variables.

Source: Author's compilation with focus on studies done in Nigeria

2.3. Nigerian Equity Market Performance Indicators

2.3.1. All Share Index (ASI)

A stock market index shows the price movement of quoted stocks and also summaries measure of the behavior of the stock market as it indicates changes in the aggregate market value or the value of some selected stocks. All-share index is an indicator designed to show the investors the relationship between stock prices of other economic and financial variables such as money supply, industrial production, consumer price index, corporate profits, lending and deposit rates.

2.3.2. Market Capitalization (MC)

This indicator measures the amount of wealth held in securities and it is an indication of the financial base of the market. Market Capitalization is a function of market price and volume of paid-up capital of listed companies. The sum total of market capitalization for all listed equities on an Exchange gives the aggregate equity market capitalization of a stock market.

2.3.3. Total New Issues

New Issues are securities raised in the primary market for the first time. They are equities and or bond offered to the public for the first time. It may be an initial public offer (IPO) or a security issued by an established firm which may have floated several such issues in the past.

2.3.4. Listed Securities

These are investment instruments (such as stock/shares, bonds) that are officially listed (quoted) on a stock exchange for public trading. Unlisted securities are traded in over the counter market or alternative investment market. The highest listings of 217 equities were recorded in Q4 2010 while the least was 186 in Q4 1986.

2.3.5. Value of Transactions

Value traded for every stock listed on the exchange is a product of the price of the stock and the volume of the stock traded for that day. The addition of the values of every stock that was traded on a particular day is the total amount investors commit to the market for a particular day, week, month and annual.

2.3.6. Volume of Transactions

The number of shares of a company traded on the floor of the Exchange during a particular session is the volume traded. The volume traded is dependent on the willingness of the holder of a stock to sell and the readiness of other investors to buy which is the offer and bid.

2.3.7. Number of deals

Number of deals determines number of transactions in a particular trading period. Movement in number of deals revealed bears in the stock market during the last quarters of 2004.

2.3.8. Turnover ratio

The stock turnover gives the aggregate value of stock traded with the total market capitalization for a particular period. This is another method of assessing how active or how liquid a stock market is. The portfolio investors and indeed other investors consider how fast or how easy investors can buy and sell securities when the need arises before taking a decision to invest in a stock market

3. Methodological Framework

3.1. Stock Market Variables, Economic Growth Indicators and Other Growth Determinants

The stock market variables considered in this study are all-share-index (ASI), market capitalization (MCAP), total value of shares traded (VAL), total volume of shares (VOL), number of deals (DEALS), number of securities (SEC) and turnover ratio (TOVER). Theoretical and empirical literatures on the relationship between these variables and economic growth have been extensively discussed.

Apart from the activities of the equity market, studies have found other determinants of economic growth in Nigeria to include money supply, government expenditure, trade openness, foreign direct investment, financial deepening, capital formation (see Ogunmuyiwa and Ekone, (2010); Machi, (2011) and Ayanwale (2007). To this effect and based on Nigeria peculiarities, this study considered government expenditure, external reserve, consumer price index, broad money supply and private sector credit by domestic money banks as control variables.

3.2. Data and Model

The data used in this study spanned from 1998:Q1 to 2018:Q4. The study is restricted to 80 data points because most of the variables used, especially the initial control variables were not available on quarterly basis before 1998. Data on stock market variables were obtained from the Nigeria Stock Exchange, while the economic growth indicator (GDP) and its other determinants (control variables) were obtained from the Central Bank of Nigeria. The data are converted into natural logarithm except the dummy and the output explained in terms of elasticity. Transforming the data into log form helps to avoid heteroscedasticity problem.

The growth model for our study which captures the effect of the global financial crisis in Nigeria is specified below.

$$\ln gdp_t = \beta_0 + \beta_1 \ln X^e + \beta_2 \ln gexp + \beta_3 \ln m2 + \beta_4 \ln psc + \beta_5 \ln res + \beta_6 \ln cpi + \beta_7 \text{dummy} + \varepsilon_t \quad \dots (1)$$

Where X^e is a list of equity market variables that enter the equation 1 at a time after satisfying the stationarity condition. The number of I(1) equity market variables determines number of equations coming from equation one. The a-priori expectations of the explanatory variables are stated as $\beta_i > 0, \beta_j < 0$ given that $i = 1,2,3,4,5$ and $j = 6,7$. Ln implies that the variables, apart from the dummy are in logarithm form.

3.3. Unit Root Test

In time series econometric analysis, it is essential to examine the stationarity properties of the variables under consideration with the view to ascertaining their order of integration, because non-stationary series could lead to spurious regression and a misleading estimation result. Augmented Dickey and Fuller (1979) (ADF) and Philip and Perron (1988) (PP) unit root tests technique have often been employed. The guiding principle in model estimation in this study is to achieve a parsimonious model, therefore, the stationarity of the identified variables forms the basis for their inclusion in the vector error correction (VEC) framework.

3.4. Vector Error Correction Granger Causality Test

Using VEC Granger Causality/Block Exogeneity Wald test, we establish the direction of causality among the stock market variables and economic growth indicator that have exhibited a common stochastic trend and also to test if the endogenous variable (in this case GDP) should rather be treated as exogenous. In a simple form, we represent the Vector Error Correction Granger Causality regression to test the *null hypothesis that stock market development does not granger cause economic growth* and vice versa using F-statistics:

$$\Delta \varphi_t = \sum_{i=1}^p \alpha_i \Delta \omega_{t-i} + \sum_{i=1}^p \theta_i \Delta X_{t-i} + \mu_{1t} \dots \dots \dots (5)$$

$$H_0: \sum_{i=1}^p \alpha = 0 \text{ against } H_1: \sum_{i=1}^p \alpha \neq 0$$

$$\Delta \omega_t = \sum_{i=1}^p \beta_i \Delta \varphi_{t-i} + \sum_{i=1}^p \vartheta_i \Delta X_{t-i} + \mu_{2t} \dots \dots \dots (6)$$

$$H_0: \sum_{i=1}^p \beta = 0 \text{ against } H_1: \sum_{i=1}^p \beta \neq 0$$

In equation 5, Δ is a first difference operator. φ_t represents economic growth indicator at time t, ω_{t-i} is the lagged equity market indicator. Also, in equation 6, ω_t is stock market development indicator at time t and φ_{t-i} represents the lagged economic growth indicator. X_{t-i} is a list of control variables. μ_{1t} and μ_{2t} are error terms and they are uncorrelated. α and β are parameter estimates. If H_0 is not accepted in both equations, Bi-causality exists. If H_0 is not accepted in equation 5, but accepted in equation 6 then unidirectional causality exist running from equity market to economic growth. If H_0 is accepted in equation 5, but not accepted in equation 6 then unidirectional causality also exists running from economic growth to equity market.

3.5. Cointegration Test

The Johansen and Juselius (1990) multivariate cointegration model is applied to determine the long-run relationship between economic growth and equity performance variables in Nigeria. Cointegration test is conducted under a vector autoregressive framework by considering a VAR of order p :

$$\varphi_t = A_1\varphi_{t-1} + \dots + A_p\varphi_{t-p} + B_1X_{t-1} + \varepsilon_t \dots\dots\dots(7)$$

where φ_t is a k -vector of non-stationary I(1) variables, X_t is a d -vector of deterministic variables, and ε_t is a vector of innovations and p is the lag length, then equation 7 can be modified as:

$$\Delta\varphi_t = \Pi\varphi_{t-1} + \sum_{i=1}^{p-1} \theta_i\Delta\varphi_{t-i} + BX_t + \varepsilon_t \dots\dots\dots (8)$$

Where $\Pi = \sum_{i=1}^p A_i - I$ and $\theta_i = -\sum_{j=i+1}^p A_j$

θ_i , Π and B are parameters to be estimated. According to the theorem if coefficient matrix Π has reduced rank $r < k$, then there exists $r \times k$ of α and β each with rank r such that $\Pi = \alpha\beta'$ and $\beta'V_t$ is I(0). r is the number of cointegration equation(s), each column of β' is the cointegrating vector and α is the error correction parameter which measures the speed of convergence to the long-run steady state of $\Delta\varphi_t$. Johansen test of cointegration is highly sensitive to the choice of lag length, thus VEC lag Exclusion Wald Test is conducted to justify significance of the chosen lag length. The decision on long run relationship is based on trace statistic and maximum eigenvalue statistic.

Ho: $r = 0$ Economic growth and equity market performance variables that are cointegrated are used to specify a vector error correction model (VECM) to determine the long-run equilibrium adjustment of equity market and economic growth.

3.6. VECM Representation

Having established that the variables of interest are cointegrated we therefore specify an ECM and estimate it under a VAR framework. This is with the view to obtaining information about the short-run relationship between economic growth and each stock market indicators; and long-run adjustment to changes in growth. A VECM representation is given below:

$$\Delta\varphi_t = \sum_{i=1}^p \alpha_i \Delta\varphi_{t-i} + \sum_{j=1}^q \beta_j \Delta X_{t-j} + \psi_t D_t + \Psi ecm_{t-1} + \varepsilon_t \dots\dots\dots (11)$$

Where α_i and β_j are coefficients that determine the short-run relationship among the considered variables, ecm_{t-1} is the one period lag of the residuals derived from the cointegrating regressions of GDP on each equity market variable. It measures the speed of convergence to the long-run steady state, ε_t is the white noise. X_t is a vector of exogenously deterministic macroeconomic variables. D_t is a dummy that captures the effect of the financial crisis is also incorporated in X_t .

3.7. Diagnostic Checks of the VECM

Diagnostic tests are conducted for the residuals of the parsimonious model. Firstly, the adequacy of the model is examined using the R-Squared and F-Statistic. Secondly, the stability of the parsimonious model is tested by applying the cumulative sum (CUSUM) and cumulative sum of square (CUSUMQ) of the recursive residuals of Brown *et al* (1975). Thirdly, the Breusch-Godfrey serial correlation LM test is applied to test the hypothesis of no serial correlation. Fourthly, the residual series is further tested for heteroskedasticity. Finally, using the Jarque-Bera, the null hypothesis that the residuals are normal distributed is tested.

4. Discussion of Results

GDP is estimated with each of the three equity market variables alongside the control variables to test if the endogenous variable (GDP) should be treated as exogenous (See full result is in appendix 1). This process yielded three estimated models: model 1, model 2 and model 3. The block exogeneity test results in Table 2 indicate that GDP can be treated as endogenous in model 1 and model 3 at 1% and 5% significant levels, respectively. More so, the equity market variables in the models have individual significant impact on GDP, implying that MCap Sec and Tover granger cause GDP. On the other hand, GDP cannot be treated as endogenous even at 10% significant level for model 2 because all the exogenous variables do not jointly influence it.

Table 2: VEC Granger Causality/Block Exogeneity Wald Tests

Dependent variable: D(LNGDP)				
	Excluded	Chi-sq	df	Prob.
Model 1	<i>D(LNMCAP)</i>	26.64345	6	0.0002***
	<i>D(LNGEXP)</i>	23.9937	6	0.0005***
	<i>D(LNM2)</i>	26.04966	6	0.0002***
	<i>All</i>	43.99995	18	0.0006***
Model 2	<i>D(LNSEC)</i>	17.10614	8	0.029**
	<i>D(LNGEXP)</i>	11.61381	8	0.1693
	<i>D(LNM2)</i>	8.527645	8	0.3837
	<i>All</i>	33.04114	24	0.1032
Model 3	<i>D(LNTOVER)</i>	13.36716	8	0.0998*
	<i>D(LNGEXP)</i>	18.85092	8	0.0157**
	<i>D(LNM2)</i>	9.754531	8	0.2827
	<i>All</i>	39.37915	24	0.0249**

The symbols ***, ** and * denote rejection of null hypothesis at 1%, 5% and 10% significant levels

Before applying Johansen test of cointegration with the lag used in the VEC Granger Causality and Block exogeneity wald text, we exercised caution by testing the null hypothesis of (non)significance of the lag used in the models using VEC lag exclusion Wald test. This is necessary because cointegration test is highly sensitive to the choice of lag length. The Wald statistic as well as its p-value for the lag length used in each model is reported in Table 3. The table reveals that the choice of lag 6 and lag 8 are significant at 5% probability level. The choice of lag length beyond lag 3 in Model 2 is not significant.

Table 3: VEC Lag Exclusion Wald Tests
(Joint Significance test of the chosen lag)

	Model 1	Model 2	Model 3
DLag 1	42.16527 [0.000373]	52.2616 [9.94e-06]	96.7129 [1.43e-13]
DLag 2	36.26816 [0.002655]	40.51738 [0.000654]	60.19528 [4.85e-07]
DLag 3	40.81446 [0.000591]	34.81495 [0.004213]***	41.94566 [0.000402]
DLag 4	36.34242 [0.002593]	22.03183 [0.142167]	48.2563 [4.33e-05]
DLag 5	33.19392 [0.006965]	23.44045 [0.162458]	45.18381 [0.000130]
DLag 6	29.25837 [0.022251]**	29.40552 [0.131341]	42.60111 [0.000321]

<i>DLag 7</i>	21.0331 [0.177242]	46.78279 [1.110008]	47.82155 [5.07e-05]
<i>DLag 8</i>	23.17767 [0.109067]	41.69323 [0.100038]	51.87728 [1.15e-05]***
<i>df</i>	16	16	16

Numbers in [] are p-values

Johansen's test of cointegration is performed using Lag 6, lag 3 and lag 8 for model 1, model 2 and model 3, respectively and the result is reported in table 4. The result shows that the trace statistics and maximum eigen-values provide evidence that the null hypothesis of no cointegrating vector in model 2 cannot be rejected at 5% significance level. This implies that long run relationship does not exist. However, with reference to the Johansen's cointegration test result for model 1 and model 3, the trace statistics and maximum eigen-values suggest that the null hypothesis cannot be rejected at 5% significance level, suggesting that the equity market variables have long run relationship with economic growth. However, we focus on model 1 for ease of analysis and parsimony.

Table 4: Johansen Cointegration Tests for Equity Market Models

	Ho: rank=r	Eigenvalue	Maximum Eigen values	Critical Value (5%)	Trace Statistics	Critical Value (5%)
<i>model 1</i>	r=0	0.58599	47.62109*	32.11832	98.9656*	63.87610
	r<=1	0.37001	24.95115	25.82321	51.34451*	42.91525
	r<=2	0.31994	20.82108*	19.38704	26.39336*	25.87211
	r<=3	0.09805	5.57229	12.51798	5.57229	12.51798
<i>model 2</i>	r=0	0.321398	21.71231	32.11832	57.5925	63.8761
	r<=1	0.256623	16.60692	25.82321	35.88019	42.91525
	r<=2	0.174686	10.7515	19.38704	19.27328	25.87211
	r<=3	0.141162	8.521778	12.51798	8.521778	12.51798
<i>model 3</i>	r=0	0.70931	64.24588*	27.58434	102.6784*	47.85613
	r<=1	0.367979	23.85927*	21.13162	38.43252*	29.79707
	r<=2	0.210539	12.29308	14.2646	14.57324	15.49471
	r<=3	0.042902	2.280162	3.841466	2.280162	3.841466

* denotes rejection of the hypothesis at the 0.05 level

The error correction model (ecm) for model 1 and model 3 is obtained from the normalized cointegrating vector which is given below:

$$\text{Model 1: } ecm1 = lngdp + 0.243436 * lnmcap + 0.368287 * lnm2 + 0.121348 * lngexp + 6.875242$$

Having established long run equation for the growth models, we therefore estimate the short run dynamics in a VECM environment with the view to capturing the speed of adjustment to equilibrium whenever the model receives shock. This is important because short run and long run are governed by different mechanism and such dynamics has significant policy implications. Thus, the parsimonious results of the over-parameterized specifications for model 1 are shown in table 5. These results are obtained by discarding variables that are statistically insignificant while ensuring that the information criteria are minimized.

Table 5: Parameter Estimates of the Parsimonious Vector Error Correction models

Variables	Coefficient	P-Value
<i>ecm1(-1)</i>	-0.461428	0.0000
$\Delta \ln gdp(-4)$	0.330748	0.0062
$\Delta \ln mcap(-1)$	0.131765	0.0593
$\Delta \ln mcap(-4)$	-0.254705	0.0003
$\Delta \ln mcap(-6)$	0.165355	0.0158
$\Delta \ln m2(-3)$	-0.643282	0.0001
$\Delta \ln m2(-4)$	-0.341333	0.0533
$\Delta \ln m2(-5)$	-0.448026	0.0071
$\Delta \ln m2(-6)$	-0.492443	0.0076
$\Delta \ln gexp(-2)$	0.077978	0.0909
$\Delta \ln gexp(-3)$	0.110051	0.0585
$\Delta \ln gexp(-4)$	0.243126	0.0002
$\Delta \ln gexp(-5)$	0.1393	0.0041
Constant	0.134884	0.0000
<i>dummy</i>	-0.038895	0.2068
<i>Adjusted R-squared</i>	0.475558	
<i>S.E. of regression</i>	0.065914	
<i>Log likelihood</i>	79.011430	
<i>F-statistic</i>	4.432842	
<i>Prob(F-statistic)</i>	0.000114	
<i>Durbin-Watson stat</i>	1.744436	
<i>Schwarz criterion</i>	-1.818298	

The result of model 1 shows that the long run relationship between GDP and equity market capitalization is statistically significant at 1%. This is evidenced from the very small p-value of one period lag of the ECM1. The negative value of the error correction term implies that the growth model converges in the long run whenever there is distortion in the equilibrium. The value of the error correction coefficient suggests that about 46% of disequilibrium is corrected in the long run. The first and sixth quarter lags conform to a-priori expectation of positive relationship between economic growth and market capitalization, as confirmed by Yartey (2008). Thus, the responsiveness of economic growth due to 1% change in the first and sixth lags of market capitalization is 0.13% and 0.17% increase at 10 and 5 per cent, respectively; implying that equity market in Nigeria is relatively inelastic.

Considering other short-run parameter estimates in the same model 1, economic growth in a particular quarter is determined by its fourth lag, the third to sixth lags of broad money supply and second to fifth lags of government expenditure. The responsiveness of economic growth to changes in lag three of broad money supply is elastic, but inelastic to lag four, lag five and lag six of broad money supply. The inverse relationship between economic growth and money supply is a deviation from the a-priori expectation, which could be attributed to structural rigidity in the economy. On the other hand, economic growth has positive relationship with the lagged values of government expenditure. The responsiveness of economic growth to government expenditure is inelastic. The results of model 1 further reveals that, though the 2008/2009 financial crisis has a weakening tendencies to economic growth, but the impact was not statistically significant. This is could be due to relatively low level of exposure of the economy to the international financial markets.

Diagnostic Checks of Model 1

The adjusted R-squared is relatively high and suggests reasonable level of model adequacy. Also, the F-Statistic of 4.43 and the corresponding p-value of 0.0001 shows that the overall model is significant at 1%. cumulative

sum (CUSUM) and cumulative sum of square (CUSUMQ) of the recursive residuals of Brown *et al* (1975). The stability test will show evidence of parameter instability when the residual of the estimated parsimonious model falls outside the two critical lines. The results of cumulative sum (CUSUM) and cumulative sum of squares (CUSUMQ) are shown in figures 1a and 1b below. The recursive residual plot of the model lies within the 5% critical lines, providing evidence that model 1 does not have parameter instability over the sample period. Furthermore, in Table 6, the null hypotheses of no serial correlation and no ARCH effect on the residuals of model 1 cannot be rejected at 5% significant level. Also, considering the Jarque-Bera statistic and the corresponding p-value, highly greater than 0.05, we have strong evidence that the null hypothesis cannot be rejected and we infer that the residuals of the model follow a normal distribution.

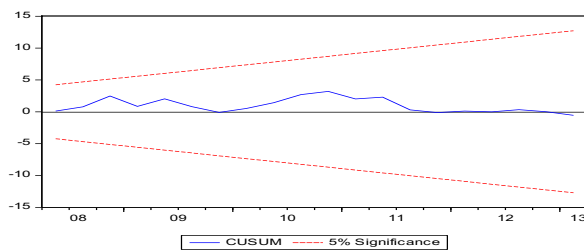


Fig. 1a: CUSUM of recursive residual in Model 1

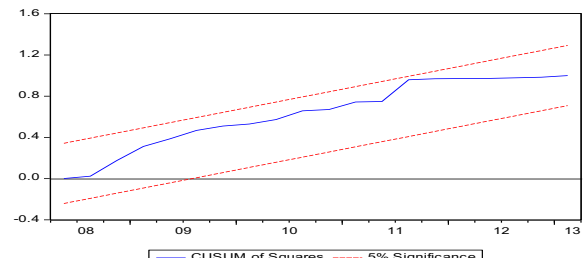


Fig. 1b: CUSUMQ of recursive residual in Model 1

Table 6: Residual Diagnostic of the Parsimonious Model 1

Test	Null Hypothesis	Jarque-Bera Stat	Obs-R-squared	P-Value*
Breusch-Godfrey Serial Correlation LM Test	No Serial Correlation on the Residuals		10.9066	0.0913
Heteroskedasticity Test: ARCH	No ARCH effects on the Residuals		9.64348	0.1405
Histogram-Normality Test	Residual Series is normally distributed	0.1710		0.9181

*Null Hypothesis is cannot be rejected when P-value is greater than 5%.

5. Policy Implications of Research Findings and Conclusion

This paper examines the directional causality between equity market performance indicators and economic growth in Nigeria using the VEC Granger Causality/Block Exogeneity Wald test. The result established a uni-directional relationship running from equity market capitalization and turnover ratio of equities to economic growth, while bi-directional relationship was established between the number of securities traded on the floor of the Nigeria Stock Exchange and economic growth. Inductively, policy initiatives of the capital market regulators geared toward improving the equity market performance indicators would have direct impact on economic growth.

The Johansen and Juselius (1990) multivariate cointegration results established the existence of long-run relationship between each of equity market capitalization and turnover ratio of equities alongside economic growth, broad money supply and government expenditure with a dummy capturing effect of financial crises. On the other hand, the cointegration results fail to establish long-run relationship between the number of securities traded on the floor of the Nigeria Stock Exchange and economic growth alongside the control variables.

The parsimonious VECM for economic growth and equity market capitalization reveals that equity market performance indicator coefficients conforms with the a-priori expectation of positive relationship, which is

supported by the theoretical postulation that large stock market, measured by market capitalization tends to reduce the associated cost of fund mobilization and thereby enhancing investment in the productive sectors for economic growth. Similar result was obtained by Mohtadi and Agarwal (2001). Thus, market capitalization should be considered by stock market regulators as a veritable policy instrument for enhancing economic growth in Nigeria. Broad money supply and government expenditure were found to have negative and positive impact on economic growth, respectively. This negative impact of money supply on economic growth reflects the presence of structural rigidity in the economy as effort made to lubricate the economy through monetary expansion will fuel inflation which impact on the economy negatively. With this result, by and large, great caution should be exercised by the monetary authority with its monetary policy stance as an expansionary stance could be inimical to economic growth. Rather, fiscal policy tailored towards real sector and infrastructure development should be pursued.

References

- Adenuga, O. Adeniyi (2010): Stock Market Development Indicators and Economic Growth in Nigeria (1990-2009): Empirical Investigations. Central Bank of Nigeria Economic and Financial Review Volume 48/1.
- Adeolu B. Ayanwale (2007): FDI and Economic Growth: Evidence from Nigeria. RePEc:aer:paper:rp_165.
- Aggarwal, R., Inclan, C. and Leal, R. (1999). "Volatility in Emerging Stock Markets". *Journal of Financial and Quantitative Analysis*, 34: 33-55.
- Ajit Singh (1993): Stock Market and Economic Development. Should Developing Countries Encourage Stock-Market? UNCTAD Review.
- Andreou, E. and Ghysels, E. (2002). "Detecting Multiple Breaks in Financial Market Volatility Dynamics". *Journal of Applied Econometrics*, 17(5): 579-600.
- Atje, R., and B. Jovanovic. 1993. "Stock Markets and Development." *European Economic Review*, Vol. 37: 632-640.
- Bekaert G. and Harvey C. R. (1997): Capital Markets: An Engine for Economic Growth. Paper presented at the National Bureau of Economic Research, Cambridge MA 02138.
- Bencivenga, Valerier; Smith, Bruce, and Starr, Ross M. (1996): Equity markets, Transaction Costs, and Capital Accumulation: An Illustration. *World Bank Economic Review*. 10(2), 241-265.
- Bencivenga, V. R. and Smith, B. D. (1991): "Financial Intermediation and Endogenous Growth, RCER Working Papers 24, University of Rochester-Center for Economic Research.
- Brasoveanu, L. O., Dragota, V., Catarama, D., & Andreea, S. (2008). Correlation Between Capital Market and Economic Growth in Romania. *Journal of Applied Quantitative Methods*, 3(1), 15-30.
- CBN (2012): Central Bank of Nigeria, Statistical Bulletin Vol. 23
- Devereux, M. B. and Smith, G. W. (1994): International Risk Sharing and Economic Growth. *International Economic Review*, 35(4), pp. 535-50.
- Dickey, D. A. and Fuller, W. A. (1979): Distribution of the Estimators for Autoregressive Time Series with a Unit Root. *Journal of American Statistical Association*. 74, 427-31
- Donwa Pat and Odia James (2010). An Empirical Analysis of the Impact of the Nigerian Capital Market on Her Socio-Economic Development. *Journal of Social Science*, 24 (2): 135-142.
- Greenwood, J., and B. Smith (1996). Financial Markets in Development and the Development of Financial Markets. *Journal of Economic Dynamics and Control*, Vol. 21: 145 -81.
- Grossman, S. and Stiglitz, J. (1980): On the Impossibility of Informationally Efficient Markets. *American Economic Review*, 1980, 70, pp. 393-408.
- Holmstrom, B. and Tirole, J. (1993). Market liquidity and performance monitoring*, *Journal of Political Economy*, 101 (4): 678-709.
- Irving Fisher (1907): *The rate of Interest*. New York: Macmillan, 1907.
- Johansen, S. (1988). *Statistical Analysis of Cointegration Vectors*. *Journal of Economic Dynamics and Control*, 12(2), 231-254.
- Johansen, S. and K. Juselius (1990). Maximum Likelihood Estimation and Inference on Cointegration with Applications to the Demand for Money. *Oxford Bull. Econ. Stat.*, No 52
- Kyle, A. (1984). Market Structure, Information, Future Markets and Price Formation. In G. Gary, A. Schmitz, & A. Sarris (Eds.), *International Agricultural Trade Advanced Reading in Price Formation. Market Structure and Price Instability* (pp. 105-121). Boulder: Westy.
- Levine, R. (1991). Stock Markets, Growth and Tax Policy. *Journal of Finance*, 46(4), 1445-1465.
- Levine, R. (1997). Financial Development and Economic Growth. Views and Agenda. *Journal of Economic Literature*, 35, 688-726.

- Levine Rose and Zervos Sara (1996): Stock Market Development and Long-Run Growth. Policy Research Working Paper, World Bank.
- Ogunmuyiwa M. S. and Ekone A. F (2010): Money Supply - Economic Growth Nexus in Nigeria. *Journal of Social Science*, 22(3): 199-204 (2010).
- Machi Ignatius. O (2011): A Test Of the Determinants of Economic Growth in Nigeria. *Journal of Research and Development*, Vol 2 No 1.
- Mayer, C. (1988). "New Issues in Corporate Finance," *European Economic Review*, 1988, 32, 1167-1188.
- Mohtadi, H. and Agarwal, S. (2001): Stock Market Development and Economic Growth: Evidence from Developing Countries. Department of Economics, University of Wisconsin-Milwaukee, Milwaukee, WI 53201.
- Morck, R.; Shleifer, A. and Vishny, R. (1990a): The Stock Market and Investment: Is the Market a Sideshow?, *Brookings Papers on Economic Activity*, 1990a, 2, pp. 157-215.
- Morck, R.; Shleifer, A. and Vishny, R. (1990b): Do Managerial Objectives Drive Bad Acquisitions. *Journal of Finance*, March 1990b, 45(1), pp. 31-48.
- Nyong, M. O. (1996). Capital Market Development and Long-run Economic Growth: Theory Evidence and Policy Proposal for Another Development Strategy. In J. E. U. Ndebbio, &
- Nyong, Michael O. (1997): "Capital Market Development and Long-run Economic Growth: Theory, Evidence and Analysis" *First Bank Review*, December 1997: 13-38.
- Obstfeld, M. (1994). Risk Taking, Global Diversification and Growth. *American Economic Review*, 84(5), 1310-1329.
- Ovat O. Okey (2012): Stock Market Development and Economic Growth in Nigeria: Market Size Versus Liquidity. *Canadian Social Science* Vol. 8, No. 5, 2012, pp. 65-70.
- Osunibi T. S. and Econs Dept (2001): Does Stock Market Promote Economic Growth in Nigeria.
- Owolabi, A. and Ajayi N. O. (2013): Econometrics Analysis of Impact of Capital Market on Economic Growth in Nigeria (1971-2010). *Asian Economic and Financial Review*, 2013, 3(1):99-110.
- Perron Pierre (1989): The Great Crash, the Oil Price Shock, and the Unit Root Hypothesis. *Econometrica*, Vol. 57, No. 6. (Nov., 1989), pp. 1361-1401.
- Phillips, P.C.B and Perron, P. (1988): Testing for a Unit Root in Time Series Regression. *Biometrika*, 75, 335-346.
- Saint-Paul, G. (1992). "Technological Choice, Financial Markets and Economic Development," *European Economic Review*, May 1992, 36(4), pp. 763-81.
- Sensier, M. and Van Dijk, D. (2004). Testing for Volatility Changes in US Macroeconomic Time Series. *Review of Economics and Statistics*, 86(3), 833-839.
- Shleifer, A and Summers, L. (1988): "Breach of Trust in Hostile Takeovers," in ed., A. Auerbach, *Corporate Takeovers: Causes and Consequences*, 1988, Chicago, University of Chicago Press, 33-56.
- Stiglitz, Joseph E. (1985): Credit Markets and the Control of Capital. *Journal of Money, Credit and Banking*, 17(2), pp. 133-152.
- Stiglitz, Joseph E. (1993): The Role of the State in Financial Markets. *Proceedings of the Annual Bank Conference on Development Economics*. pp. 19-52.
- Usman A. U. and Abdulmumini B. A. (2013): Nigeria Stock Exchange Market and Economic Growth: A Johansen Cointegration and Causality Approach, *International Journal of Advanced Research in Management and Social Sciences*, Vol. 2, No. 1
- Zivot, E. and Andrews, Donald W.K. (1992), Further Evidence on the Great Crash, the Oil-Price Shock, and the Unit-Root Hypothesis, *Journal of Business & Economic Statistics*, 10(3), 251-270.

Exploring Silent Negligence of Jute - The Golden Fiber of Bangladesh: A Historical Perspective

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Abstract

The present study investigated development and structure of jute sector before and after independence of Bangladesh. The paper also examined the overall situation, major changes, policies of jute history and exploring its potentiality. This research conducted content analysis of historical information, few key informants interviews as well as evaluation of scholar's opinions. Besides these, a wide array of sources were also reviewed such as government performance reports, documents, records, books and articles published by government, report of donor agencies and international organizations such as International Jute Study Group (IJSJ), World Bank (WB), as well as research findings of individual researchers. As jute is a pro-environmental, reusable and biodegradable products, its demand is increasing and getting popularity day by day to the environmental concern customers, policy makers, researcher and eco-entrepreneurs. To conclude, diversified jute products and jute based SMEs might be a way out to revive the golden fiber sector in Bangladesh.

Keywords: Jute, Golden fiber, British-India, Pakistan, Bangladesh

Introduction

Bangladesh is an agriculture based economy, and a large number of people formally and informally depend on this sector. Agro-based enterprises may have a brighter prospect in Bangladesh if the country can avail opportunities. Diversification of agro-based enterprises is required to overcome all these challenges. For overcoming unemployment challenges, the country needs employment-intensive growth strategies, which leads employees to productive entrepreneurs. It is also recommended that increased productivity in wage and self-employment, specially-designed employment opportunities for underprivileged and disadvantaged groups (those who live in extreme poverty) and also focus on employment security issues such as minimum wages, regulations of work and work environment, be the goals of such a strategy.

What is required is resources conversion into economic productivity with efficiency and effectiveness. According to Popenoe (1970), "[Economic development] requires leadership, primarily in the economic and political spheres. The 'ideal type' leader in the economic field is the 'entrepreneur.' He also claims that "the

progress of the developing nations will be enhanced if they are able to produce more and better entrepreneurs.” For this reasons, entrepreneurship development is one of the critical factor in economic development.

Robinson *et al.* (2004) and several other social researchers strongly believe that assisting entrepreneurship development within the local community is a sustainable strategy for alleviating poverty and other challenges. The World Bank (2015) has stated that, for women’s employment and sources of economic growth, the policy response has to emphasize on anti-poverty activities such as safety nets, social protection initiatives, small livelihood programs (income generating activities), micro credit and so on. All the above challenges lead policy makers and governments to make economic and industrial policy and poverty reduction strategy at the macro-level.

On the other hand, at micro-level, potential entrepreneurs need to be able to develop their businesses by using local resources. So we can conclude that diversification of income generating activities is the most- effective way to solve the above-listed challenges. It means entrepreneurship development, particularly local resource based enterprises, can be a method for upgrading socio-economic conditions and economic growth. To achieve the desired growth of GDP, the required manufacturing sector has to be developed, with vibrant sustainable economic growth and contribution to GDP. The most effective way to achieve this would be micro-enterprises development.

In addition, to cope with the global warming situation, renewable and local resources based on agro-enterprises are needed in Bangladesh. Locally available raw materials or environmentally-friendly raw material-based entrepreneurship development could be an effective adaptation strategy for all challenges such as environmental challenges, economic challenges and social challenges, which would ensure sustainable development. Development is not beneficial if it destroys the environment and natural resources; so green enterprises development issues and policies should get highest priority in this process.

According to the Bangladesh Government’s Industry Policy 1999 & 2010, jute goods or jute diversification is one of the thrust sectors in Bangladesh. Every industrial plan has focused on agro-based goods and agro-processing products but never has created jute based enterprises for diversified products for implementation of the plan goals. Jute is a plentiful natural resource of which Bangladesh has good quality. But historically this sector silently ignored. They are thus one answer to the challenges in the context of historical assessment is absent to find out the appropriate and sustainable way out for this sector that Bangladesh faces, as described above.

This study investigated development and structure of jute industry before and after Independence of Bangladesh. This research conducted historical content analysis, few key informants and expert opinions of jute industry. The development of Jute sector can be divided into three historical periods/ regimes from 1850 to until today such as British India Regime, East Pakistan Period, and Bangladesh from Independence to Today. This paper basically explored ups and downs of jute sector throughout these three periods and found a sustainable way out to rejuvenate the development of jute sector in Bangladesh.

Background of Jute Industry

Jute, “the golden fiber” is a historical cash crop in Bangladesh. It is also the oldest industry in Bangladesh traditionally being for packaging materials. Particularly, jute fabrics- gunnies, hessian, burlap were the premier packaging materials in the global trade. Historically, Jute sacks were used to pack grains, cotton, sugar, coffee, cement, guano and even bacon around the world. Jute has the contribution in the economic development of Bangladesh. In British India, Bengal economy was depended on jute. That’s why Jute was acclaimed as the “golden fiber” of Bangladesh which earned huge amount of foreign currency through the export of raw jute and jute goods (Levi-Strauss, 1952). Ranjan (1973) said [*“Golden fiber” as aptly called has bought gold to us in the past; it is bringing gold to us in the present and undoubtedly it will bring gold to us in the days to come as well*]. Farmers always fulfilled their dreams through jute. Small farmers in the Bengal delta cultivated jute on their own land or hired/rented land (Bengali: *Patton*) using a combination of households and hired labor, saved or

borrowed capital. Bangladesh was the main supplier of jute in British India. While the jute circulated around the globe, the production of fiber was concentrated in a particular area- the Bengal delta, an alluvial tract formed out of the silt deposits of the river system the Ganges, Brahmaputra, and Meghna. Two varieties have been produced in Bangladesh. Namely- one is deshi jute and another is tossa. The native source of deshi jute was Southeast Asia and tossa jute from Africa. Gradually, due to favorable conditions, it was very popular in agriculture. Jute was used as vegetable, medicine, and garments since ancient times.

Jute

Jute is one kind of long, soft, shiny vegetable fiber that can be spun into coarse, strong threads. Shortly Code is C46. H6.O48, That means CARBON-46; Hydrozen-6; OXYZEN-48 (Huque, 1999). The origin of the term "Jute" referred to Sanskrit word "Juta," Jhout or Jhot. Moreover, Jhout was the word used for jute plants by Orissan gardeners in the Royal Botanical Garden, Calcutta. In 1928, jute was used for the first time the export return documents from Calcutta to Europe (Alim, 1978; Hussain, 2013). Still today in Bangladesh this fiber is called jute, PAT, NALITA, KOSTA *etc.* In China, jute is familiar as 黄麻 (Huángmá). India; जूट joot, It is also popular as Melochia to Arab people.

Jute was historically the only cash crop in Bengal other than rice. It is the only fiber produce crop in Bangladesh. Ranjan (1973) argued that cellulosic fibers are mainly three types: a) stem or bast fiber b) leaf fiber and c) seeds & fruits fiber. The jute fibers are derived from first group (the bast or phloem or skin fiber) which is the top one. The length of jute plant be as high as 16 feet or more and diameter of the stalk is around 3/4" to 1". About 100 varieties of jute have been identified by researchers. Among them, two varieties are very much popular in the commercial sense. Jute belongs to the genus *Corchorus* under family *Tiliaceae* (Recently *Malvaceae*). The scientific name is *Corchorous Capsularis* and *Corchorous Olitarious*. One is famous as deshi or, white, it tastes a little sour (Bengali; *teeta*) and other one is tossa (local name bogi). Its taste is sweet (Bengali; *misti*). Jute was also popular in ancient Europe. Royal (1855) said one kind of plant was considered as a vegetable in ancient Greek and was named *Korkhoros* (the origin of jute's scientific name *Corchorus* (Roul, 2009)

Evolution of Jute Industry in Bangladesh

I will try to evaluate the historical evolution of jute industry in Bangladesh and Indian subcontinent area in the following three major political regimes i.e. British India regime, Pakistan regime (East Pakistan/East Bangla) and Independent Bangladesh.

British India Regime

Bengal was the oldest British possession in the Indian subcontinent which was commercially and economically suitable. Jute was used during the ancient period in Indian subcontinent. People were looking for plants they could use for clothing. Among 600 fiber plants, they only succeeded for their uses of them it is mentionable here that firstly cotton and later on jute used for commercial production. If we analyze the history of jute, we find it is used about 800 BC as "*PATTA*." That time one kind of cloth was popular and it is presumed that this is was jute. Later, in 300 BC, in the time of wearing new clothes and giving gifts they used words like patjam and kitjam: this was also used in the famous Hindu book *Mahabharatha*. Used as patjam this means "cover." Kitjam is one kind of cotton (in Bengali *rashm*) and ancient Bengalis produced one kind of cotton from it Hussain(2014).

In the ancient Sanskrit literature, many people used jute as *nalita*. It is found from different literature like Sri Krishna Kiron Kabo (*ancient middle Gitikabo*) according to Dr Mohammad Shahidllah (1340-1440) Bongshi Part 22 (hagh pash.1374) wrote "Srikina used jute jewelry at flute." From this information, we have realized the popularity in rural areas. In Monamoti gan, it is clear that even slaves also wore jute shari (local women dress). In Bengal, for different ceremonies women also wore jute dress (local women dress: *Shari*). According to poet Mikondo, "chandi mangal" also used the term jute dress. Alim (1978) noted that jute business expanded in the Mogul period, it is very clear "AINI-AKBARI (1590)" used "chat" one kind of sack cloth. It is also found in east

Bengal (Bangladesh). In Rangpur many jute dresses were traded at that time. Another Bengali poem also called konkon chadi also used the term nalita (jute) (Islam, 2010). Bengali poets wrote several words on jute which was the cultural reflection of that rural society.

So it is realized that jute was famous as a cottage industry at that time. Various people and families depended on jute as their primary income. Many literature and poems also had found that it was very popular among rural people across the region. Historians have not clearly recognized that cottage industry is an integral part of Bengali economic history and culture. These were the first micro enterprises.

Omar (2012) has written in his research:

“Kaminikumar Chakrabaty, an employee of landlord (zamindari) estate in sherpur (At present one district of Bangladesh), described [Bengalis’] relationship with the jute in an agricultural magazine published in that town in 1882: ‘These days there is a lot of affection (ador) toward jute in this country. For this reason, cultivators planted an excessive (odhik) quantity of jute. The romantic (shuromik) cultivators love (bhalobasha) jute so much that they sing song like “there is no crop like jute” while working the fields. [Chakrabaty, Kaminikumar, Krishak, sherpur, Published by Sree Tamijuddin Ahamed, 1893, p.38]”

Ali (1998; p-15) pointed out from Kerr’s Report (1877) the early uses of jute:- the leaves were as vegetables, the jute sticks were used as materials for erecting fences, corn fields and for making animal sheds and even humans’ houses, the Bengali women used it as fuel, extracted oil from jute seed and the refuse being made into cakes for livestock foods and even root was used for preparing paper. People of Bengal were very much interested in cultivating jute for their prosperity in addition to rice. Jute gives them cash money which was helpful for their prosperity. It indicates that they wanted to explore jute uses and jute market for improving livelihoods. It is the secret reflection of all most of the rural people.

One sub-inspector of madrassas in sirajgonj, mokter ahammed siddiki, wrote about sirajgong subdivision in 1914, *“the trade of jute has improved the status of general people so much that there is no poverty in this region. In every village and in every neighborhood we see tin houses (better houses than ordinary house)-only because of jute”*¹ In the 16th and 17th century, poets also used jute issues in their writing. Imperial Gazette of India 3(1908) pp 410 *“During the 16th centuries the poor in eastern and northern Bengal were mainly if not entirely, clad in sack cloth of jute. Forboss Royal (1855) many women wear dress from corchorus plant and their livelihoods”* in the eastern border. Ramesh Dutto (1908) when he was writing the history of Dinajpur district found 13,000 acres of land in jute cultivation. Most families had *“tat”* weaving and women worked on this in their leisure time. Cultural reflection proved from the poet words.

So it is clear that jute cottage industry (micro-enterprises) were very popular historically. It is also found that 1805 lac (180,500,000) amount of jute goods (cottage products) to export in the 19th century and some handmade jute products were exported. However, for some reason, jute purchases declined after that. Due to flax-based products, Bengali handicrafts had a lot of competition in the European market. On the other hand, Bengal jute enjoyed a monopoly in the rest of the world. Roy (2010) The Scottish spinners (in Dundee) used flax as Russian raw material. The American Civil War (1861-1865) and The Crimean War (1854-56) stopped the supply of raw materials for the British textile mills. British mills faced a raw material crisis and high price challenges. The high price of flax led them to search for an alternative cheap fiber. Finally, they got it: jute from Bengal. Thereafter, the Dundee jute industry grew remarkably. It expanded to other countries like India, USA, Germany, Belgium, and Italy. During that time, Bengal achieved the capacity for low cost production over Dundee and other competitors. (Ali, 1998). In 1879, the jute factories of Bengal had only 4,946 looms: this expanded remarkably, up to 39,000 looms, 812,421 spindles and 254,000 people working in the jute sector in 1920.

¹ Shiddiqi, Moulovi Moktar Ahamed, Shirajgonj Itihas (History of shirajonj), 1916, p.53

The noticeable growth continued during the First World War. This is the reason Wallace wrote in his famous book *The Romance of Jute* "What a beautiful decade it was." Roy (2010). Finally, jute grew into large-scale industrial production instead of a cottage industry.

In the nineteenth century, the revolution had been occurred in Industrial and transport sector which expanded the world trade across the globe. The western world required raw materials for their factory production and collected cheap raw materials from less developed country. For this reason jute of bangle used as industrial raw materials at large scale. Bengal jute based agriculture became increasingly commercialized and economy was shifted toward world trade integration (Ali, 1998; p-1). Cox (2013) explored that jute was a key industry in the British Empire for economic and political change due to cheapness compare to other fibers like flax, hemp, cotton, coir, henequen, and so on.

East Pakistan Period

During 1947, the India subcontinent divided into two countries India and Pakistan. Pakistan has two part one is east and West Pakistan. Hussain, (2014, p-14) East Pakistan was the major jute supplier where 80% jute supply from (Bangladesh) Bangle. The business expanded in west bangle of India. In 1855 at Rishroy on the bank of hugly river established first jute mills. Subsequently, 104 mills were developed, that time 57% of waving (tat) and 70% production capacity of jute goods were India. TATA and BIRLA started business and they established different businesses. On the other hand, East Pakistan was main production area but no jute mills were established in the main production area. In East Pakistan (Bangladesh), first jute mill "Bowani" was established in 1951 (18 May), it was private ownership and owner was "The Bowa group" of West Pakistan. The capacity of the mill was 10 hessians, and 125 sacks weave. In addition, "Adomjee Jute Mill" was established with capacity 1700 hessian and .1 million sacking loom and 300 acre of land on the 12 December. That time .25 million people were workers at that jute mills. Average production was 288 MT and average income was 60 crore (BD TAKA). Due to the absolute production capacity of jute, jute industry was developed and it was main earning source of Pakistan during that time and getting and popular acclaimed named as "golden fiber." Later on 1951 to 1971 established 77 jute mills and. All the owner leading businessman was Pakistani (Shadi, 2007: p-20). During 1947-1948 East Pakistan (Bangladesh) enjoyed monopoly market and export market share was 80% (Alim, 1978). It is very surprising that jute mills owner west Pakistani, only sacks produced at these jute mills. They had no effort for diversification use actually they only control the market. But farmers did not receive the fair price and alternative market, No diversification effort at that time. If diversification was available then farmers got the fair price because of the alternative buyer. Actually, business was controlled by one class people.

Bangladesh from Independence to Today

Jute sector was the lifeblood of Bangladesh economy and it is also the same significance in today's rural economy. Moreover, Bangladesh is separated from West Pakistan and became an independent country after nine months war. It is assumed that major earnings from jute export were one of the prime factors in pursuing the independence movement for autonomy and separation from West Pakistan (Muhammad, 2007). Seventy-seven (77) jute mills were established during 1947 to 1971. After liberation war, in 26 march of 1972 all mills that had been under EPIDC² declared nationalized by one ordinance and formed BJMC³ as a corporate body. It can be noted here that the government adopted nationalization policy for all major industries after independence as a socialistic view. All viable, vibrant, financially sound industries had started operation by mid-level manpower. It is noted here before independence top levels positions and key positions were occupied by west Pakistani officers and owners. For this reasons, maximum skilled manpower leaves West Pakistan (Pakistan) and other places. From the begging jute sector started through mismanagement after independence such as financial crisis, lack of skilled manpower including jute researchers, jute textile engineers. After independence the earning volume from this sector was 89.86 % of the country's total income, moreover, the most of the raw jute rather than jute goods (Hossain, 2014). During the 1960s to 1970, about 30 million people were involved directly or indirectly in this industry. Approximately \$ 195 million dollar was earned by exporting four hundred and fifty

² East Pakistan Industrial Development Corporation

³ Bangladesh Jute Mills Corporation (BJMC)

thousand metric tons jute goods in 1972-1973. After eleven years of operations of the mills under Bangladesh Jute Mills Corporation (BJMC), incurring huge losses and crippling the sector, the government of Bangladesh adopted “privatization policy” and loss-making mills were denationalized in the year of 1982-83. By following this process, forty-three (43) Jute mills were denationalized to the private sector during 1977-86. Adviser of the caretaker government Mirza Aziz said governments provided around BDT 7500 crore subsidy since 1991 to run state-run jute mills. Subsequently, 58 jute mills were denationalized until 2007 and 7 mills were closed in 2007 under caretaker government (CG). Recent surveyed claimed that the total number of jute mill 200 and under BJMA 110 jute mills (Jute Chtro, 2010-12). Rahman (2007) pointed that government was forced the present jute mills owner to take all liabilities. This resulted of huge debt burden produces continued losses of jute mills. During this time market and products categories were limited. In response to this situation, the World Bank came to forward for with \$ 250 million JSAC (Jute sector Adjustment Credit) to assist Jute sector reform Program (JSRP) in 1992-93. The objectives of this program were to transfer loss-making jute mills to vibrant jute industry run by predominantly by the private sector. For achieving this goal government and the World Bank agreed for capacity rationalization, un-sustainability of past debts, interim loss finance, and privatization. The government of Bangladesh was obliged under that program: close nine public jute mills, Downsize two large public sector mills, write off one-third of all past bank loans as of June 30, 1992, and privatize eighteen public sectors mills. The government only was able to with \$50 million out of \$250 to reform the jute sector. But the project did not implement unexplored causes. It leads privatization process and debt burdening share improper and unfairly. These activities reflect true scenario of the jute sector of Bangladesh. Simultaneously, India was established new jute mills and modernizes with the help of the World Bank.

Status of Jute Agriculture in Bangladesh

The land of Bangladesh is suitable for jute production. Islam et al. (2015) noted that it produces around 30% of the total production of global jute production and export about 40% of its total production as raw jute to India, China, Pakistan, and others. In 2004- 2005 the jute cultivation are in Bangladesh was (465 400 Ha) which increased to 4 85 600 Ha, 533400 Ha during 2005-6, 2006-2007 respectively. Recently, Bangladesh government has developed “Mandatory Jute Packaging Act 2010” and “Mandatory Jute Packaging Rules 2013.” Furthermore, demands of jute products have increased significantly at home and abroad. But raw jute production is not satisfactory at farm levels. Farmers are reluctant to cultivate jute due to obstacles at different phases of the cultivation. The statistics show that jute cultivation area has been declined gradually from 7.09 lakh hectares in 2011 to 6.66 lakh hectares in 2014. On the other hand, jute production has been reduced from 84 lakh bale to 74.36 lakh bale during the last four years (figure-1).

More than 80% of world jute grows in the Ganges delta of Bangladesh which has been categorized into three areas such as- Jat area (*Brahmaputra Alluvium*), the Northern area (*Teesta Silt*) and the Districts area (*Ganges Alluvium*). The Jat area covers the greater Dhaka, Comilla and Mymensingh districts. The Northern area comprises greater Rangpur, Dinajpur, Bogra, and Rajshahi district. The District areas are composed of greater Faridpur, Jessore, Pabna and Kustia. Jat area contributes to 41.69% of total raw jute production whereas Northern and Districts area contributes 30.08% and 28.23% respectively. But the picture has been changed over the decades. District area accounted for 63.72% of total jute cultivation area where as Jat area contributed only 17.87% during 2009-10 (Molla 2014)

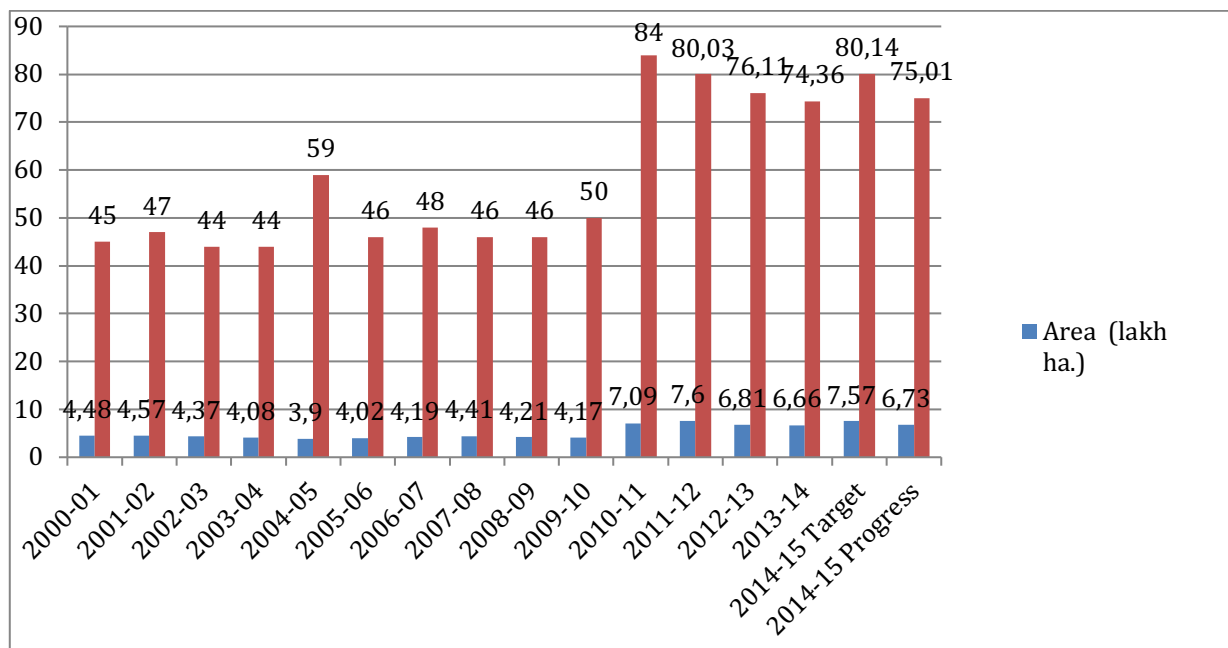


Figure -1 Jute Production in Bangladesh

Source: IJSG (2012) and DAE (2015)

Despite a leading environment for jute cultivation, the size of jute cultivation is not satisfactory over the last few years. The government and policy makers needs to be well informed about the status of jute cultivation as well as causes of deviation that undermine jute production and livelihoods of the farmers. If farmers get the motivation and benefits, they will cultivate jute (Islam et al. 2015).

Jute Products and Producers

Generally, jute goods are two types such as traditional and diversified jute products. The last couple of decades, Bangladesh dominated and earned foreign exchange by producing traditional goods such as hessian cloth and bags/ sacks, twine, yarn, and carpet backing cloth (CBC). When synthetic and plastic came to the market jute traditional products lost their market position. But a lack of proper initiatives in both policy and research jute cannot be revived its position. Some scholars have tried to use jute in different ways with their own initiatives, besides Bangladesh Jute Research Institute (BJRI) and Jute Diversification Promotion Centre (JDPC) are working on jute diversification. Kathuria & Malouche (2016) noted that jute and jute goods accounted 39% of total agricultural exports in Bangladesh and in 2014 it was 2.7% of total country's export. By considering overall jute sector, about 99 % exports come from low value added and traditional products; hence, diversified jute products currently represent less than 1% percent of jute sector export.

Basically, jute diversified products indicate "value added products" or "innovative products." These products are aesthetic and very exceptional than traditional jute products. Vries (2007) "*The use of jute in new, alternative and non-traditional ways that add value to final product are generally termed jute diversified products (JDPs)*" We mean simply products that claim to offer an environmental benefit." (Terra Choice, 2010). Molla et al. (2014) mentioned in their research "*Products other than traditional one having high-value addition can be defined as DJPs Abdullah (2008),*" and they also agreed diversified jute products means new products of jute which is an alternative and non-traditional use of jute. Diversified jute products are used for multipurpose. Value added products are three categories such as fiber based, yarn based and fabric-based products. Almost jute diversified products are manufactured by Micro, small and medium enterprises in Bangladesh (Booklet, JDPC)

Table-1: Comparative Picture of Jute Products and Producers

Producer	Nature of Products
Jute mills	Traditional Products: Hessian cloth and bags/ sacks, twine, yarn and carpet backing cloth
Jute Micro-enterprises	Jute Diversified Products: ladies bag, summer/beach bag, fancy bag, executive bag, school bags, purse, pouch, wallet, file, decorative products, shatarangi, wall/floor mats, table mats, runner, place mat, sikka, wall hanging, toys, grocery bags /souvenir, seminar bags, notebook, pen stand, paper & pulp (jute paper, jute –silk blended paper, jute board, garments tag, visiting card, greetings card & note book), jewellery and jewellery box and office items etc

Source: JDPC and IJSG (MSMEs: Micro Small and Medium Enterprises)

Moreover, Lei-dlo (n,d pp-76) pointed (FAO report “problems and prospects for diversified jute products 1990”) diversified product category: jute textile; all jute pile carpets and tapestries; paper and paper pulp; decorative fabrics including wall coverings, garments and apparel cloth; blanket and bed linen made of jute yarn and blends; colored/printed shopping bags; rigid luggage; soft luggage; handicraft; shoes and shoe uppers; non-woven products including automobiles panels and jute composites but diversified products does not include traditional products like CBC. Apart from the traditional products as whole jute has redefined the way does business by creating new products and opening new possibilities for jute sector. There are three items are identified such as Geo–textile, Soil savers and decorative items. Jute Micro-enterprises produce several types of decorative items. However, resettling only becomes coming to light now as the world looks for the natural options to save the environment. The time has come for the natural fiber to take over ideal solutions, conserving soil, environment, applications like civil engineering which are extremely important for human civilization.

Jute Organizations in Bangladesh

Jute sector is the largest sector still at present. This sector has public and private participation (figure-2). Jute sector has divided jute agriculture and manufacturing and both runs respectively Ministry of Agricultural and Ministry of Textiles and Jute in Bangladesh.

Public Organisation: The Ministry of Textiles & Jute plays vital roles to formulate policy for the jute and textile sector and implementing all activities through Jute Diversification Promotion Centre (JDPC), Bangladesh jute Mills Corporation (BJMC), and Department of jute. On the other hand, jute agriculture and research works perform by Ministry of Agriculture. Implementing departments under this ministry are Bangladesh Jute Research Institute (BJRI), Department of Agricultural Extension (DAE), and Bangladesh Agricultural Development Corporation (BADC) etc.

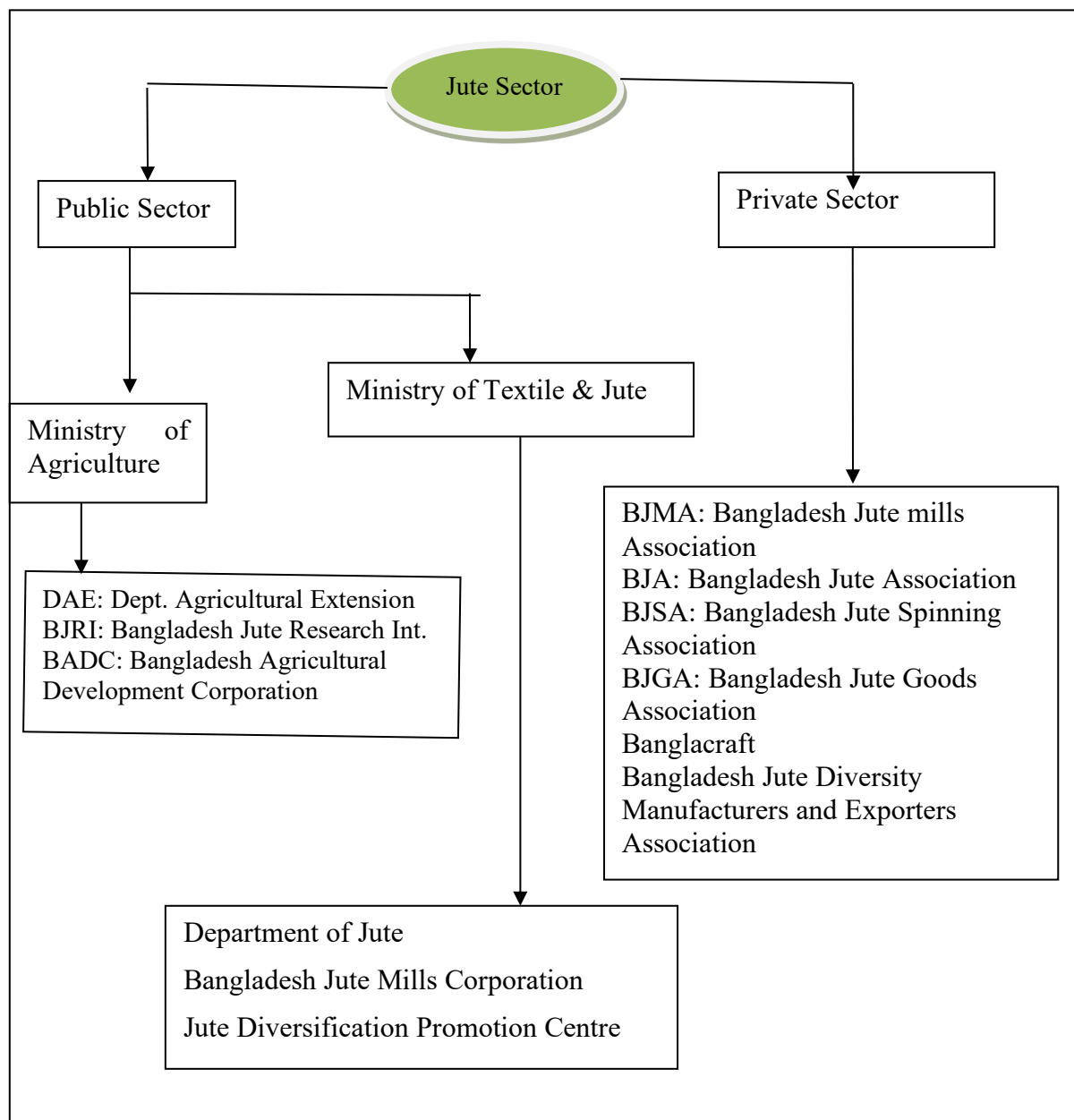


Figure-2: Jute Sector in Bangladesh. Developed by Author

Private Organization: Micro, Small, Medium Jute enterprises (MSMEs) are producing jute value-added products. Most of them are micro and cottage nature. Private Mills produce traditional products but few mills are producing diversified fabrics and goods. Their association name is Bangladesh Jute Mills Association (BJMA), currently, 41 ordinary and 88 associate mills are members of this association. Besides, the total numbers of 86 mills are under Bangladesh Jute Spinners Association (BJS) in Dhaka, Chittagong and Khulna Zone. (BJGA, 2014). 500 raw jute exporter are involved in Bangladesh Jute Association (BJA)⁴ which was established 1949. They export raw jute about 35 countries in the world. About 262 members of Bangladesh Jute Goods Association (BJGA)⁵ also involve in jute and jute goods trading and exporting.

The following organization is working only to promote and develop jute enterprises for producing value added products or market driven jute products to regain the sector in Bangladesh.

⁴ <http://www.bja.com.bd/>

⁵ <http://asiajute.com/bangladesh-jute-goods-association/>

Jute Diversification Promotion Centre (JDPC): JDPC is only absolute government body which helps jute diversification entrepreneurs. It was established 31st October 2002 under Ministry of Textile and Jute by the assistance of International Jute Organisation, UNDP, EU and Bangladesh Chamber of Commerce and Industry. It is working on to make intradepartmental and coordination relating to SMEs Development, Commercial Banks, and R&D institutions to enhance and expand activities gradually to rural areas of Bangladesh. *“The JDPC has been created with the vision of improving jute scenario, sustained development of jute economy and reviving the past glory of jute as “Golden Fiber” through extension of uses and production of jute products and jute diversified products of high value addition, in particular and thereby improving socio-economic conditions of farmers and other sections of people involved directly and indirectly with the sector”* (JDPC, 2007). The objectives of the centre are to:

- Accelerate economic growth through jute diversified SMEs, Cottage and Micro enterprises.
- Raise productivity and capacity building of the JDPs enterprises
- Provide package of promotional and extensive services to private sector entrepreneurs to facilitate the sub-sector growing steadily all over the country
- Ensure development and upgrading of skill and design capability of entrepreneurs of this jute sub-sector
- Create and develop marketing facilities and assist in marketing of three products both at domestic and global markets
- Generate income and gainful employment, empowerment of women through involvement of JD-SMEs, micro, cottage, handlooms and handicrafts all over the country
- Provide innovative technologies for new products and enhance the usage of jute diversified products in new areas of applications
- Create an enabling environment for investment and persistent growth of SMEs of JDPs.

Evaluation by the Expert Opinion:

In the early regime of jute industry, this sector only raised on the based on supplies of the colonial government and the farmer's jute price was determined by the colonial jute mills. Farmer's production was unplanned which creates ample economic losses due to unplanned production. One scholar said *“Jute Price was determined by the colonial government (master), farmer's production was huge that time there were no diversified crop production. Due to economic losses, they fall economy crises and psycho patient and even many farmer attempted at suicidal death were seen”*. It was also justified by the local government decision where jute production was control during 1940. Subsequently, it has been seen that in the British period the jute sector was focused on supply as a raw materials of colonial jute mills and cottage enterprises only limited for household uses. Such as rope, sikka (Hanger of deferent house hold stuffs), fancy, jute stick as fuel in the rural villages. Scholar said *“In our childhood we have seen jute production, jute retting, fiber extractions were festival in our village; our mother, ant and grandmother used jute to make sikka and other uses. These scenarios are clearly seen in the British and Pakistan regimes. In Pakistan regimes the jute sector was popular as industrial product. Many jute mills were established in the east Kolkata and East Pakistan. Still the productions were limited for few products such as hossain, yarn and sacks. After independence of Bangladesh jute mills were collapsed due to lack of poor management of jute mills, lack of managers crises and no diversification of uses of jute and jute products, no modernization of jute mills, lack of research.*

Few scholars coined the real picture of jute sector such as Jute mills

Most of the scholar agreed that it has another chance to reignite For enhancing competitiveness, enterprises need to focus on business practices which ensure high quality and agility (Christopher and Towill, 2002). Hence, effective strategies or business practices require according to customer's expectations to become a success. This depends on the ability of entrepreneurs to quickly adjust. *Traditional large enterprise only focuses on production according to their buyer's demand. If they lose buyer's order, they close the production and this is particularly common in government mills. They have no diversification strategies and practices. Even maximum power looms and machineries are of 60 to 70 years old. These mills are running although with limited production. Few*

private mills have produced world standard fabrics and value added jute products. (Key Informant- E1 Research participants argued that demand condition of jute products is increasing in local and overseas market. Customers were buying and using jute products than the recent past. Particularly, the sells records of jute diversified products had been increasing in few years. Due to fashionable and stylish products customers were willing to buy jute products. Jute producers were selling their products to local fairs, national and different showrooms. It was observed that number of customers was increasing on the domestic market. Producers were expanding their market niches in such a way that when the producers sell their product at a local fair, successful sales enable them to progress by trying to participate in regional or district level trade fairs. This process is repeated by as they try to participate to national trade fair and overseas international trade fair of they are successful from the previous lower level markets. At every trade fair or exhibition, producers receive orders of jute value added products from customers.

Increasing Demand for Eco-friendly Jute Diversified Products as Fashionable Goods: Customers always prefer fashionable products. Recently, green consumers have emerged. They want to buy less environment polluted products. This trend gives to green producer's competitive advantage. One key informant said *"Nowadays customers are willing to pay eco-products jute alternative of plastic and synthetic products. You see today, many people use jute products. Even I have been using jute bags last few years. Because, it looks very nice. I have interviewed at street "I have seen many customer want to buy jute product, they replied the designs are good. We are very astonished... is it possible to make these types of nice products from jute." Women are buying ladies bags, home furnishes, jewelry items, organizations places order for seminar bag, workshop bag or files. School, college, University students buy jute student bag. Really it is good trend and good hope for our jute sector" (Key Informant- C1).*

Bangladesh government passed mandatory use of jute in packaging industry which is "Mandatory Jute packaging Act 2010". Last few years, government has succeed in implementing mandatory jute packaging law for six essential items such as paddy, rice, wheat, maize, fertilizer, sugar etc. Bangladesh Bank is also helping to implement this law. This initiative created local demand of 840 million jute bags for agricultural and non-agricultural products. (The Daily Star, 13 October 2015). Ahammed and Kader (2014) pointed out that a number of shopping malls, agro-shops, and chain shops have increased in Bangladesh last few years and they need secondary packaging material such as shopping bags, promotional bags and sacks etc. One survey explored that 10 million plastic bags were used every day in Bangladesh. It is estimated that about 14.1 billion bags were used annually at household level in Bangladesh. He assumed that it can be expanded 10 million pieces per day if jute bags are supplied at cheap rate. On the other hand, in the global packaging market stood \$812 billion in 2014 and will be reached \$975 billion by 2018 and \$ 997 by 2020 survey conducted by smither Pira Market Report⁶. According to International Jute Study Group (IJSG) the global demand of shopping bags is estimated to be 500 billion pieces, worth approximately \$ 500 billion a year (IJSG, 2012). Need based products create ample opportunities for jute micro-enterprises such as shopping bags, jute ladies bags, seminar, laptop, jute ornaments, pencil stands etc. In this regard, product & design innovation along with push and pull market strategy could make more demand of jute products in the environmentally conscious domestic and world markets.

Increasing Demand for Jute Goods due to Global Warming: The artificial fiber based products are being considered as the root causes of many problems while the natural fiber based products are proven to be absolutely harmless for the environment (Environment, 2011). Ahammed and Kader (2014) argued that the artificial synthetic packaging materials contain non-biodegradable and hazardous ingredients for the environment including high density polyethylene (HDPE) bags with prodegradant additive, Low-density polythene (LDPE) and Non-woven polypropylene (PP). Glazner (2015) mentioned *"Burning of fossil fuels produces majority emission for energy. A smaller amount roughly a third, come from leaks from natural gas and petroleum systems, the use of fuels in production (petroleum products used to make artificial plastics) and chemical reactions during the production of chemicals, iron and steel and cement."* Furthermore, a research report mentioned that one (1) kilogram (kg) of synthetic or plastics produces about six (6) kilogram CO₂ during

⁶ <http://www.smitherspira.com/industry-market-reports/packaging/the-future-of-global-packaging-markets-to-2020>

the lifetime of the product.⁷ Recently, climate changes have influenced customer's buying behavior turn to green and biodegradable products in the last few years. In this regard, green entrepreneurship tries to ensure enterprises economic benefits, environmental protection, effective resource utilization and biological balance. As a result, it is giving chance for the jute products as a competitive advantage. *One of the respondent explained "the demand of our product has increased in local trade fairs, Government offices, Non-government offices, university areas. Many orders have been received in overseas exhibitions. I have received orders from EU countries like Germany (Frankfurt). Currently, customers want to buy jute shopping bags thereby ignoring plastic bags" (Key Informant-M).* In addition, association leader explained that *"Plastic bags have been banded in several countries-from the US to Europe, Africa, Asia and Australia, and it offers a new opportunity to export value added jute products"*⁸

As a Green Brand: A good brand always helps to produce competitive advantage. The world is not only moving towards green technology, green products and services but also green economy. International Jute Study Group (IJSJ, at present closed) encouraged *"wipe your carbon footprint with Jute"* However, producers are still struggling to develop good quality products at a relatively cheaper cost, good quality and attractive designs. Other substitute products like synthetic based products have occupied a major share of the market. Some designers are trying to develop very attractive jute based products for green customers. *"You see still it is not famous brand."* *Bangladesh has a chance to develop jute value added products as a brand in the world. This is why because Bangladesh has suffered a lot from climate change related effects the last few decades. Even who are poor, they are producing value added products. So Bangladesh can develop these products for earning foreign currency and a "golden fiber" state in the world. Jute farmers will get higher prices if the market expands."*

Concluding Remarks:

Evolution of this golden fiber in Bangladesh over the past decades has experienced many ups and downs. The results demonstrate that insufficient initiatives and actions have been generated to lead the creation of sustainable jute sector. As a rapidly developing country, Bangladesh faces many economic, social and environmental challenges. These challenges are obstacle to the shiny future of 180 million citizens of this country. Still one fifth of populations are directly and indirectly involved with jute industry. Moreover, Bangladesh requires more local resource based industry for sustainable economic solution of this densely populated country. In this context, eco-friendly jute diversified products through SMEs might be a potential sector. Market driven new jute policies must be formulated and implemented to revive the golden fiber of its own shine.

References

- Ahmed, T. and Kader, S.(2014). Seamless Jute Bag: a novelty in eco-friendly Packaging. World,2979.
- Ali, M. W. (1998). Jute in the Agrarian History of Bengal (1870-1914)- A Study in Primary Production
- Alim, A. (1978) A Hand Book of Bangladesh Jute, Dhaka, Bangladesh
- Booklet, Jute Diversification Promotion Centre (JDPC), Ministry of Textile and Jute, Bangladesh
- Christopher, M. and Towill, D.R. (2002) Developing Market Specific Supply Chain Strategies. International Journal of Logistics Management, 13, 1-14. <http://dx.doi.org/10.1108/09574090210806324>
- Glazner, E. Plastic Pollution and Climate change, 10 December 2015 Available at: <http://www.plasticpollutioncoalition.org/pft/2015/11/17/plastic-pollution-and-climate-change>. [Accessed June 2, 2016]
- Haque, N., (2006, July 14). [Use of Bangladeshi jute in the body of Toyota car]. The Daily Nayadiganta, Dhaka, Bangladesh (In Bangla)
- Hoque , M. H. (1999) Strategies of Jute Industry (Pat shilper kala kausol), Dhaka, Bangladesh
- Hussain, M. (2013) Jute in Bangladesh, Bangladesh Jute Research Institute (BJRI), Manik Mian Avenue, Dhaka-1207, Bangladesh

⁷ <http://timeforchange.org/plastic-bags-and-plastic-bottles-CO2-emissions>

⁸.⁹ http://jute.org/worldnews_details01102013.htm

- Hussain, M. (2014) Jute and Jute Shilpo, Bangladesh Jute Research Institute (BJRI), Manik Mian Avenue, Dhaka-1207, Bangladesh
- IJSG-International Jute Study Group, (2012) World Jute & Kenaf Statistics: At a glance.
- Islam, M. M., Xiaoying, J., Md. Uddin, M.E., & Bhuiyan, F. (2015) Status and Constraints of Jute Cultivation in Bangladesh: An Experience from Selected Upazilas under Chandpur District, *Asian Journal of Agriculture and Rural Development*, 5(8): 175~186
- Jute Matters (2013) A monthly publication by International Jute Study Group, 1(4), March
- Kathuria, S. & Malouche, M. M. (2016) Attracting Investment in Bangladesh- Sectoral Analysis: A Diagnostic Trade Integration Study, World Bank Group, First Edition: 63~96
- Kerr, HC. Jute Report 1877 Available at http://en.banglapedia.org/index.php?title=Jute_Report,1877 [Accessed June 2, 2016]
- Lei dlo (n.d) (1990) Problems and prospects for Diversified Jute Products, FAO: 76
- Levi-Strauss, C. (1952) Race and History, UNESCO Courier. 4(5).
- Molla, M. M.U. (2014) An Economic Analysis of Jute Sector in Bangladesh: Problems and Prospects. *PhD Thesis*, Department of Agribusiness and Marketing, Bangladesh Agricultural University, Mymensingh, Bangladesh.
- Muhammad, A. (2007). Pat Shilpo ebong Potobhume (Jute, (Jute Industry and Land of Jute) Bulletin, Ain O Shalish Kendro, Dhaka, Bangladesh
- Omar, A. T. (2012) The Envelope of Global Trade: The Political Economy and Intellectual History of Jute in the Bengal Delta, 1850s to 1995s, *Doctoral Dissertation*, Harvard University
- Popenoe, O. (1970) "Malay Entrepreneurs: An Analysis of the Social Background, Career and Attitude of the Leading Malay Businessmen in Western Malaysia. Doctoral Thesis, LSE, University of London, London.
- Rahman, K. T. (2007 October) Golden Past, Golden Future, Forum-A Monthly Publication of the Daily Star
- Ranjan, T. C. (1973) Handbook on Jute, Oxford & IBH Publishing Co. New Delhi, Volume -1
- Robinson, K. L., Dassic, W., Christy, D. R. (2004). Entrepreneurship and Small Business Development as a Rural Development Strategy, *Southern Rural Sociology*, 20(2): 123
- Roul, C. (2009) The International Jute Commodity System, (First ed.), Northern Book Centre, New Delhi, India
- Shadi, H. Pat Hattar Nepothe, (2007) Dhalka, Bangladesh, December 2007 Volume 1
- Terra Choice. 2010. Sins of Green washing: Home and Family Edition. Terra Choice Group, Inc. Ottawa, Ontario, Canada. Available online at <http://sinsofgreenwashing.org/findings/greenwashingreport-2010>
- The World Bank (2015) Bangladesh Development Update, Available at: <http://documents.worldbank.org/curated/en/550801468014652230/pdf/955680WP00PUB0na100PUBLIC00REVISED.pdf> [Accessed on 15 June 2016]
- Vries, D. J.G.M, (2007) Export of Jute products from Bangladesh to Europe: Analysis of Market Potential and development of Interventions for GTZ-PROGRESS

Growth Effects of Foreign Direct Investment (FDI) From China and Other Sources in Africa: The Role of Institutional Quality

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Abstract

This study examines the effects of Foreign Direct Investment (FDI) from China, United States (US), European Union (EU) and the rest of Asia on economic growth conditional on the institutional quality of sub-Saharan Africa for the period (2003-2012). We develop theoretical argument from the existing literature to show that institutional heterogeneity may be one of the description for mixed findings of previous empirical studies on the growth effects of Chinese FDI in Africa. We use rule of law to proxy for institutional quality. Using Panel Threshold Regression (PTR) model, we show that FDI from all these sources have a positive impact on growth only above certain thresholds of rule of law and these thresholds differ from one source to the other. However, for FDI from China and the rest of Asia, the difference is marginal. That is, the growth effect of FDI from Asia is positive in countries with governance rating of at least -0.89 while negative in countries falling within a range of -1.35 and -0.89. In terms of FDI from EU and US, beneficial outcomes on growth are realized in countries with governance rating of at least -0.90 and -0.62, respectively. These results confirm that China and the rest of Asia do invest in both weak and strong governance countries in sub-Saharan Africa although the impact is different. Whereas, US and EU seem to invest only in strong governance African countries. However, the former is more sensitive to institutional quality than the latter.

Keywords: Foreign Direct Investment, Panel Threshold Regression, Rule of law

1. Introduction

The controversy surrounding the impact of Chinese FDI on growth in Africa can hardly be solved when all the African countries are regarded as one. The fact of the matter is that each African country is different from the other, and the structural relationships may vary from one country to the other. In line with the growing emphasis on the catalytic role of institutions on FDI-led growth (Peres et al. 2018; Jude & Leveuge 2015; AbuAl-Foul & Soliman 2014; Li & Hook 2014; Unisa Yusufu 2013), this study associates African countries' heterogeneity to

the quality of institutions. In essence, Su & Ado (2016) suggest that an institutionally based approach may be most relevant in better explaining China's Investment in Africa. This suggestion can equally apply to other sources of FDI in Africa.

Various studies which explored the role of institutions on FDI-growth nexus used classical fixed-effects models to capture the impact of the interaction term between FDI and Institutional variable (Peres et al. 2018; Li et al. 2014; Unisa Yusufu 2013). Classical fixed-effects models cannot capture for varying slopes rather they reflect the heterogeneity of different countries in intercepts. Panel Threshold Regression (PTR) model of Hansen (1999) provides a solution to this problem. PTR allows the estimated coefficients of some regressors to take different values subject to the value of another observable independent variable reaching the threshold. Thus, the model assumes that the threshold for regime switching is clearly defined. Gonzalez et al. (2005) relaxed this assumption to incorporate smooth transition regression (STR) in panels. The latter substituted indicator function in the PTR model with smooth distribution function to allow the estimated coefficients to gradually adjust as the system switches from one regime to the other. This approach is used in the studies of Jude et al. (2015) and AbuAl-Foul et al. (2014)

The aforementioned studies used aggregate FDI data yet we seek to identify thresholds for a specific source of FDI in Africa. We seek to show how institutional quality in African countries can influence the growth effects of each source of FDI in the weak and strong institutions regimes. This implies that the threshold for regime switching should be clearly defined for each source of FDI and therefore PTR is appropriate for this study.

The rest of this paper is organized as follows. Section 2 provides a literature review on the role of institutions towards FDI-led growth. We also discuss the relationship between institutions and FDI; and the direct relationship between institutions and economic growth. Section 3 describes the methodology, specifies the model and the estimation technique. Section 4 reports estimations results and finally, section 5 gives conclusion and recommendations based on main findings.

2. The role of institutions on FDI-led growth

It is widely acknowledged that institutions are upheld to make a difference to individual actors in society (North 1990). This follows that various sources of FDI as actors in a society are likely to act differently conditional to the institutional structure of the host society. The empirical literature is still scarce to substantiate this argument although the existence of debate in the subject cannot be ruled away. For instance, Ayodele & Sotola (2014) claim that China does invest in African countries where Western investors are not willing because Chinese investors hardly take account of institutional quality. Likewise, Chen et al (2015) assert that the Chinese portion of FDI in weak governance African countries surpasses that of Western investors. The latter further argue that the impact of Chinese FDI on growth is approximately the same between weak and strong governance countries in Africa. However, Renard & John (2011) suggest that the benefits of China's investment can be realized if Africa works on improving its governance.

Institutions on their own have been proven to be crucial economic growth factors in various studies. For sub-Saharan Africa in particular, McMillan & Harttgen (2014) and Rodrik (2014) argue that the growth miracle which took place between (2000-2009) was mainly driven by institutional reforms. Although the surge of FDI from China and other sources cannot be taken for granted, Rodrik (2014) suggests that institutions provide a base and framework for interaction with foreign investors. This could imply that FDI can either be unhealthy or beneficial to growth depending on the institutional quality of the host country. Weak governance performance tends to be associated with corruption, government ineffectiveness, poor regulation quality, ineffective rule of law, political instability and poor accountability among other governance factors. It is therefore unusual for FDI to be beneficial on the growth of such countries although Chen et al (2015) urge otherwise in the case of Chinese FDI in weak governance African countries.

Jude et al. (2015) demonstrate various aspects in which the conditioning role of institutions on FDI-led growth nexus takes place. First, the country's productivity prospects are shaped by institutions, hence, may attract more

FDI. Second, weak institutions are detrimental to the business environment and therefore FDI-financed firms are highly sensitive to the governance framework of the host country. The first aspect concurs to the finding of Peres et al. (2018) which support the significance of institutions in attracting FDI in developing countries. Furthermore, Morrissey & Udomkerdmongkol (2012) argue that the extent to which FDI crowds out domestic investment is related to institutional quality in host countries. For sub-Saharan Africa in particular, Unisa Yusufu (2013) shows that institutional quality does not only attract FDI but also can amplify the growth effects of FDI in the continent.

Unisa Yusufu (2013) adopted the Solow model to investigate the channels through which FDI can promote growth in Sub-Saharan Africa over the period (1981-2010). The channels investigated include human capital, institutions, infrastructure, and financial development. While using the system GMM method, the findings show that only institutions and financial development have a positive impact on the FDI-growth relationship in Sub-Saharan Africa. Likewise, Li et al. (2014) utilize the system GMM to estimate the role of institutions for the growth-enhancing effect of FDI in a panel of 78 countries over the period (1981-2005). The results highlight the complementary effect in the middle of FDI and institutional quality where the impact of FDI on growth actually depends on the quality of institution in the host countries.

Generally, GMM implies a linear reciprocal action between FDI and institutions in generating growth. In other words, a reform in institutional quality is assumed to have constant impetus on the marginal effect of FDI. Accordingly, the implied threshold only points out where the total marginal effects of FDI eventually turn positive. This idea was challenged by AbuAl-Foul et al. (2014) and Jude et al. (2015) through PSTR model of Gonzalez et al. (2005), using evidence from MENA countries for the period (1984-2011) and 94 developing countries over the period (1984-2009), respectively. Their results demonstrate how institutional quality reform does neither act linearly on the marginal effect of FDI nor reciprocate proportionally with effort, rather subject to the distributional position of the institutional variable.

Furthermore, the studies also demonstrate how the recognized threshold is not necessarily the one that tips over the coefficient of FDI from negative to positive, as it is an endogenous one that shows the shift in the slope of the FDI-growth regression (a shift that theoretically could occur between two positive slopes as well). Regardless of these notable differences in methodologies, the ultimate conclusion attained using both the system GMM estimator and the PSTR estimator reflect institutions as a modulator for FDI-led growth.

3. Methodology

This study follows Neuhaus (2006) by inputting inward stock of FDI in place of Human Capital in the augmented Solow Model of Mankiw et al. (1992). Hence we account for two types of physical capital stocks which are, domestic capital (K_d) and foreign capital (K_f). However, we go beyond FDI aggregate data and look at bilateral FDI data compiled by UNCTAD for the period (2001-2012). Thus, we build 12 years synthetic panel that allows us to overcome the very short time span of available bilateral FDI data between Africa and its key FDI sources.

$$Y(t) = K_d(t)^\alpha K_f(t)^\beta A(t)L(t)^{1-\alpha-\beta} \quad (1)$$

Where Y is aggregate output, K is the stock of physical capital, A is the productivity parameter, L denotes labor input and the subscript t represents time. α and β represent production elasticities and they are assumed to vary for the two types of physical capital stocks. Bassanini & Scarpetta (2001) point out that $A(t)$ consists of two elements. One that accounts for various policy oriented variables such as institutional framework, inflation, terms of trade and other trade openness variables. The other element reflects exogenous technical progress, that is, all other unexplained trend growth variables which the model does not explicitly account for.

Our model follows the neoclassical growth theories, therefore, we utilize changes in the log of per capita GDP in real terms as our dependent variable ($\ln y_{it} - \ln y_{it-1}$). The specification of our regressors incorporates fundamental determinants of the steady state, that is, lagged dependent variable (y_{it-1}), population growth rate

(n), changes in technology (g), the rate of depreciation for capital stock (d) and domestic investment savings rate (s_d). The subscript (s_f) denotes for foreign investment savings rate. Other control variables ($X_{i,t}$) represent the components of $A(t)$ and they are discussed below. The basic model can be summarised using the following econometric statement:

$$\ln y_{it} - \ln y_{it-1} = \alpha + \beta \ln y_{it-1} + \gamma \ln s_{d,it} + \phi \ln s_{f,it} + \varphi \ln(n_{it} + g + d) + \varphi' \ln X_{it} + \lambda_t + \eta_i + \varepsilon_{it} \quad (2)$$

where $\lambda_t, \eta_i, \varepsilon_{it}$ proxy for period-specific effects that are assumed to affect all countries for example technology shocks, unobserved country-specific effects, and white noise error term respectively. In line with augmented Solow model of Mankiw et al. (1992), we assume the depreciation rate of the physical capital stock (d) and changes in technology (g) to be constant over time and equal to 0.05. Thus, Equation (2) can be presented as follows:

$$\ln y_{it} = \alpha + (\beta + 1) \ln y_{it-1} + \gamma \ln s_{d,it} + \phi \ln s_{f,it} + \varphi \ln(n_{it} + 0.05) + \varphi' \ln X_{it} + \lambda_t + \eta_i + \varepsilon_{it} \quad (3)$$

3.1 Data and variable description

This study measures per capita GDP in real terms for income levels, Gross Capital Formation as a percentage of GDP for domestic investment savings rate and the share of inward stock of FDI in GDP for the foreign investment savings rate. We use stock rather than flow data of FDI to capture for perpetual and some of the immeasurable effects of FDI on growth. Neuhaus (2006) argue that that the ratio of inward stock of FDI to GDP is more accurate than flows in capturing for perpetual and some immeasurable effects of FDI on economic growth. FDI is differentiated between FDI from a particular source and FDI from the rest of the world (ROW) to sub-Saharan African countries. FDI from ROW is controlled by subtracting source's FDI from the total inward stock of FDI to Africa. For population growth, we add 0.05 before generating logs. The components of X_{it} include total natural resource rents as a percentage of GDP, changes in terms-of-trade and inflation rate. All these control variables are in logarithms except for changes in terms-of-trade, as the variable exhibit a large number of negative values. We use rule of law as the institutional quality variable. The summary of all the variable descriptions and data sources is provided in Table 1 below.

Table1: Variable Descriptions and Data Sources

VARIABLE	DESCRIPTION	SOURCE
GDP per capita	Gross Domestic Product (GDP) per capita, constant 2010 US\$	WDI (2019)
Domestic Investment	Gross Capital Formation,% of GDP	WDI (2019)
Population Growth	Population growth rate in %	WDI (2019)
Terms of Trade Growth	Changes in terms of trade in %, based on an index 2000=100	WDI (2019)
Inflation	GDP deflator, annual change in %	WDI (2019)
Institutional Quality	Rule of Law: The estimates range from approximately -2,5 to 2.5 indicating weak and strong governance performance respectively	WDI (2019)
FDI ROW	Total inward stock of FDI from the rest of the world(Total inward stock of FDI less inward stock of FDI from China/USA/EU/Asia), % GDP	UNCTAD stat (2019)
FDI (CHINA/USA/EU/ROA)	Inward stock of FDI from China, USA, European Union and the Rest of Asia respectively,% of GDP	UNCTAD stat (2019)
Total Natural Resource Rent (% of GDP)	Total natural resources rents are the sum of oil rents, natural gas rents, coal rents (hard and soft), mineral rents, and forest rents.	WDI (2019)

The sample of this study is restricted by the availability of sound FDI bilateral data between African countries and the FDI sources considered in this study. The list of the sub-Sahara Africa countries utilises is given in Table 2 below.

Table 2: Sample

Angola	Benini*	Botswana	Burkina Faso	Burundi	Cameroon	Cape Verde	Central Africa Republic
Chad	Comoros	Congo	Cote D'Ivoire	DRC	Equatorial Guinea	Eritrea	Ethiopia
Gabon	The Gambia	Ghana**	Guinea	Guinea-Bissau*	Kenya	Lesotho	Liberia
Madagascar	Malawi	Mali*	Mozambique	Niger	Nigeria	Rwanda*	Sao Tome & Principe*
Senegal*	Seychelles	Sierra Leone	South Africa	Swaziland	Togo*	Uganda	Tanzania
Zambia	Zimbabwe						

Notes: *countries with less than three observations of FDI from all the FDI sources for the period (2001-2012).

The estimation of PTR using STATA is very sensitive to missing values hence, these countries were removed to obtain a strongly balanced panel data. We hardly could ipolate and epolate for the missing FDI values of the removed countries. **The country was removed for the estimation of PTR relating to Chinese FDI only. For 2SLS analysis, we prefer to use the whole sample although the difference between the estimated coefficients obtained using the whole sample and those obtained using the reduced sample is statistically insignificant.

3.2 Model Specification

The main aim of this paper is to establish threshold level/s at which institutional quality can influence the growth effects of various FDIs in Africa. This requires a model with varying slopes so that it can capture the conditioning effects of institutions in Africa on the FDI-growth nexus in the 'weak governance performing' and 'strong governance performing' regime, respectively. The classical fixed effects cannot be appropriate because the model reflects the heterogeneity of different countries in intercepts. Hansen (1999) proposed the Panel threshold regression (PTR) model which allows the estimated coefficients of some regressors to take different values subject to the value of another observable independent variable reaching the threshold. Thus, the model assumes that the threshold for regime switching is clearly defined. Later Gonz'alez et al. (2005) relaxed this assumption to incorporate smooth transition regression (STR) in panels, allowing the estimated coefficients to gradually adjust as the system switches from one regime to the other. However, the assumption relaxed by the latter accommodates the major objective of this paper hence we will stick to the former. PTR can account for different links in terms of statistical significance, magnitude and signs among or between variables of interest in distinct regimes.

Allowing for fixed individual effects (μ_i) and given a non-time invariant institutional indicator ($q_{i,t}$) as a threshold variable, the PTR divides the observations into two or more regimes, depending on whether each observation is above or below a threshold level. The econometric equation of PTR model with two extreme regimes can be defined as follows;

$$y_{it} = \mu_i + \beta'_{it} s_{f,it} g(q_{it}; c) + \varphi' X_{it} + \varepsilon_{it} \quad (4)$$

Where X_{it} proxies for fundamental Solow growth variables and other control variables discussed above excluding institutional quality indicator. The role of the threshold variable explains its absence in the main equation (Jude et al. 2015; AbuAl-Foul et al. 2014). This also controls for reverse causality and collinearity between governance indicator and other economic growth variables. The subscript $s_{f,it}$ represents the inward stock of FDI while ε_{it} is the error term. The binary transition function $g(q_{it}; c)$ divides the single threshold equation (4) into two regimes with coefficients β_1 and β_2 , where c is the threshold parameter. This translate equation (4) into the following equation:

$$y_{it} = \begin{cases} \mu_i + \beta'_1 s_{f,it} + \varphi' X_{it} + \varepsilon_{it} & \text{if } q_{it} \leq c \\ \mu_i + \beta'_2 s_{f,it} + \varphi' X_{it} + \varepsilon_{it} & \text{if } q_{it} > c \end{cases} \quad (5)$$

Equation (5) can be thought of as linear heterogeneous panel model with coefficients that vary across cross-section units and over time. Where the slope parameters satisfy;

$$\frac{\partial y_{it}}{\partial s_{f,it}} = \beta_{it} = \begin{cases} \beta_1 & \text{if } q_{it} \leq c \\ \beta_2 & \text{if } q_{it} > c \end{cases} \quad (6)$$

For multiple thresholds that is, models with $r + 1 > 2$ regimes or threshold parameters c_1, \dots, c_r , the general specification is as follows:

$$y_{it} = \mu_i + \sum_{j=1}^r \beta'_j s_{f,it} I_{(c_{j-1} < q_{it} \leq c_j)} + \varphi' X_{it} + \varepsilon_{it} \quad (7)$$

where $I_{(c_{j-1} < q_{it} \leq c_j)}$ represents the indicator function and $c_0 = -\infty$ while $c_{r+1} = +\infty$.

Equation (7) ought to be fitted sequentially for instance in the case of a double threshold that is, three regimes model the specification is presented below;

$$y_{it} = \mu_i + \beta'_1 s_{f,it} (q_{it} < c_1) + \beta'_2 s_{f,it} (c_1 \leq q_{it} < c_2) + \beta'_3 s_{f,it} (q_{it} \geq c_2) + \varphi' X_{it} + \varepsilon_{it} \quad (8)$$

where $c_1 < c_2$.

Notwithstanding uncertainty about the endogeneity bias and potential reverse causality, this study uses lagged FDI and lagged institutional quality indicator. This translates our equations of interest (equations (4) and (7)) into the following equations, respectively:

$$y_{it} = \mu_i + \beta'_{it} s_{f,it-1} g(q_{it-1}; c) + \varphi' X_{it} + \varepsilon_{it} \quad (9)$$

$$y_{it} = \mu_i + \sum_{j=1}^r \beta'_j s_{f,it-1} I_{(c_{j-1} < q_{it-1} \leq c_j)} + \varphi' X_{it} + \varepsilon_{it} \quad (10)$$

3.3 Estimation Procedure

The first test is conducted to determine the significance of the threshold effect in equation (9) (Hansen, 1999). Gonz'alez et al. (2005) refer to the procedure as a test for linearity against the equation (9). Jude et al. (2015) suggest the procedure as a homogeneity test of the FDI-growth coefficient conditional on threshold variable (q). Despite differences in terminology, the threshold effect hypothesis in the equation (9) can be presented as follows;

$$H_0: \beta_1 = \beta_2$$

The rejection of H_0 is a confirmation that the two regimes nonlinear threshold model is appropriate otherwise, equation (9) collapses into a linear panel regression model with fixed effects. However, the main challenge is the presence of the nuisance parameter in H_0 . That is, the threshold parameter c is not identified under H_0 Davies (1987). This problem renders the asymptotic distribution of F_1 statistic non-standard and in particular, dominates the Chi-squared distribution. One solution to the nuisance parameter issue is to use a bootstrap procedure proposed by Hansen (1996). The latter demonstrates that this bootstrap simulation produces first-order asymptotic distributions and therefore test statistic F_1 and the corresponding p -value attained from the bootstrap are asymptotically valid. The null hypothesis is rejected if the test statistic $F_1 >$ its critical value.

Based on equation (10), the second step is conducted to discriminate between single and double threshold regression. In this context, H_0 : Single threshold regression. The hypothesis of the two regimes is rejected in favor of three regimes if $F_2 >$ its critical value. A sequential procedure based on F_2, \dots, F_j (until the corresponding H_0 is accepted) allows the determination of the number of thresholds or regimes hence the appropriate regression. The corresponding asymptotic p -value for F_2, \dots, F_j can again be estimated using bootstrap analog (Hansen 1999).

4. Estimated Results

This study uses rule of law as a proxy of institutional quality in Africa hence, the threshold variable. The variable has been drawn from six World Bank governance performance indicators based on the results of the pairwise correlation matrix (Note 1). Although all the indicators are positively correlated to each other and statistically significant at 1%, rule of law has the highest correlation with the rest of the indicators. This is an indication that reform in rule of law is likely to have a positive bearing on all other governance indicators.

Table 3 summarises the statistics of the threshold variable according to its minimum value, 25% quantile, 50% quantile, 75% quantile and the maximum value. The statistics are provided both in logs (row (1)) and in raw data (row (2)).

Table 3: Summary statistics of the threshold variable

Variable	Minimum value	25% quantile	50% quantile	75% quantile	Maximum value
ln lagged Rule of Law (1)	-1.329	-0.134	0.279	0.572	1.025
Lagged Rule of Law (2)	-1.855	-1.248	-0.856	-0.384	0.668

Note: Authors own calculation based on rule of law data extracted from WDI (2019). The governance performance rating follows that of the World Bank where all governance indicators are rated on a scale ranging from -2.5 for weak and 2.5 for strong governance performance.

With reference to the World Bank rating, the result shows that on average sub-Saharan African countries have a minimum, 50% quantile and maximum governance performance of -1.86, -0.86 and 0.67, respectively. Based on this scale, 50% quantile separates between weak and strong governance performing countries in the context of sub-Saharan Africa. Under a weak regime, the institutional quality of countries falling below 25% quantile is very weak. On the other dimension, countries above 75% quantile have very strong governance performance.

Table 4 shows the results of the hypothesis of no threshold effects and the tests to determine the number of thresholds. These estimation procedures were conducted separately for each source of FDI.

Table 4: Test for threshold effects and number of regimes

	Chinese FDI	US FDI	EU FDI	ROA FDI
Test for Single threshold (two regimes)				
F ₁	15.32	12.31	13.93	16.51
P-Value	0.040**	0.060*	0.060*	0.020**
1% critical values	18.09	17.77	15.32	20.51
5% critical values	14.05	13.99	13.94	14.72
10% critical values	12.60	10.48	10.83	11.42
Test for Double threshold(three regimes)				
F ₂	18.63	9.73	9.88	16.19
P-Value	0.020**	0.200	0.180	0.020**
1% critical values	21.64	14.50	16.62	23.43
5% critical values	15.42	12.55	13.87	13.97
10% critical values	13.69	10.68	10.56	11.45
Test for Tripple threshold(four regimes)				
F ₃	12.85			4.04
P-Value	0.560			0.820
1% critical values	36.43			92.08
5% critical values	34.25			79.29
10% critical values	30.17			49.49

Notes: P -values and critical values are computed from 50 bootstrap simulations. F_1 represents the Fisher type statistic associated with the test of H_0 of no threshold against a single threshold. F_2 corresponds to the test of a single threshold against a double threshold and F_3 corresponds to the test of double threshold against a triple threshold. *significant at the 10% level; **significant at the 5% level; ***significant at the 1% level.

The results show that the hypothesis of no threshold effects is rejected across all sources of FDI. For Chinese FDI and FDI from the rest of Asia, the test statistics F_1 are both significant at 5% with corresponding bootstrap p -values of 0.04 and 0.02, respectively. The test statistics F_1 of FDI from US and EU are both statistically significant at 10% with an equal corresponding bootstrap p -value of 0.06. Based on these results, the growth effects of FDI from various sources in Africa is proven to be conditional to institutional quality in the continent. A panel threshold model is thus appropriate with rule of law as the threshold variable.

To determine the number of thresholds, the test statistics F_2 for Chinese FDI and FDI from the rest of Asia are both significant at 5% with an equal corresponding bootstrap p -value of 0.02. The test statistics for a third threshold F_3 are however statistically insignificant implying that two thresholds are appropriate for PTR analysis of these sources of FDI. For FDI from US and EU, the results show that the tests for a second threshold F_2 are statistically insignificant implying that a single threshold is favorable for the PTR analysis of these FDI sources.

Results of the threshold parameter estimates and their respective asymptotic 95% and 99% confidence interval are exhibited in Table 5 below.

Table 5: Threshold parameter estimates

		Point estimate	95% Confidence Level	99% Confidence Level
Chinese FDI	Single threshold	0.206	[0.166, 0.228]	[0.145, 0.228]
	Double threshold	-0.297	[-0.388, 0.251]	[-0.388, -0.251]
US FDI	Single threshold	0.404	[0.364, 0.411]	[0.068, 0.411]
EU FDI	Single threshold	0.202	[0.156, 0.219]	[0.107, 0.218]
ROA FDI	Single threshold	0.206	[0.069, 0.223]	[-0.030, 0.223]
	Double threshold	-0.264	[-0.479, -0.234]	[-0.309, -0.234]

The point estimates relating to Chinese FDI are -0.297 and 0.206 corresponding to World Bank governance performance rating of approximately -1.377 and -0.891 respectively. Table 3 conveys the information that -0.297 lies below the 25% quantile while 0.206 lies slightly below the 50% quantile. For FDI from the rest of Asia, the point estimates are -0.264 and 0.206 corresponding to the governance performance rating of approximately -1.352 and -0.891. The estimates of the latter resemble that of the former and this is not surprising since China is an Asia country. Thus three regimes indicated by the point estimates are those with 'very weak', 'weak' and 'strong' institutional quality.

The results also show that estimated threshold parameters relating to FDI from US and EU are 0.404 and 0.202 corresponding to World Banking governance performance rating of -0.622 and -0.896, respectively. Referring to the position of these parameters from Table 3, we derive that 0.404 falls way above the 50% quantile while 0.202 lies slightly below the 50% quantile. Thus two regimes indicated by the point estimates are those with 'weak' and 'strong' institutional quality. The asymptotic confidence intervals for the threshold are very tight across all the estimations, indicating little uncertainty about the nature of this division.

Table 6 reports the main results of the PTR estimations. The regressions were conducted separately for FDI from China, US, EU and the rest of Asia and the estimates are presented in columns (1)-(4), respectively. Based on the results obtained in Table 4, column (1) and (4) shows estimates derived from a double threshold regression while column (2) and (3) exhibits estimates derived from a single threshold regression model.

Table 6: Fixed Effects PTR Results with FDI from China, US, EU and the rest of Asia.

Dependent Variable: In real GDP per Capita		(1)	(2)	(3)	(4)
Lagged Dep Var		0.748*** (0.036)	0.773*** (0.041)	0.767*** (0.042)	0.765*** (0.042)
In Domestic Investment		0.014*** (0.004)	0.014*** (0.004)	0.014*** (0.004)	0.013*** (0.004)
In Population Growth		0.016 (0.009)	0.009 (0.007)	0.012 (0.009)	0.008 (0.007)
In Natural Resource Rents		0.004 (0.009)	0.005 (0.010)	0.007 (0.009)	-0.004 (0.009)
In inflation		-0.0004 (0.000)	-0.0004 (0.000)	-0.0004 (0.000)	-0.0004 (0.000)
Terms to Trade growth		0.019*** (0.005)	0.021*** (0.005)	0.021*** (0.005)	0.022*** (0.004)
In FDI ROW		-0.176*** (0.038)	-0.146*** (0.047)	-0.132*** (0.037)	-0.164*** (0.031)
In FDI China		0.093 (0.124)			
In FDI US			-0.042 (0.065)		
In FDI EU				-0.083* (0.045)	
In FDI ROA					-0.296* (0.146)
In $FDI^j I_{(j)}$	β_1	0.027 (0.031)	-0.001 (0.019)	0.002 (0.030)	-0.005 (0.029)
	β_2	-0.114** (0.047)	0.060*** (0.017)	0.109*** (0.024)	-0.274*** (0.086)
	β_3	0.122*** (0.026)			0.131*** (0.025)
Observations		340	350	350	350
Countries		34	35	35	35
R-Squared (within)		0.871	0.862	0.866	0.872

Notes: The subscript j denotes FDI from a specific source while $I_{(j)}$ represents the indicator/transition function. For Chinese FDI, β_1 : ($q_{it} < -0.297$), β_2 : ($-0.297 \leq q_{it} < 0.206$) and β_3 : ($q_{it} \geq 0.206$). For FDI from the rest of Asia, β_1 : ($q_{it} < -0.264$), β_2 : ($-0.264 \leq q_{it} < 0.206$) and β_3 : ($q_{it} \geq 0.206$). For US FDI, β_1 : $q_{it} \leq 0.404$ and β_2 : $q_{it} > 0.404$ while for EU FDI, β_1 : $q_{it} \leq 0.202$ and β_2 : $q_{it} > 0.202$. Robust standard errors are in parentheses. *significant at the 10% level; **significant at the 5% level; ***significant at the 1% level.

For the regressions relating to Chinese FDI and FDI from the rest of Asia, the β_1 , β_2 , and β_3 estimated coefficients are associated to the regimes with 'very weak', 'weak' and 'strong' institutional quality, respectively. For the regressions relating to FDI from US and EU, the β_1 and β_2 estimated coefficients correspond to the regimes with 'weak' and 'strong' governance performance, respectively.

4.1 Discussion of the main parameters

The estimated coefficients of β_1 are statistically insignificant across all the sources of FDI. This might be an indication that all the sources of FDI hardly invest in very weak governance performing countries although what could be very weak for EU and US can be mean for China and the rest of Asia. For FDI from China and the rest of Asia, the estimated coefficients of β_2 are negative and statistically significant at 5% and 1%, respectively while of β_3 are positive and highly significant. Thus, the growth effects of FDI from Asia including China are realized in African countries that are above 25% quantile in terms of institutional quality. However, the impact is negative as long as the institutional quality is approximately below the 50% quantile. This finding contradicts the assertion made by Chen et al (2015) that Chinese FDI boost growth on both weak and strong governance countries. The results of this study show that only countries which are above 50% quantile yield positive growth effects of FDI from China and the rest of Asia. Our finding is consistent to the study of Renard et al. (2011) which argued that full benefits of Chinese FDI can be realized if African countries work on improving their institutional quality.

For regressions relating to FDI from US and EU, the estimated coefficients of β_2 are positive and highly significant. Notwithstanding that, the point estimate of the regression relating to FDI from US (0.404) is twice more than of FDI from US (0.202) (see Table 5). Table 3 shows that 0.404 lies far above 50% quantile while 0.202 lies slightly below the quantile. This is an indication that favorable growth outcome of FDI from US can be realized only in strong governance performing African countries whereas FDI from EU enhances growth even in some countries with weak institutions. Precisely, those countries which are slightly below the 50% quantile tend to yield economic growth benefits from EU FDI.

In line with Ayodele et al. (2014) our results show that China do invest in some African countries which EU and US seem to shy away and these are countries associated with weak governance. This finding is indicated by the statistically significant and insignificant estimated coefficients of β_2 for Chinese FDI and; FDI from EU and US, respectively. In addition, the countries falling slightly above 50% quantile are regarded as weak by US. This result is indicated by the position of US FDI threshold point estimate from the 50% quantile. Fortunately, these countries are covered under the benefits coming from the EU and Asia FDIs.

4.2 Discussion of control variables

The results also show that the estimated coefficients of the convergence term, domestic investment, and terms of trade growth are standard relative to literature and highly significant across all regressions. Contrary to theory, the estimated coefficient of population growth is positive albeit statistically insignificant and small. The estimated coefficients of inflation and natural resource rents are very small and statistically insignificant. The estimated coefficients of FDI from the rest of the world separately controlling for all the sources of FDI considered in this study are all negative and highly significant. The estimated coefficients of FDI from China and US are statistically insignificant while those of FDI from EU and the rest of Asia are negative and statistically significant at 10%.

4.3 Robustness checks

We check the robustness of the PTR estimates using 2SLS estimator to account for probable endogeneity arising from specific FDI variables. The regressions are conducted with interaction terms between each source of FDI and rule of law in Africa. The estimated results are presented in Table 7 below. Column (1)-(4) presents the estimated results with respect to FDI from China, US, EU and the rest of Asia, respectively.

Table 7: Fixed-Effects 2SLS results with interaction terms.

Dependent Variable: In real GDP per Capita				
	(1)	(2)	(3)	(4)
Lagged Dep Var	0.726*** (0.056)	0.724*** (0.060)	0.725*** (0.058)	0.733*** (0.058)
ln Domestic Investment	(0.013)** (0.005)	0.012*** (0.004)	0.013*** (0.005)	(0.013)*** (0.005)
ln Population Growth	-0.004 (0.017)	0.010 (0.023)	0.013 (0.019)	0.005 (0.018)
ln Natural Resource Rents	0.002 (0.016)	0.001 (0.017)	-0.004 (0.017)	0.001 (0.017)
ln inflation	0.003 (0.007)	0.003 (0.007)	0.004 (0.007)	0.003 (0.007)
Terms to Trade growth	0.012 (0.008)	0.012 (0.008)	0.013 (0.008)	0.013 (0.009)
ln FDI ROW	-0.062 (0.040)	-0.097 (0.073)	-0.067* (0.042)	-0.070* (0.039)
ln FDI China	-0.211** (0.093)			
ln FDI US		-0.058 (0.112)		
ln FDI EU			-0.039 (0.052)	
ln FDI ROA				0.017 (0.130)
ln FDI ⁱ *ROL	0.028 (0.022)	0.036 (0.031)	0.026 (0.025)	0.030 (0.025)
Observations	252	227	240	244
Countries	42	42	42	42
R-Squared (within)	0.802	0.793	0.802	0.803
Hausman/C test (p-value)	0.000	0.001	0.000	0.001
Hansen test (p-value)	0.965	0.247	0.258	0.457

Notes: The subscript j represents a specific source of FDI. FDI^i*ROL is the interaction term between an FDI from a specific source and rule of law in Africa. Robust standard errors are in parentheses. *significant at the 10% level; **significant at the 5% level; ***significant at the 1% level. In all regressions from column 1-4, specific FDIs are instrumented using their first three lags and the p-values of the Hausman test are <10% implying that 2SLS estimates are preferred to standard OLS fixed-effects estimates. All p-values of the Hansen test are >10% implying that the instruments used are valid.

The results show that only the estimated coefficient of Chinese FDI is negative and significant at 5% while those of other FDI sources are statistically insignificant. In terms of FDI from the rest of the world, the estimated coefficients are negative and significant at 10% only in the regression relating to FDI from EU and the rest of the world. Terms to trade growth estimated coefficient enter the model as expected albeit insignificant across all specifications while other control variables are robust. The estimated coefficients of all interaction terms are statistically insignificant. This result conveys the weakness of using the classical fixed-effects model to investigate the role of institutional quality on FDI-growth nexus.

Despite the noted differences, both the fixed-effects 2SLS and fixed-effects PTR estimators concur on the same conclusion in that the direct impact of FDI from various sources in Africa is either negative or at best

insignificant. This finding reinforces the argument that favorable growth effects of FDI on growth are not automatic rather subject to the institutional quality of the host country (AbuAl-Foul et al. 2014; Jude et al. 2015).

5. Conclusion and recommendations

In line with the growing emphasis on the catalytic role of institutions on FDI-led growth, we associate African countries' heterogeneity to the quality of institutions and show how it can influence the growth effects of each source of FDI in the weak and strong institutions regimes, respectively. For this purpose, we use the PTR model with rule of law as a proxy for institutional quality to 35 sub-Sahara African countries over the period (2003-2012). The sources of FDI considered in this study are China, US, EU and the rest of Asia. Conclusions drawn from our main findings are as follows;

The growth effects of FDI from both China and the rest of Asia are analysed in three regimes with approximately the same threshold parameters. Due to this result, China is bundled together with the rest of Asia. The first regime constitutes of countries with very weak institutional structures and the impact of FDI from Asia on growth of these countries is non-significant. On average, countries belonging to the first regime have a governance performance of at most -1.35. The second regime constitutes of weak governance performing countries ranging between -1.35 and -0.89 on average. The impact of FDI from Asia is deleterious on the economic growth of these countries. The last regime constitutes of strong governance countries, performing above -0.89 on average and these are the countries which claim growth benefits from Asia FDI.

Moreover, the impact of EU and US is unique from that of Asia in two ways. First, their impact on growth in Africa is divided upon weak and strong governance performing countries. Second, their impact of weak governance performing countries is non-significant. Our findings confirm that US and the EU investments' are channelled towards African countries with relatively effective rule of law although the former is more sensitive than the latter. Whereas China do investment both in weak and strong governance countries.

The difference between FDI from the EU and US lies in the threshold required to yield favorable growth outcome in strong governance performing countries. For FDI from US, the threshold point estimate is approximately -0.62 on average compared to -0.90 for EU. Thus FDI from US can enhance growth only in countries with high-quality institutions while EU investment can boost growth starting from countries which are slightly below the 50% quantile. In a nutshell, US is more sensitive to institutional quality than EU and Asia, respectively. We therefore recommend that for African countries to win out of FDI from EU, Asia and US they have to reform their institutions to an average performance rate of at least -0.90, -0.89 and -0.62, respectively.

Another contention yet to be cleared is that Chinese Investment in Africa is earmarked for natural resources. Chen et al. (2015) argue that the motive is indifferent from Western investors. Generally, FDI earmarked for natural resources is considered unhealthy for the host economy due to resource curse (Hayat 2014) however, the threshold of the case is not known. Hence, future researches can look at this aspect and take natural resource factor as a threshold variable.

References

- AbuAl-Foul, B.M. & Soliman, M., 2014. Foreign Direct Investment and LDC Exports: Evidence from the MENA Region. *Journal of Reviews on Global Economics*, 2014, 3, 328-339, 44(2), pp.4-14. Available at: <http://www.tandfonline.com/doi/full/10.2753/REE1540-496X440201>.
- Ayodele, T. & Sotola, O., 2014. China in Africa: An evaluation of Chinese investment. *IPPA Working Paper Series*, pp.1-20. Available at: http://www.ippanigeria.org/china_africa_working.pdf.
- Bassanini, A. & Scarpetta, S., 2001. The driving forces of economic growth: panel data evidence for the OECD countries. *OECD Economic Studies*, 33(33), pp.9-56. Available at: <http://hal.archives-ouvertes.fr/halshs-00168383/>.
- Davies, R.B., 1987. Hypothesis testing when a nuisance parameter is present only under the alternative. *Biometrika*, 74(1), pp.33-43. Available at: <http://robertnz.com/pdf/nuisance2.pdf>.

- Gonzalez, A., Teräsvirta, T. & Van Dijk, D., 2005. Panel Smooth Transition Regression Models. *Quantitative Finance Research Centre, Research Paper 165*, (August), p.34.
- Hansen, B.E., 1996. Inference when a nuisance parameter is not identified under the null hypothesis. *Econometrica*, 64(2), pp.413–430.
- Hansen, B.E., 1999. Threshold effects in non-dynamic panels : Estimation , testing , and inference. *Journal of Econometrics*, 93, pp.345–368.
- Hayat, A., 2014. FDI and Economic Growth : The Role of Natural Resources Arshad Hayat. *IES Working Paper: 36/2014*. Available at: https://mpra.ub.uni-muenchen.de/60781/1/MPRA_paper_60781.pdf.
- Jude, C. & Levieuge, G., 2015. Growth Effects Of FDI In Developing Economies: The Role of Institutional Quality. *Banque De France Eurosystem*, (559).
- Li, T.Y. & Hook, L.S., 2014. FDI and Growth : The Role of Institutional Quality. *ISSN: 2231-962X*, 9, pp.582–588.
- Mankiw, N., Romer, D. & Weil, D., 1992. A contribution to the empirics of economic growth. *Quarterly Journal of Economics*, 107, pp.407–38.
- McMillan, M. & Harttgen, K., 2014. What is driving the ‘African Growth Miracle’? *Working Paper Series: African Development Bank Group*, (209). Available at: <http://www.nber.org/papers/w20077.pdf>.
- Morrissey, O. & Udomkerdmongkol, M., 2012. Governance, Private Investment and Foreign Direct Investment in Developing Countries. *World Development*, 40(3), pp.437–445.
- Neuhaus, M., 2006. *The impact of FDI on economic growth: An analysis for the transition countries of central and Eastern Europe* M. Miller, Werner A., Bihn, ed., London NW1 9NB: Physica-Verlag A Springer Company.
- North, D., 1990. *Institutions, Institutional Change and Economic Performance*, Cambridge, MA: Cambridge University Press.
- Peres, M., Ameer, W. & Xu, H., 2018. The impact of institutional quality on foreign direct investment inflows: evidence for developed and developing countries. *Economic Research-Ekonomska Istraživanja*, 31(1), pp.626–644. Available at: <https://www.tandfonline.com/doi/full/10.1080/1331677X.2018.1438906>.
- Renard, M. & John, C., 2011. 2011-Chinese FDI & Trade in Africa pp38. *Working Paper Series: African Development Bank*, (126). Available at: <http://citeseerx.ist.psu.edu/viewdoc/download?doi=10.1.1.360.7493&rep=rep1&type=pdf>.
- Rodrik, D., 2014. An African growth miracle? *NBER WORKING PAPER SERIES*, (20188), pp.2–33. Available at: <https://www.nber.org/papers/w20188>.
- Su, Z. & Ado, A., 2016. China in Africa: a critical literature review. *critical perspectives on international business*, 12(1). Available at: https://www.cepci.hei.ulaval.ca/sites/cepci.hei.ulaval.ca/files/china_in_africa_-_a_critical_literature_review.pdf.
- Unisa Yusufu, K., 2013. Foreign Direct Investment and Growth in Sub-Saharan Africa What are the Channels? Available at: http://www2.ku.edu/~econ/people/documents/Kamara_2013_000.pdf.

Notes

Note1: Results of the pairwise correlation matrix are not presented in this paper however they can be made available on request.

The Impact of Macroeconomic Variables, Investment Incentives and Government Agreements on FDI Inflows in Ghana

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Abstract

The last two decades have witnessed an extensive growth and an ever-increasing competition in foreign direct investment (FDI) flows to the developing countries. This has resulted in higher investment incentives offered by the host governments and an increase in the number of bilateral investment treaties (BITs) and regional agreements on investments. This research addresses the effectiveness of selective government policies and investment agreements in attracting FDI flows in developing countries. To achieve this, the impact of economic variables such as presence of infrastructure, cost of labor, annual gross domestic product (GDP) growth, real effective exchange rate, and tax incentives as well as bilateral investment treaties on the inflows of foreign direct investment within a 30-year span in Ghana was examined. The paper employed a regression analysis with the dependent and independent variables being FDI inflows and the listed variables respectively. Additionally, analytical techniques such as heteroskedasticity and Chou test were conducted. From the study, it is observed that inflows of FDI vary within the structural break analyzed and a low percentage of BITs reflect as a contributing factor of FDI. However, national policies proved to play a significant role in attracting FDI into Ghana.

Keywords: Foreign Direct Investment, Selective Government Policies, Bilateral Investment Treaties

1. Introduction

Capital flows, more especially foreign direct investment (FDI), are one of the major instruments of globalization and international integration of developing countries. There have been tremendous improvements in international trade and according to the World Investment Report, FDI flows in 2013 increased to \$1.45 trillion, with developing countries increasing their share of inflows to (a record level of) 54 percent. This trend in the evolution of foreign inflows has heightened the debate about the main factors influencing the inward investment and how these variables can be tapped and harnessed to maximize inflows in regions. The role of foreign direct investment in the growth process has for long been a topic of intense debate. Although this debate has provided

rich insights into the relationship between FDI and growth, there is still more room for empirical analysis to examine the causal factors of FDI inflows.

There have been empirical evidences of macro and micro determinants of foreign direct investment inflows in various regions and sectors and rising level of attractiveness of different countries and geographical locations. Developing countries, especially Ghana, are more open to embracing investments in their countries seeing the promising graphs and figures and the potential that inflows can serve the nation and aid in economic balance and stability. With this, tariffs and restrictions previously faced by foreign investors have been replaced by various investment incentives. These stand to pave a way for tariff-free and fair trade amongst investors and host countries. Also emerging are the various bilateral and multilateral investment treaties, which seek to protect and promote FDI, signed between the host government and other countries. All this is to strengthen the trade and increase inflows of FDI in Ghana.

A plethora of evidence and empirical research on the inflows of FDI in Ghana study the relationship between FDI and economic growth using parameters Gross Domestic Product(GDP), GDP growth rate, GNI, Manufacturing Value Added, External Debt Stock, Inflation, Trade, Industry Value-added and Foreign Direct Investment net inflows as percent of GDP (FDI ratio) combining qualitative and quantitative methods. Other studies also determine the macroeconomic factors that influence foreign direct investment inflows to Ghana using co-integration analysis. In this it was found that exchange rate and trade openness were statistically significant. FDI inflows as indicated by many researchers. (Onyeiwu & Shrestha, 2004), (E. J. W. e. Asiedu, 2006; Hailu & Finance, 2010; Sekkat & Veganzones-Varoudakis, 2007), found that FDI flows into Africa are negatively correlated with the level of inflation including many other papers each using macroeconomic parameters or other vectors such as investment incentives as a measure of FDI in Ghana.

Until recently, there was a strong consensus in the literature that multinational corporations (MNCs) invest in specific locations mainly because of strong economic fundamentals in the host countries for example, large market size, stable macroeconomic environment etc.(Dunning & Narula, 2003; Globerman & Shapiro, 1999; Shapiro & Globerman, 2001). However with growing consensus and integration of FDI and increased competition amongst host countries in attracting FDI inflows, one may decide to review the literature that focuses more on the macro economic variables considered when measuring the ability of a country to attract investments to a more complex outlook which does not only involve economic determinants but also government incentives that is national policies as well as bilateral, regional and multilateral agreements in the determination of FDI inflows in a particular region. This begs one to revisit and reconsider the underlying literature on determinants and impacts of inward FDI in the country Ghana.

(Brewer, 1993) discusses the array of government policies that can directly and indirectly affect FDI through their effects on market imperfections. It is realized there that some policies implemented by the governmental institution could either serve as increase or decrease to the attractions of FDI. It is also found that empirical evidence on the impact of selected governmental policies on FDI is difficult to quantify or at times considered ambiguous (Driffield & Taylor, 2000; Grubert & Mutti, 1991; Kumar & Pradhan, 2002; Loree & Guisinger, 1995) find a positive effect of investment incentives and a negative impact of performance requirements imposed by the host governments on inward FDI flows. (Review, 1996) reports that incentives can have an effect on attracting FDI only at the margin, especially when one considers the type of incentive and the type of project.

However, some studies e.g., (Contractor, 1991), finds that policy changes have a weak influence on FDI inflows. (Alfaro, Chanda, Kalemli-Ozcan, & Sayek, 2004; Vilella & Barreix, 2002) conclude that incentives are generally ineffective once the role of fundamental determinants of FDI is taken into account. This view is also supported by (Hoekman & Saggi, 2000) who conclude that although useful for attracting certain types of FDI, incentives do not seem to work when applied at an economy-wide level. In a recent paper, (Nunnenkamp, 2002) argues that little has changed since 1980s and traditional market-related determinants are still dominant factors attracting FDI. Further, (Blomström, Kokko, & Mucchielli, 2003) have discussed whether FDI incentives are justified for the host economies given the fact that this entails a transfer of resources from host countries to foreign firms

reexamines the effects of government policies on market imperfections and foreign direct investment (FDI). It broadens and refines the analysis of the impact of government policies (Brewer, 1993).

A fraction of empirical research has also come out with the importance of openness to trade as well as regional and bilateral agreements to the attraction of FDI inflows. (Neumayer & Spess, 2005) provide quantitative evidence that a higher number of bilateral investment treaties (BITs) raise the FDIs that flows to a developing country. (Büthe & Milner, 2008) argue that international trade agreements (GATT and WTO) and preferential trade agreements (PTAs) reassure investors and increase investment. Studies like (Globerman & Shapiro, 1999) find that Canada U.S. Free Trade Agreement (CUFTA) and North American Free Trade Agreement (NAFTA) increased both inward and outward FDI. (Blomström et al., 2003) separate the effects of regional trade agreements (RTA) along two dimensions, i.e., the indirect effect on FDI through trade liberalization and the direct effects from changes in investment rules connected with the regional trade agreements.

This study seeks to add to the existing literature on the determinants of FDI inflows in the country Ghana by empirically examining not only the already used macroeconomic variables in previous literature but also seeks to combine the governmental policies that is the selected investment incentives as well as regional and bilateral investment treaties. This helps gives a broader perspective as well as a comprehensive analysis on the factors affecting FDI inflows in Ghana. It also seeks to compare inflows of FDI between the 1990s and the 2000s as well as reasons for inflow or decline in attracting investors.

2. Additional Determinants of Foreign Direct Investment

2.1 Bilateral Investment Treaties And Foreign Direct Investment

It can be seen that over the past few years, world trade has been almost replaced by foreign direct investment. Since this is yielding to be a major source of funds especially for developing countries, the flow of FDI has grown at twice the pace more than worldwide trade. By the early 1990s, the sales of worldwide exports would be eclipsed by the sales of foreign affiliates of Multinational firms (Ali, Fiess, & MacDonald, 2010; Habib & Zurawicki, 2002). Gradually, in 2003, FDI was the largest component of the net resource flows to developing countries, and this is bound to remain the case for some time to come (Bartels, Napolitano, & Tissi, 2014) Indeed, FDI inflows per unit of GDP are much higher in many developing countries than in developed ones (E. J. W. d. Asiedu, 2002). This led to the introduction of BITs and in light of its importance to FDI especially in developing countries like Ghana, there is a need to empirically study the relationship these two variables have and how one can adversely affect the other.

The appearance of the first Bilateral Investment Treaties (BITs) could be traced back to the late 1950s, others trace it back to the treaties of friendship, commerce and navigation. It was not until a century later that the first research was conducted by the UNCTAD and World Bank to access how effective BITs are in attracting foreign investment. Later there was an outburst of various literatures each espousing on uncovering the relationship and causal link between BITs and foreign investment, each work building on previous works of other researchers. Ghana, being a member of the Multilateral Investment Guarantee Agency of the World Bank, has over the years signed various investment treaties with many countries all over the world. Additionally, the Government of Ghana has entered into Bilateral Investment Promotion and Protection Agreements, as well as Double Taxation Agreements with a number of countries to further enhance the protection and security of the investment regime. One of Ghana's first agreement to sign was with its formal colonizer, The United Kingdom of Great Britain and North Ireland on 22nd March 1989, the agreement entered into force in 1991. The Ghana- United Kingdom investment treaty was designed to create favorable conditions for greater investments by nationals and companies of one state in the territory of the other State. This led to further agreements being signed between the Republic of Ghana and the Kingdom of Netherlands, the Republic of China, the Swiss Confederation, Federal Republic of Germany, Republic of France and the Federation of Malaysia all between 1989 – 1997. It should be noted that some of these agreements have been signed but yet to be entered into force.

2.2 National Investment Policies and Foreign Direct Investment

Ghana, like many developing African countries, is abundant in natural resources, deposits of mineral wealth, a good supply of agricultural land suitable for agricultural production, forest resources, marine and fresh water fish stocks, and a good potential for hydroelectricity generation. With an internal market of around 18.3 million, people and the potential of an extended market as trade barriers in West Africa are systematically being dismantled through integration of individual states into the Economic Community of West African States (ECOWAS), the natural assets collectively constitute an important attraction for inward FDI. Yet, during the 1980s, Ghana attracted a relatively negligible amount of FDI (Afriyie & investment, 1998). This points to the fact that, although natural resources play an important role in FDI inflow, if Ghana is to attract FDI on the scale needed it must offer foreign investors new sources of competitive advantage rather than a reliance on natural resources alone. It is against this background I undertake this research to access other potential allies Ghana can uncover to improve FDI Inflows. The government of Ghana has provided a variety of investment incentives for foreign investors. These include tax holidays, capital allowances, locational incentives, customs duty exemptions and other inducements.

The general aim of investment incentives is to influence the locational decisions of investors and thus to reap the positive effects of foreign direct investment (FDI). Investment incentives may also be provided to shape the benefits from FDI by stimulating foreign affiliates to operate in desired ways. It also serves to direct them into regions or industries considered in need of investment. An example can be seen in investment incentives referred to as grants to locally based companies for investing in advanced technologies or to subsidies to foreign firms investing in the locality.

As part of investment incentives offered by the government of Ghana under the Ghana Investment Promotion Centre, also created was the Ghana Free Zones Board (GFZB) established on 31st August, 1995 by an Act of Parliament the Free Zone Act, 1995 (Act 504) - to enable the establishment of free zones in Ghana for the promotion of economic development and also to provide for the regulation of activities in free zones and for related purposes. The implementation of the Programme actually commenced in September 1996.

The main objective of the Programme is the promotion of economic development through, attraction of Foreign Direct Investments; creation of employment opportunities, increasing foreign exchange earnings; provision of business opportunities for foreign and local investors to undertake joint venture, enhancement of technical and managerial skills/expertise of Ghanaians and also promotion of the transfer of Technology and diversification of exports. However, with the increasing pressures of globalization induced competitiveness, the locational advantages based on only the economic conditions may not be able to sustain their strength of attracting FDI. Possessing the principal determinants may not be sufficient for the host countries, as improving efficiency in international production becomes one of the major goals of FDI. This is made possible by the rising international division of labor and international production networks. Recently, studies have brought out the need for improving and sustaining locational advantages in the host countries by the active role played by the governments of the host countries. The focus therefore has now shifted to government policies in addition to economic conditions as a determinant of FDI.

In recent years, international investors have been aided by the growth of investment treaties. It serves as a binder between the host country to treat all foreign investors from the home country in ways that will protect their investments and that give them either parity with or advantages over domestic investors. The preambles of various literature on BITs state that the main focus of signing such treaties is to improve the inflow of FDI in host countries, and undoubtedly most government officials in developing countries perceive that notion thus serves as a motivation for them to engage in such agreements. But do these treaties fulfil that purpose and attract more FDI to developing countries that submit to the obligations of the BITs? This study seeks to find out exactly how the signing of these investment incentives have contributed to the growth and development of FDI inflows in the Republic of Ghana.

3. Methodology

3.1 Variables and Data Source

The sources of data for this study are World Development Indicators of the World Bank (databank.worldbank.org), United Nations Conference on Trade and Development (UNCTAD) Investment Policy Review of Ghana and the Ghana Investment Promotions Centre Laws and Regulations, Executed and Ratified BITs between Ghana and other countries.

3.2 Model Specification

$$FDI_t = \beta_1 + \beta_2 ATE_t + \beta_3 WSW_t + \beta_4 GDP_t + \beta_5 REER_t + \beta_6 TI_t + \beta_7 BIT_t + U_t \dots \dots \dots (1)$$

Eq (1) shows the factors influencing FDI in Ghana. The independent variables used in this study are listed in Table 1. The dependent variable in the present study is (FDI) Inflow of Net Foreign Direct Investment. It is hypothesized that all the predicting variables will have a significant positive effect on the dependent variable.

Table 1: List of independent variables

Dependent Variable	Variable
<i>GDP Growth (Annual %)</i>	Gross Domestic Product
<i>WSW</i>	Waged and Salaried Workers
<i>ATE</i>	Access to electricity
<i>REER</i>	Real effective Exchange rate
<i>TI</i>	Tax Incentives
<i>BIT</i>	Bilateral Investment Treaties
<i>B</i>	Coefficients

The model is a time series estimated from the period 1989- 2018. It makes use of time series data spanning for thirty years. The impact of the economic fundamentals is estimated with variables such as the availability of infrastructure, cost of labor, gross domestic product and real exchange rate. These are all variables used by previous literatures in the determination factors affecting inflows of FDI in various regions. The impact of the selected national investment incentives as well as the bilateral agreements signed between Ghana and other countries are examined. We now discuss in detail the methodology adopted and variables selected with the above-specified model along with data source.

3.2 Expected Relationships

3.2.1 Economic Fundamentals as determinants of FDI

Overall economic policy helps in strengthening the fundamentals of the economy. There are various sources of literature that have analyzed and examined the determinants of FDI in various regions. Drawing on the vast literature on economic fundamentals, we employ the availability of infrastructure, cost of labor using the access to electricity and wage of salaried workers as a proxies respectively. Also used in this paper is the gross domestic product as well as the real exchange rate. Studies have found market variables, quality of human capital, macro-economic stability, financial health and infrastructure availability in the economy to have a positive impact while cost variables (e.g., labor cost, energy cost) are expected to be negatively related to FDI inflows (Welfens, 1994). The definitions of the above variables along with their expected signs as inferred from the literature and the sources of data are explained below;

1. Availability of infrastructure

It is perceived according to various papers that the higher the availability of infrastructure lower is the infrastructure costs and higher is the ability of the host country to attract FDI. However, different studies

have used different measures to capture the availability of infrastructure. Some of the variables employed are land and property rents, index of infrastructure, and transportation costs among others. We use one variable here, that is, access to electricity available to the population to illustrate the availability of infrastructure, it being availability of electricity. Other literature employs the energy production (equivalent tonnes of coal per 1000 population). Due to lack of data for that we employ the other variable, availability of electricity to the population.

2. Cost factors

Factors that cause investment cost differentials across countries are categorized as Cost factors. These include cost of labor, cost of capital and infrastructure costs. Cost Factors may significantly influence the choice of an investment location for the resource seeking and efficiency-seeking FDI. To capture cost of labor and availability of skilled labor we use waged and salary rate of workers. This helps shed more light on the amount of monies foreign investors are expected to spend per worker as they employ and start business operations. It gives an estimated front on how to budget for the salaries of workers as well as the total number of people needed depending on the type of business being ventured into. We expect lower real wages of salaried workers in the host country to attract inward FDI. The real value for waged and salaried workers is employed in this model. This is calculated by the author by combining the nominal value of waged and salaried workers with the GDP deflator which was also manually calculated by the author and multiplied by 100. This is done for the duration of thirty years, that is, from years 1989 to 2018. The base year for the calculation was the year 2010.

3. Real Exchange Rate

There is mixed evidence on the impact of depreciation of real exchange rate in the host country on FDI inflows. Foreign investors may gain or lose from a devalued exchange rate. They may gain due to larger buying power in host countries. Also, they can produce more cheaply and therefore export more easily. This may, therefore, attract resource seeking and efficiency-seeking FDI. However, foreign firms may not enter if they believe that depreciation may continue after they enter a country as this would imply costs to be too high to justify their investments (Treviño & Mixon Jr, 2004). We expect devalued exchange rate to encourage inflow of FDI in the host countries, as this would reduce the cost of investment to the foreign firms.

3.2.2 National FDI investment policies

The National FDI policies that attract foreign investors into a host country have assumed greater importance in this liberalized regime. However, as observed by (Globerman & Shapiro, 1999) it is quite cumbersome to statistically examine the impact of FDI-specific policies like incentives offered and removal of restrictions on the operations of foreign firms, since they are hard to isolate from other factors, "often because they are more implicit than explicit". Another of the difficulties in empirically examining the impact of these policies is the difficulty in quantifying these policies. Studies that have empirically tested for the impact of government policies on FDI flows are generally based on benchmark surveys at a point of time (E. J. W. d. Asiedu, 2002) or they observe the impact for a particular country over a period of time. There are two main categories of FDI incentives offered by developing countries to attract FDI inflows.

First are fiscal incentives, i.e., policies that are designed to reduce tax burden of a firm; and second is financial incentives, i.e., direct contributions to the firm from the government (including direct capital subsidies or subsidized loans). Fiscal incentives include tax concessions in the form of reduction of the standard corporate income-tax rate; tax holidays; accelerated depreciation allowances on capital taxes; exemption from import duties; and duty drawbacks on exports. Financial incentives include grants; subsidized loans and loan guarantees etc. This study focuses on the fiscal incentives offered particularly pertaining to tax incentives offered by host country. Tax Holidays; A zero score is allotted in period, if no tax holidays are declared. If tax holidays are declared for five or more years a score of two is allotted and if it is less than five years a score of one is allotted. The role of incentives in attracting FDI has been questioned on theoretical as well as empirical grounds as discussed earlier. The results with respect to impact of incentives offered by host countries to inward FDI are

ambiguous in nature. Several studies with respect to incentives find that fiscal incentives do affect location decisions, especially for export oriented FDI, although other incentives seem to play a secondary role. However, fiscal incentives appear unimportant for FDI that is geared primarily towards the domestic market; instead such FDI appears more sensitive to the extent to which it will benefit from import protection. However, as discussed earlier, incentives must be viewed as a package and this requires a more nuanced view. The impact of incentives on inward FDI flows is expected to be positive.

3.3 International FDI policy

3.3.1 Bilateral Investment Treaties

In contrast to the number of trading agreements, there are very few investment agreements that exist. However, there has been a substantial increase in number of bilateral investment treaties (BITs) that have been signed and brought to force in the last two decades and particularly in the 1990s. Ghana is a member of the Multilateral Investment Guarantee Agency (MIGA) of the World Bank, which provides investment guarantees against non-commercial risks for investments in developing countries. Additionally, the Government of Ghana has entered into Bilateral Investment Promotion and Protection Agreements (IPPAs), as well as Double Taxation Agreements with a number of countries to further enhance the protection and security of the investment regime. An important characteristic of

BITs is a considerable uniformity in the broad principles underlying the agreements (Bende-Nabende, Ford, Santoso, & Sen, 2003), coupled with numerous variations in the specific formulations employed. BITs generally recognize the effect of national law on FDI and accept the right of governments to regulate entry of FDI. The study examines empirically the impact of total number of BITs signed by a country in a particular year on FDI flows. Many BITs have been signed between the government of Ghana and other countries but just a few have been ratified and enforced. For the purpose of study and data acquisition, the number of treaties signed, regardless of being ratified or not, were used in the data collected.

4. Results

In order to estimate the impact of economic fundamentals, national and international FDI policy on FDI inflows, the paper employs regression analysis making use of time series data. Where FDI is the dependent variable and access to electricity, waged and salaried workers, gross domestic product, real exchange rate, tax incentives and bilateral investment treaties are independent variables.

Table 2: Summary of Variables

Variable	Obs	Mean	Std. Dev.	Min	Max
year	30	2003.5	8.803408	1989	2018
accesstoel~y	30	45.65679	22.04004	0	79.3
realeffec~20	30	105.2392	33.08016	0	161.5889
taxincenti~s	30	1.866667	.3457459	1	2
bilateralis	30	.7333333	1.25762	0	5

wagedandsa~e	30	27.44922	13.40292	0	53.33306
fdiinflows~s	29	1.20e+09	1.20e+09	3.03e+07	3.15e+09
gdpgrowtha~1	30	5.219921	2.593947	0	14.04712

The summary of the variables in the Hypothesized models are presented in Table 1. It shows the central tendencies of the variables presented in the number of total observations employed in this theorized model, the averages of the various variables, their respective standard deviation errors, the minimum observation as well as the maximum observations.

4.1 Correlation Matrix

The pairwise correlation in table 3 shows the number of observations that were used in the correlation.

Table 3 Correlation Matrix
(obs=29)

	year	access~y	reale~20	taxinc~s	bilate~s	wageda~e	fdiinflows	gdpgr~1
year	1.0000							
accesstoel~y	0.6923	1.0000						
realeffec~20	-0.8539	-0.6445	1.0000					
taxincenti~s	-0.4466	-0.0030	0.3265	1.0000				
bilateral~s	-0.3660	-0.3527	0.3427	0.1156	1.0000			
wagedandsa~e	-0.1304	0.0338	-0.2075	0.1676	0.0105	1.0000		
fdiinflows~s	0.8794	0.6099	-0.6893	-0.4662	-0.3366	-0.3641	1.0000	
gdpgrowtha~1	0.3716	0.1309	-0.1652	-0.0111	-0.1742	-0.2269	0.4551	1.0000

The table below reflects the Pearson coefficient value for each variable, the significance value and the sample size in the data set. In this data set we have no missing values therefore all correlations are based on all 29 observations. In principle correlation between any variable and itself is always 1. Correlation of a construct against another predicting variable in principle should not be more than 0.7 to avoid the problem of multicollinearity amongst the predicting constructs. In the same regard a predicting variable in theory should be predictive of the dependent variable at least 0.3 but preferably 0.7 and above to indicate a good fit of the model. The output between real effective exchange rate and access to electricity indicate a good model fit as predictors with their correlation not indicating a likelihood of multicollinearity problem, as well as real effective exchange rate and FDI inflows which is the dependent variable employed in the model. However, the output reflects that there is an inverse correlation between some of the constructs. This however is possible and acceptable in theory and principle.

4.2 Regression Analysis

Table 4 Regression Analysis

Source	SS	df	MS	Number of obs = 29		
Model	3.4922e+19	6	5.8203e+18	F(6, 22) =	22.45	
Residual	5.7044e+18	22	2.5929e+17	Prob > F =	0.0000	
Total	4.0626e+19	28	1.4509e+18	R-squared =	0.8596	
				Adj R-squared =	0.8213	
				Root MSE =	5.1e+08	

fdiinflowsrealvalues	Coef.	Std. Err.	t	P> t	[95% Conf. Interval]	
accesstolectricity	1.76e+07	6650337	2.64	0.015	3765424	3.13e+07
Realeffectiveexchang	-1.99e+07	5680956	-3.51	0.002	-3.17e+07	-8159933
taxincentives	-9.94e+08	3.64e+08	-2.73	0.012	-1.75e+09	-2.39e+08
bilateralinvestmentt	230791.2	8.27e+07	0.00	0.998	-1.71e+08	1.72e+08
Wagedandsalariedwork	-3.50e+07	8683952	-4.03	0.001	-5.30e+07	-1.70e+07
gdpgrowthannual	1.26e+08	4.22e+07	3.00	0.007	3.90e+07	2.14e+08
_cons	4.74e+09	9.31e+08	5.09	0.000	2.81e+09	6.67e+09

The times series data employed here with the data series spanning from 1989 to 2018 covering a period of 30 years. The R- Squared for the model is estimated at 85.96 % and adjusted R-squared 82.13%. All source of

funds has a positive effect on inflows of foreign direct investment with the exception of bilateral investment treaties.

Wage of salaried workers are found to be statistically significant from results adhered from the model. As employment decreases, the level of wage cost in a particular country would also be drastically affected. Inexpensive labor force is decisive in stimulating and attracting FDI inflows in a particular country. Hence this would attract more FDI inflows as some investors and foreign firms would prefer investing in a country which has a relatively low wage cost. Real effective exchange rate also has a statistically significant effect on FDI inflows in Ghana with a t- value of -3.51 which is above the accepted critical t- value of 2.00 which makes economic sense.

The results are consistent with the proposition that a diminished currency value is associated with greater FDI inflows. This is because a depreciated currency value would lead to higher relative wealth position of foreign investors and hence lower the relative cost of capital. This allows foreign investors to make a significantly larger investment in terms of the domestic currency. A long-run negative semi-elasticity of greater than one is found in all models. The results support the findings of (Ang, 2008; Azrak & Wynne, 1995).

The Adjusted R-squared of 0.8213 indicates that the model explains 82% of the extent to which a change in the annual growth of GDP of Ghana can influence a change in its inflows of FDI. The evidence also points to the importance of developing the infrastructure base, a result that conforms to the general consensus see (E. J. W. d. Asiedu, 2002; Deichmann, Karidis, & Sayek, 2003). From the table, the analysis suggests that investors are attracted to a higher GDP growth rates in Ghana.

Specifically, the results indicate an absolute t- value of 3.00 which signifies a higher critical t-value of 2.00. Indicating that, a 1% increase in gross domestic product will lead to about 0.99% increase in inward FDI. The evidence suggests that strong economic growth remains a necessary condition for Ghana to attract FDI inflows. The results are in line with the general findings of the literature, including (Billington, 1999; Choi, 2003; Wang & Swain, 1995), which have consistently found a positive role of GDP growth rate. The provision of infrastructural support could raise the productivity of capital, and expand the overall resource availability by increasing output.

FDI inflows react positively to tax incentives or tax-free holidays. With a t-value of 2.73 which is above the critical value of 2.00. There is an inverse relationship that exists between inflows of FDI and tax incentives and national policies offered by a country. The results are in line with the argument that increasing the amount of tax incentives in Ghana is an effective policy instrument to boost inward FDI.

Similar results are also obtained by (Billington, 1999; Choi, 2003; Fedderke & Romm, 2006; Wang & Swain, 1995) Various studies show that incentives play a minor role in attracting FDI once the impact of economic fundamentals are controlled for. The variable bilateral investment treaties had a t- value 0.00 according to the model indicating its inability to have an effect on FDI inflows in Ghana.

4.3 Heteroskedastic Test

The Breusch- Pagan test for heteroskedasticity was tested using the fitted values of the model. It was found to have a constant variance and variables fit values of inflows of FDI. The chi square value was not significant at 0.48 with a p-value of $p < 0.4884$ which is less than the appropriate threshold therefore rejecting the alternative hypothesis of heteroskedasticity and homoscedasticity assumed.

Table 5 Outreg of Coefficient estimates

Fdirealvalues	
accesstoelectricity	17,557,379.703 (2.64) *
realeffectiveexchangerateindex20	-19,941,514.816 (3.51) **
taxincentives	-994,037,142.049 (2.73) *
bilateralinvestmenttreaties	230,791.178 (0.00)
wagedandsalariedworkersrealvalue	-35,016,892.230 (4.03) **
gdpgrowthannual	126,473,497.557 (3.00) **
_cons	4740898990.257 (5.09) **
R2	0.86
N	29

* p<0.05; ** p<0.01

From the table above, FDI net inflows is the dependent variables with the other variables listed below as the independent variables. The number of observations is 29 although a time series of 30 years was employed. Waged and Salaried workers has the highest t value of 4.03 with two asterisks indicating its p value greater than 0.01. This is followed by Real effective exchange rate and GDP annual growth percentage with t values as 3.51 and 3.00 respectively with a p value of p<0.01 significance levels. This gives a general tabulated summary of results of the regression analysis conducted.

Table 6 Chou- Test: To Test Structural Break

Source	SS	df	MS	Number of obs =	28
Model	3.3621e+19	6	5.6035e+18	F(6, 21) =	21.06
Residual	5.5889e+18	21	2.6614e+17	Prob > F =	0.0000
				R-squared =	0.8575
				Adj R-squared =	0.8167
Total	3.9210e+19	27	1.4522e+18	Root MSE =	5.2e+08

fdiinflowsrealvalues	Coef.	Std. Err.	t	P> t	[95% Conf. Interval]
accesstoelectricity	1.55e+07	7405828	2.10	0.048	130248.8 3.09e+07
Realeffectiveexchang	-2.09e+07	5953158	-3.52	0.002	-3.33e+07 -8563831
taxincentives	-9.36e+08	3.80e+08	-2.47	0.022	-1.72e+09 -1.46e+08
Bilateralinvest	5.13e+07	1.14e+08	0.45	0.658	-1.86e+08 2.89e+08
Wagedandsalariedwork	-3.96e+07	1.12e+07	-3.53	0.002	-6.30e+07 -1.63e+07
gdpgrowthannual	1.25e+08	4.28e+07	2.92	0.008	3.62e+07 2.14e+08
_cons	4.96e+09	9.98e+08	4.97	0.000	2.88e+09 7.03e+09

The table above shows the structural break of inflows of FDI as well as other variables for the years greater than or equal to 1990; 1990 inclusive. It can be observed that the in comparison to the other regression analysis described in table 3, the number of observations is 28 and the R-Squared is 85.75% and Adjusted R-Square as 81.67%, the previous analysis recorded its R-Squared at 85.96% and Adjusted R-Square at 82.13%. This indicates that within the years after 1989, FDI inflows in Ghana appreciated according to this model. Looking at the independent variables also, waged and salaried workers, real effective exchange rate, total annual gross domestic product, access to electricity and tax incentives still remained significant with -3.53, -3.52, 2.92, 2.10 and -2.47 t- values at a significant level of 2.00. Waged and salaried workers as well as Tax incentives and real effective exchange rate show an inverse relationship between it and FDI inflows, indicating that with the growth of one lead to an increase in the other. This reflects the same results as that of the previous regression run taking the significance of variables into consideration. Bilateral Investment Treaties however shows an insignificant value of 0.45, although this is a higher value as compared to the first regression analysis run. During past times in Ghana, the launching of the Economic Recovery Program in 1983 sought to arrest the general decline; that is when many determinants of FDI was falling behind, leading to investors pulling away from Ghana. From 1984 onwards, there was a turn-around in the economy, with growth averaging 5% per annum up to 1991. Indeed, by the mid-1980s the economy could be described as having been stabilized. The threats to political stability were

also brought under control. An Investment Code was promulgated in 1985, aimed at establishing an enabling environment, especially for foreign direct investment. The new policy framework, together with a reasonable degree of political stability, led to a renewal of FDI flows, especially in the mining sector, by the late 1980s. The Structural Adjustment Programme (SAP) loans to the sector, with Ashanti Goldfields Company (AGC) the principal beneficiary. Evidence shows that government policy initiatives under the ERP/SAP, especially the revision of the Investment Code, were partly responsible for the increased FDI flows in the mining sector (Tsikata,1995). Gold has now taken the place of cocoa as the country's 3rd largest foreign-exchange earner.

By 1992, the pace of economic growth began to slacken, owing to a huge budgetary deficit therefore in a bid to restore the trend, remedial policies were initiated to create an enabling environment for medium- and long-term growth. More specifically, in its Ghana: Vision 2020 (1996-2000). The urgency of the government's FDI agenda led to a re-assessment of the 1985 Code, embedded in the 1994 Investment Act which led to the set up the Ghana Investment Promotion Centre (GIPC) as an aggressive promotion body. So far, the Centre has recorded modest success. Up to 1998, it had registered 735 companies, 506 are them joint ventures, involving total investment outlays of US\$989 million, and 229 wholly foreign-owned projects. The investments are expected to generate a total employment of around 43,000 (GIPC1998). 1993-1996 it was a period of significant, but oscillatory, inflows which peaked in 1994 at \$233 million, fell by more than 50% (\$107) million in 1995, and rose again to \$120 million in 1996. The period average was slightly above \$146 million. There were indications (Ghana Investment Promotion Centre and the Minerals Commission, March, 1998) that the upward trend might continue. Thereafter FDI increased substantially, reaching a peak of \$233 million in 1994.

Figure 1 Scatter diagram showing FDI net inflows if year is ≥ 1990

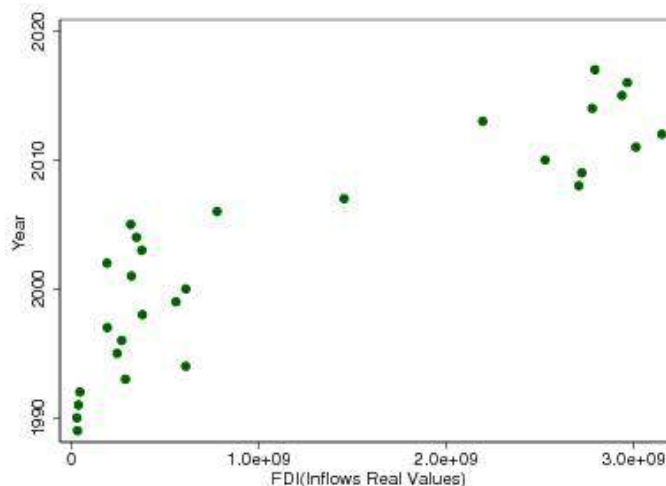


Figure 2 Scatter diagram showing Access to electricity if year is ≥ 1990

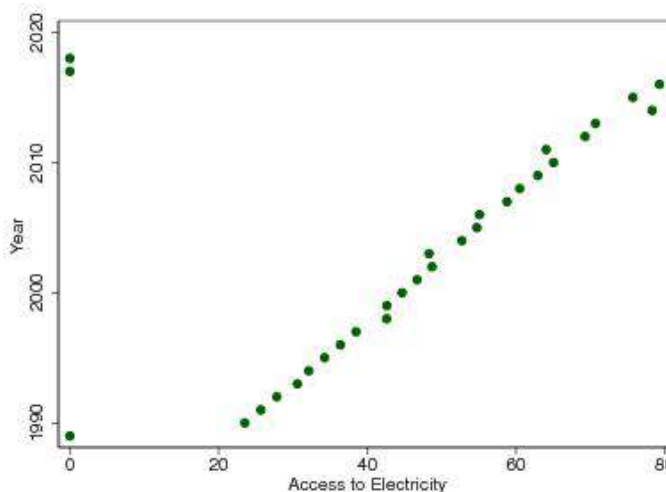


Figure 3 Scatter diagram showing Real Effective Exchange Rate Index if year is ≥ 1990

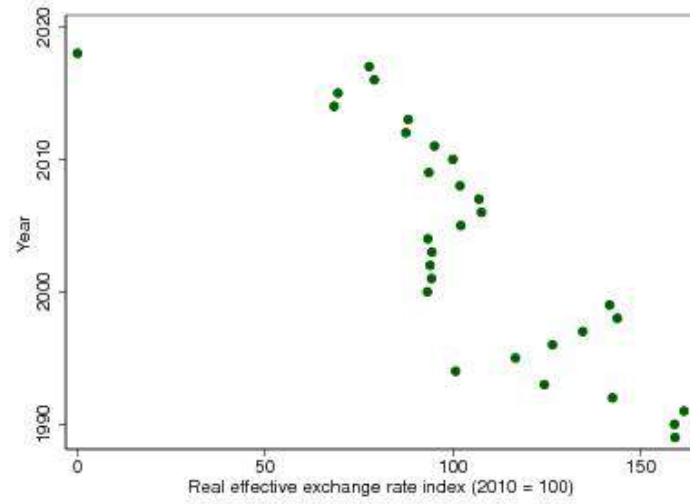


Figure 4 Scatter diagram showing Tax Incentives if year is ≥ 1990

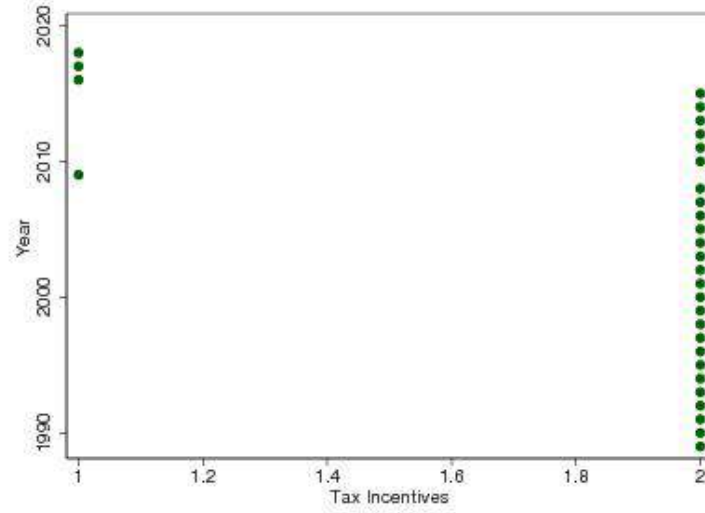


Figure 5 Scatter diagram showing Bilateral Investment Treaties if year is ≥ 1990

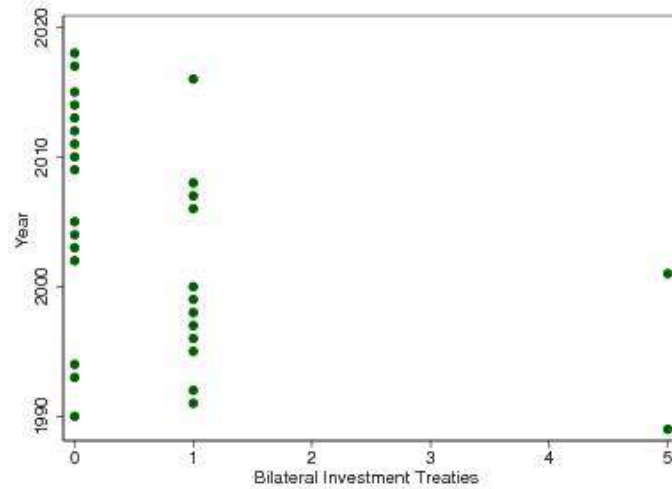


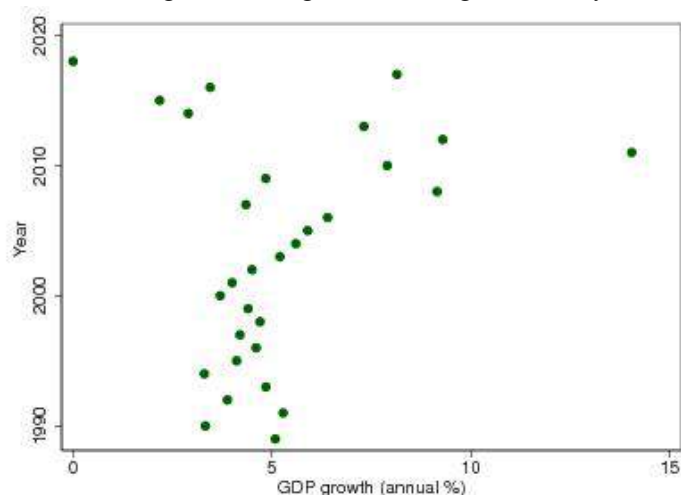
Figure 6 Scatter diagram showing GDP annual growth % if year is ≥ 1990 

Table7: Chou test to test for structural break

Source	SS	df	MS	Number of obs = 18		
Model	2.1156e+19	6	3.5259e+18	F(6, 11) =	13.95	
Residual	2.7796e+18	11	2.5269e+17	Prob > F	= 0.0001	
Total	2.3935e+19	17	1.4080e+18	R-squared	= 0.8839	
				Adj R-squared	= 0.8205	
				Root MSE	= 5.0e+08	

fdiinflowsrealvalues	Coef.	Std. Err.	t	P> t	[95% Conf. Interval]	
accesstoelectricity	1.47e+07	8759710	1.68	0.121	-4578305	3.40e+07
Realeffectiveexchang	-5.16e+07	1.24e+07	-4.15	0.002	-7.89e+07	-2.42e+07
taxincentives	-6.95e+08	4.00e+08	-1.74	0.110	-1.57e+09	1.84e+08
bilateralinvestm	1.33e+08	1.17e+08	1.13	0.283	-1.26e+08	3.91e+08
wagedandsalariedworke	-4.84e+07	1.47e+07	-3.29	0.007	-8.08e+07	-1.60e+07
gdpgrowthannual	1.65e+08	5.27e+07	3.14	0.009	4.93e+07	2.81e+08
_cons	7.26e+09	1.24e+09	5.88	0.000	4.54e+09	9.98e+09

The table above shows the period within and after 2000. Here it is seen that the number of observations as 18, the R- Squared value is seen to have increased from 85% to 88% and the Adjusted R-Square of 82%. It can be observed that though it records the highest of the adjusted and r square value, some variables that are significant from the year 1990 such as Access to electricity is considered insignificant according to the model. However, real effective exchange rate, waged of salaried workers, and annual gross domestic product remain significant in both models. It can be observed that real effective exchange rate and waged and salaried workers show a positive inverse relationship with t- values of -4.15 and -3.29 respectively. It can be also be observed that tax incentives shows a weak inverse relationship with t value of -1.74. As compared to the previous analysis, tax incentives though having an inverse relationship does not have a significant t value in this analysis. Real effective exchange rate recorded the highest t- value signifying the importance of the exchange rate which reports a t- value of -4.15, which is above the t value of 2.00.

Between 2000 and 2014, the total inward FDI flow to Ghana amounted to more than US\$ 27 billion. There was a stable inflow of FDI from 2000 to 2005 with the lowest value of investments in 2002 at US\$ 70 million. Numerous reasons led to the low inflow of FDI to Ghana throughout this time period. For instance, in 2001, the Government of Ghana opted for the Highly Indebted Poor Countries (HIPC) Initiative to persuade its development partners to cancel Ghana's debt in return for solutions to the country's socio-economic problems that was affecting all aspects of Ghana's development. During this period, Ghana's development partners suspended their assistance in order to allow the country to properly reorganize their affairs. This situation contributed to the discouragement of investments by foreign businesses as a country in the HIPC initiative will have its image marred and will deter both private and public investments. The flows FDI then fluctuated between 2006 and 2010 but increased rapidly by more than fivefold at a high of US\$ 7.7 billion in 2011 and after that,

flows declined. The decline in growth in FDI flows after 2011 to 2014 was partly caused by the political uncertainty beleaguering every election year in Ghana as it was in the past election years (that is election years 2000, 2004 and 2008).

During every election year, foreign investment always shows a downward trend due to foreign investors' lack of confidence in African politics as a whole and its numerous uncertainties of the outcome. This usually happens months leading up to elections and six months after that as was experienced during the 2012 general elections in Ghana which resulted in a lengthy court dispute over the result which led to an eight-month court case copulated with the energy crisis resulting to most potential and existing investors' lukewarm investment flow. Another factor that contributed to the slow progress in attracting FDI during this period was the devaluation of the Cedi resulting from ongoing trade and current account imbalances. In 2013, the Ghanaian Cedi dropped 15% against the Dollar and although the Central Bank of Ghana in 2014 implemented a string of foreign exchange controls, it had little effect to stop the slide which increased inflation and leading the International Monetary Fund (IMF) to project a current account deficit of 9.1% in the same year (Oxford Business Group, 2014).

Figure 7 Sunflower diagram showing FDI net inflows if year \geq 2000

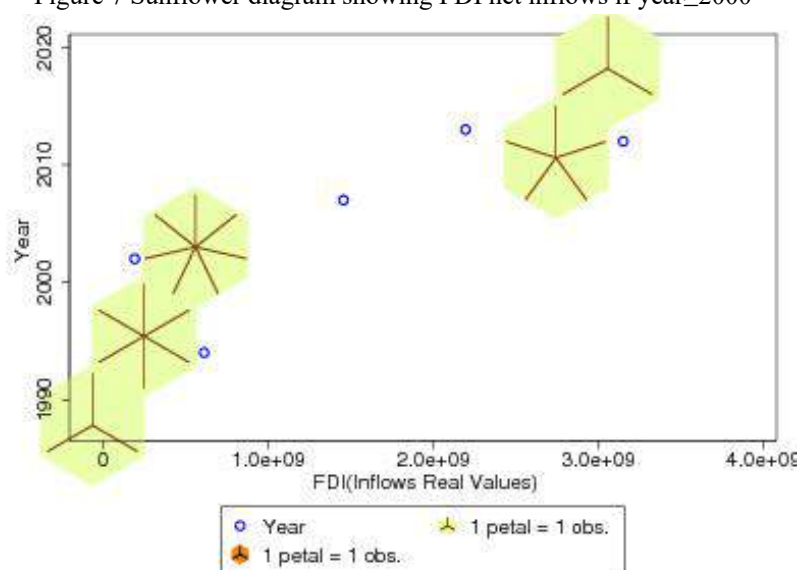


Figure 8 Sunflower diagram showing Access to electricity if year \geq 2000

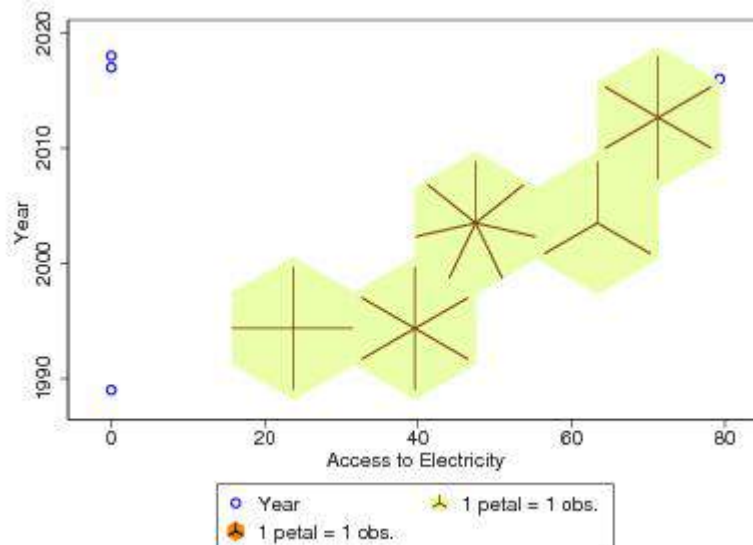


Figure 9 Sunflower diagram showing Real effective Exchange Rate Index if year \geq 2000

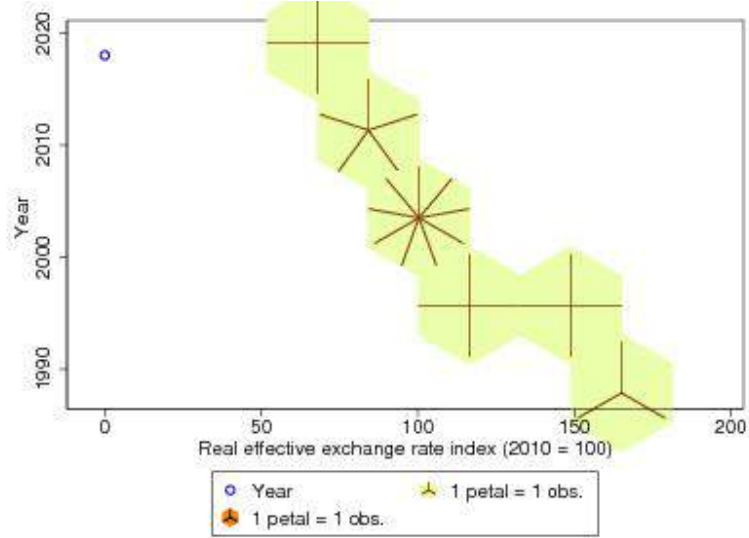


Figure 10 Sunflower diagram showing Tax Incentives if year \geq 2000

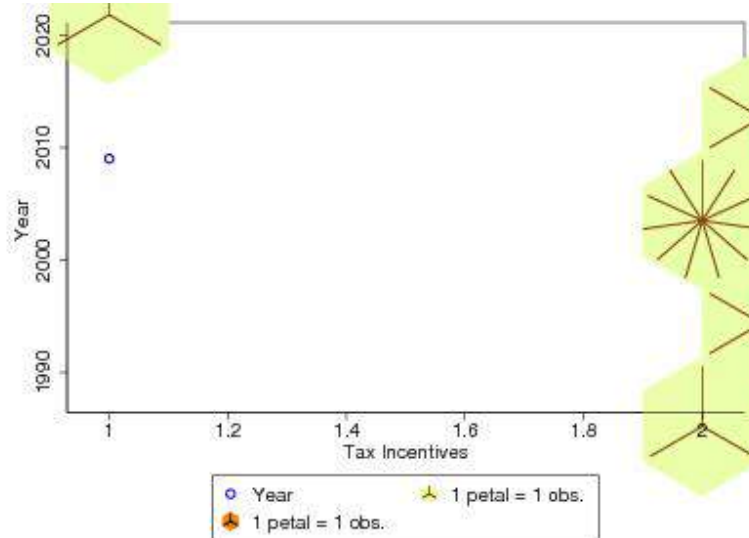


Figure 11 Sunflower diagram showing Bilateral Investment Treaties if year \geq 2000

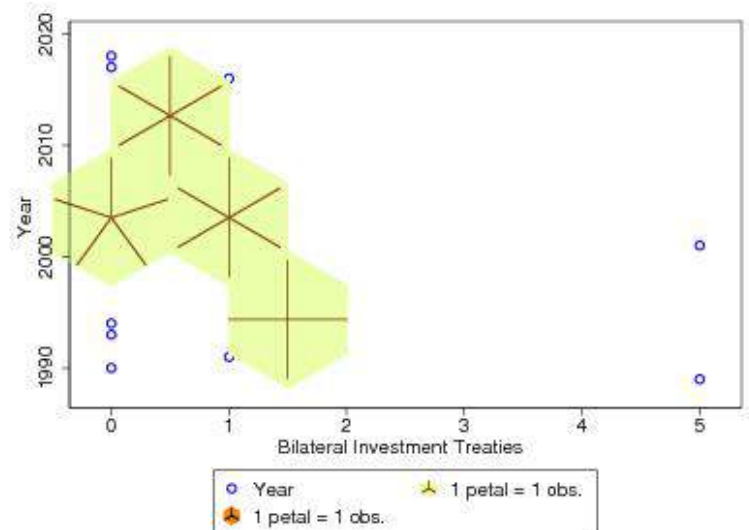
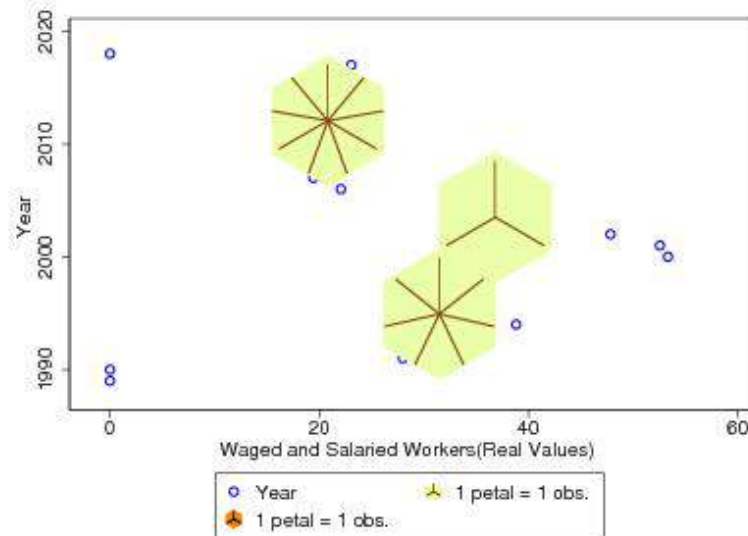
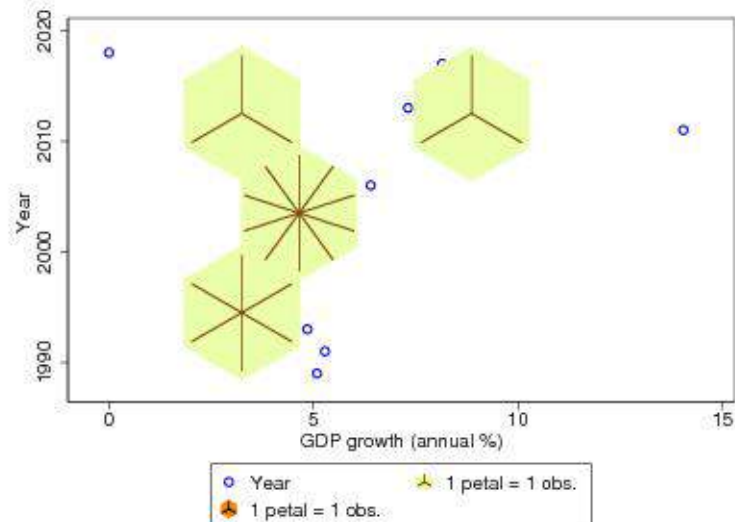


Figure12 Sunflower diagram showing Wage and Salaried Workers total % if year \geq 2000Figure 13 Sunflower diagram showing GDP growth annual % if year \geq 2000

5. Conclusions and Remarks

The paper sought to provide a comprehensive analysis of determinants of FDI inflows in Ghana. Most papers or existing literature focused mostly on the economic variables as factors affecting the inflows of FDI in Ghana. Though this is true to some extent, as time evolved other factors have been included in the explanation process of inward FDI in many countries. Thus, the contribution of this paper to shed more light on the new policies added and considered when discussing the determinants of FDI in a region. Another contribution of this paper is the structural break performed for the years greater than or equal to 1990 and years greater than or equal to 2000. It is observed that inflows of FDI vary during the various periods as well as reasons leading to the decline or increase in FDI. This helps policy makers in devising strategic procedures to avoid such declines and also adapt measures to if not maintain but all upgrade measures to attract more foreign investors. It can also be observed that though the Republic of Ghana has signed many bilateral trade agreements with other countries, just a handful have been ratified, thus reflecting a low percentage of BITs as a contributing factor of FDI. Though it cannot be generally concluded that signing more BITs will lead to an increment of FDI inflows, it is an avenue worth tapping into for potential. National Policies as factors determining FDI also from the model proved to play a significant role in attracting FDI into Ghana, though limited to some sectors and neglecting others. It lastly

emphasizes the importance of the Free zones policy introduced by the Government of Ghana as a means of attracting foreign direct investment

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References

- Afriyie, K. J. G., trade, & investment, f. d. (1998). Foreign direct investment in Ghana's emerging market economy. 217-236.
- Alfaro, L., Chanda, A., Kalemli-Ozcan, S., & Sayek, S. J. J. o. i. e. (2004). FDI and economic growth: the role of local financial markets. 64(1), 89-112.
- Ali, F. A., Fiess, N., & MacDonald, R. J. O. e. r. (2010). Do institutions matter for foreign direct investment? , 21(2), 201-219.
- Ang, J. B. J. J. o. p. m. (2008). Determinants of foreign direct investment in Malaysia. 30(1), 185-189.
- Asiedu, E. J. W. d. (2002). On the determinants of foreign direct investment to developing countries: is Africa different? , 30(1), 107-119.
- Asiedu, E. J. W. e. (2006). Foreign direct investment in Africa: The role of natural resources, market size, government policy, institutions and political instability. 29(1), 63-77.
- Azrak, P., & Wynne, K. J. J. o. P. M. (1995). Protectionism and Japanese direct investment in the United States. 17(3), 293-305.
- Bartels, F. L., Napolitano, F., & Tissi, N. E. J. I. B. R. (2014). FDI in Sub-Saharan Africa: A longitudinal perspective on location-specific factors (2003–2010). 23(3), 516-529.
- Bende-Nabende, A., Ford, J., Santoso, B., & Sen, S. J. A. E. L. (2003). The interaction between FDI, output and the spillover variables: co-integration and VAR analyses for APEC, 1965-1999. 10(3), 165-172.
- Billington, N. J. A. e. (1999). The location of foreign direct investment: an empirical analysis. 31(1), 65-76.
- Blomström, M., Kokko, A., & Mucchielli, J.-L. (2003). The economics of foreign direct investment incentives. In *Foreign direct investment in the real and financial sector of industrial countries* (pp. 37-60): Springer.
- Brewer, T. L. J. J. o. I. B. S. (1993). Government policies, market imperfections, and foreign direct investment. 24(1), 101-120.
- Büthe, T., & Milner, H. V. J. A. j. o. p. s. (2008). The politics of foreign direct investment into developing countries: increasing FDI through international trade agreements? , 52(4), 741-762.
- Choi, C. J. J. o. P. M. (2003). Does the Internet stimulate inward foreign direct investment? , 25(4), 319-326.
- Contractor, F. (1991). *Government policies toward foreign investment: an empirical investigation of the link between national policies and FDI flows*. Paper presented at the Annual Meeting of the Academy of International Business, Miami, FL.
- Deichmann, J., Karidis, S., & Sayek, S. J. A. E. (2003). Foreign direct investment in Turkey: regional determinants. 35(16), 1767-1778.
- Driffield, N., & Taylor, K. J. O. R. o. E. P. (2000). FDI and the labour market: a review of the evidence and policy implications. 16(3), 90-103.
- Dunning, J., & Narula, R. (2003). *Foreign direct investment and governments: catalysts for economic restructuring*: Routledge.
- Fedderke, J. W., & Romm, A. T. J. E. M. (2006). Growth impact and determinants of foreign direct investment into South Africa, 1956–2003. 23(5), 738-760.
- Globerman, S., & Shapiro, D. M. J. J. o. I. B. S. (1999). The impact of government policies on foreign direct investment: The Canadian experience. 30(3), 513-532.
- Grubert, H., & Mutti, J. (1991). Financial flows versus capital spending: alternative measures of US-Canadian investment and trade in the analysis of taxes. In *International Economic Transactions: Issues in Measurement and Empirical Research* (pp. 293-320): University of Chicago Press.
- Habib, M., & Zurawicki, L. J. J. o. i. b. s. (2002). Corruption and foreign direct investment. 33(2), 291-307.
- Hailu, Z. A. J. I. J. o. e., & Finance. (2010). Impact of foreign direct investment on trade of African countries. 2(3), 122-133.
- Hoekman, B., & Saggi, K. J. J. o. E. I. (2000). Assessing the case for extending WTO disciplines on investment-related policies. 629-653.
- Kumar, N., & Pradhan, J. P. J. R. D. P. (2002). FDI, externalities and economic growth in developing countries: Some empirical explorations and implications for WTO negotiations on investment. (27).
- Loree, D. W., & Guisinger, S. E. J. J. o. I. B. S. (1995). Policy and non-policy determinants of US equity foreign

- direct investment. *26*(2), 281-299.
- Neumayer, E., & Spess, L. J. W. d. (2005). Do bilateral investment treaties increase foreign direct investment to developing countries? , *33*(10), 1567-1585.
- Nunnenkamp, P. (2002). *Determinants of FDI in developing countries: has globalization changed the rules of the game?* Retrieved from
- Onyeiwu, S., & Shrestha, H. J. J. o. D. S. (2004). Determinants of foreign direct investment in Africa. *20*(1-2), 89-106.
- Review, U. J. F. T. (1996). World Investment Report 1996: Investment, Trade and International Policy Arrangements. *31*(3), 85-109.
- Sekkat, K., & Veganzones-Varoudakis, M. A. J. R. o. D. E. (2007). Openness, investment climate, and FDI in developing countries. *11*(4), 607-620.
- Shapiro, D., & Globerman, S. J. M., Simon Fraser University. (2001). National infrastructure and foreign direct investment.
- Treviño, L. J., & Mixon Jr, F. G. J. J. o. w. b. (2004). Strategic factors affecting foreign direct investment decisions by multi-national enterprises in Latin America. *39*(3), 233-243.
- Villela, L. A., & Barreix, A. D. (2002). *Taxation and Investment promotion*. Retrieved from
- Wang, Z. Q., & Swain, N. J. J. W. A. (1995). The determinants of foreign direct investment in transforming economies: Empirical evidence from Hungary and China. *131*(2), 359-382.
- Welfens, P. J. J. (1994). *Foreign Direct Investment and Privatization*.

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<https://www.gipcghana.com/invest-in-ghana/doing-business-in-ghana/laws-regulation.html>