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Dynamic Capabilities and Performance: The Mediating Role of Firm Competence

Gabriel Kitenga¹, Dr. J. M. Kilika¹, Dr. A. W. Muchemi¹

¹Department of Business Administration, School of Business, Kenyatta University, Nairobi, Kenya

Correspondence: Gabriel Kitenga email: gkitenga@yahoo.com

Abstract

This study aimed at determining the mediating effect of firm competence on the relationship between dynamic capabilities and performance. The study was founded on positivism philosophy and adopted an explanatory and exploratory research design. The population of the study comprised of 70 food manufacturing firms in, Kenya. Stratified random sampling method was used to identify a sample of 295 respondents. A semi-structured self-administered questionnaire was used to collect primary data. Prior to data collection, a pilot study was conducted to ensure reliability of the questionnaire. The reported findings were obtained from 190 respondents who were senior managers in the respondent firms responsible for finance, human resources, operations marketing and corporate relations. Measures of central tendency including the mean and standard deviation were used to summarize the variable characteristics Data was analyzed using descriptive statistics. Multiple regression analysis was used to test the study hypotheses. The findings of the study showed that dynamic capabilities have a significant direct effect on performance and that the effect of dynamic capabilities on performance is partially mediated by firm competence. The findings also showed that firm competence has a direct and significant effect on performance also that dynamic capabilities can partially mediate the effect of firm competence on firm performance.

Keywords: Dynamic Capabilities, Firm Competence, Firm Performance

1. Introduction

Firm Performance is an important concept among business managers as well as scholars in business research. Concerns over firm performance are often motivated by the perception of threats to the durability of the firm. These concerns seem to be justified by the ever-growing competition for market and resources (Maltz, Shenar & Reilly 2003). Globally, firms are looking for strategies that will enable them cope with the dynamic global competition (Easterby-Smith & Prieto, 2008). The search for how to respond to environmental turbulence has led several scholars and strategic managers to view Dynamic Capabilities as being central to strategy and firm Performance (Teece, 2017).

According to Eisenhardt and Martin (2000), competence is crucial to a firm because it is a mechanism which firms use to, leverage, combine, and reconfigure resources. Building on Bane-Hani & AL-Hawary, (2009) and Winter, (2003) that firm competencies indirectly affects performance this study proposes a model where Firm competence

mediate the effect of capabilities on Performance through their interaction with other corporate intellectual phenomena to support organizational success.

1.1 Firm Performance

Despite being common in academic literature the concept of firm performance is difficult to define because of its many meanings. Hubbard (2006) observes that firm performance does not have a universally accepted definition although it is a widely used variable in business research. Richard, Devinney, Yip and Johnson (2009), conceptualized the term in terms of the extent to which firms achieve their goals. Hult *et.al.*, (2008) defined firm performance as the efficiency and effectiveness in utilization of resources as well as the accomplishment of firm goals through core strategies. According to Barney (2001), the concept of firm performance is grounded on the idea that a firm is the interaction of productive resources for the purpose of creating value. Therefore, as long as the firm creates a value that meets or exceeds the value that its providers expect, resources will continue to be made available and the firm will continue to survive and prosper (Gavrea, Ilies & Stegorean, 2011). Pierre, Timothy, George, and Gerry (2009) observe that recent empirical researches have used Financial, Operational and Market-based performance measures. According to Richard and Bromley (2009), organizational performance encompasses three specific areas of firm outcomes: (a) financial performance for example profits, return on assets and return on investment (b) product market performance (such as sales, market share.); and (c) shareholder return for example total shareholder return.

According to Richard, Devinney, Yip, and Johnson (2009), Operational Performance focuses on extending to which an organization is efficient in producing the goods and services that customers really want at the lowest cost and effort as possible. Environmental performance measures performance in terms of the amount of resources firms use for their operations (such as energy, land, water) and the by-products of their operations (such as solid waste, air pollution, and chemical residues) (Gross, 2015). Social performance measures performance in terms of the impact that firms have on the communities in which they operate (Taouab & Issor, 2019). This study used profit growth, customer satisfaction, employee satisfaction, environmental stewardship, corporate governance, and social excellence as indicators of firm performance of manufacturing firms in Kenya.

1.2 Dynamic Capabilities

According to Teece (2007), dynamic capabilities consist of three types of abilities: One, to sense new opportunities, Two, to sense those opportunities and Three to sustain competitive edge through improving, integrating and when imperative, reconfiguring the business enterprise's key tangible and intangible activities. Helfat *et al.*, (2007) assert that dynamic capabilities are the capacity of an organization to create, extend or modify its resource base. Wang and Ahmed (2007) defined them as a firm's orientation to constantly integrate, reconfigure, renew, and recreate its resources capabilities and reconstruct its core capabilities in response to the changing environment to attain and sustain competitive advantage. Dynamic capabilities have also been seen as a learned and stable pattern of collective activity through which the organization systematically generates and modifies its operating routines in pursuit of improved effectiveness (Zolfo & Winter, 2002). Eisenhardt and Martin (2000) refer to dynamic capabilities as a set of identifiable processes such as product development, decision making and alliancing. Helfat *et al.* (2007) described them as processes or routines which may have become embedded in the firm over time and are employed to reconfigure the firm's resource base by deleting decaying resources or recombining old resources in new ways.

Ambrosini and Bowman (2009) state that the role of dynamic capabilities is to impact on the firm's extant resource base and transform it in such a way that a new bundle or configuration of resources is created so that the firm can sustain or enhance its performance. According to Easterby-Smith and Prieto (2008), dynamic capabilities can take on multiple roles in organizations, such as changing resource allocations, organizational processes, knowledge development and transfer and decision making. Winter (2003) argues that in order to compete successfully in their markets, firms need dynamic capabilities to help them to upgrade their ordinary capabilities, or to create new ones so as to sustain performance. According to Wang and Ahmed (2007), absorptive capability, adaptive capability,

and innovative capability are four main categories found across industries. Teece, (2008) found marketing and managerial capabilities as other categories found across industries.

1.3 Firm Competence

Firm Competence has been defined as the combination of multiple resources to execute a set of activities which the firm performs exceptionally well, and which gives the firm competitive advantage over its peers (Nguyen, 2008). Competencies are the set of specialized skills, qualities and characteristics of knowledge that enable a firm to excel in their performance and achieve higher level of customer satisfaction than its peers through the integration of resources, technology, and routines (Hitt, et al., 2001). Firm Competences interact with other intellectual corporate phenomena to support firm survival and success (Winter 2003). When a firm's strategic tangible and intangible resources and capabilities combine, they create competences which the firms excel at and gives it competitive advantage over its peers (Cockburn, Henderson Stern, 2000). Hill and Jones (2010) use the term distinctive competence and argue that perspectives on competence center on the uniqueness and comparative performance of something arising within an organization in the light of the efforts of its competitors.

According to Fai and Tunzelmann (2001) organizational competence is an aspect of the business believed to have the greatest strategic value and measured at the level of the organization rather than at the level of the individual. According to Danneels (2002) organizational competence refers to a firm's invisible strategic assets such as corporate reputation of the firm and its brands or image, product or service quality, knowledge of customer needs, ability to serve its customers and customer loyalty.

According to Agha, Alrubaiee & Jamhour (2012) foundational competencies are the set of skills, knowledge, and attitudes and attributes necessary for broad job functions. They are supporting level competencies linked to successful performance and are desirable regardless of an individual's area of expertise or role. Jabbouri, Zahiri (2014) cite oral communication, adaptability, initiative, integrity professionalism, cultural sensitivity as indicators of foundational competence. According to Danneels (2002) technological competence is the capability that enables the firm to design and manufacture a physical product or service with certain features. It is constituted by such technically related resources as design and engineering know-how, product, process design equipment, manufacturing facilities and procedures for quality control. According to Wahab (2012) technology refers to tools, devices, and knowledge that mediate between inputs and outputs (process technology) and/or create new products or services (product technology).

According to Agha, Alrubaiee and Jamhour (2012) functional competence is the knowledge, skill, and abilities required to fulfill specific job tasks, duties, or responsibilities. It is a specific knowledge or skill area that relates to successful performance in the job. According to Wahab (2012), functional competence is the combination of practical, theoretical, and cognitive skills needed to perform a specific function. Ahadzie, Proverbs, Olomolaiye, & Ankrah, (2009) observe that functional competencies are job-specific and are associated with the technical functions of a firm such as organizing, planning, coordinating, and controlling and have an influence on the individual and firm performance).

Nguyen (2008) argues that although resources, capabilities, and competencies are closely related to each other, they can be distinguished by their characteristics; thus, Firm resources refer to its financial, physical, human, technological, and organizational capital. Firm Capabilities are intangible and refer to a company's skills at coordinating its resources and putting them to productive use. Firm Competence, on the other hand, refers to the firm's unique strength that enables the firm to achieve superior efficiency, quality, innovation, or customer responsiveness compared to its peers. According to Baker, Pearson, & Chipman (2009), firm competencies refer to the capabilities of an organization that describes performance excellence and difficult to imitate employee skills and processes required to achieve success. Dynamic Capabilities, on the other hand, refer to a firms' ability to adjust its competences over time and is related to resources necessary for change. According to Eisenhardt and Martin (2000), competence is crucial to a firm because it is one of the mechanisms by which firms use to leverage, recombine, and reconfigure resources. Hill and Jones (2001) observe that firms can enhance their performance by exploiting their competences which enables them to achieve superior efficiency thus enabling it to lower its cost,

charge a higher price and in turn outperform its competitors. Cockburn, Henderson, and Stern (2000) viewed firm competence from four distinct approaches: organizational competence, foundational competence, technological competence, and functional competence

1.4 Food Manufacturing Firms in Kenya

Food manufacturing firms display distinctive characteristics ranging from family-owned to publicly own. Some of the firms are foreign-owned while others are locally owned. Flour mills represent 18% of the total number of Food Manufacturing firms. Processing of edible oils represents 18% while sugar and confectionery processing comprise 12%. The rests are bakeries and processors of vegetable, fruit, dairy, fish, and meat. (Promar Consulting, 2016). In terms of value addition, sugar and confectionery contribute 15%, edible oils 10% and flour products 9% total value created by Food Manufacturing firms. The sector contributes 30% of manufacturing GDP and 40% of all employees in the manufacturing sector (GOK, 2018).

1.5 Statement of the Problem

Despite its importance to strategic management, research on firm performance suffers from a lack of consensus on its definition and selection of indicators (Combs, Crook, & Shook, 2005). According to Hubbard, (2009), measuring performance is difficult especially when what s to be measured keeps changing and is likely to become more complex with the increasing need to satisfy the ever-changing needs of the organization's stakeholders. Furthermore, many studies have measured firm performance with a single indicator (mainly financial performance) and thus erroneously representing the concept as unidimensional (Glick, Washburn, & Miller, 2005). As such, the field of strategic management clearly needs more studies to get a clearer conceptualization of firm performance and identify better measurement frameworks (Richard, Devinney, Yip, & Johnson, 2009).

How firms' dynamic capabilities lead to their competitive advantage and improved firm performance has been a core issue and full of debates. Indeed, there are different perceptions of how and whether dynamic capabilities influence firm performance (Akintoye, 2008). For instance, scholars have portrayed Dynamic Capabilities as direct drivers, preconditions, moderators, or mediators of firm Performance (Arend and Bromiley, 2009). Therefore, further empirical research is needed to validate previous studies on the relationship between dynamic capabilities and performance. Furthermore, there has been conflicting research findings on the effect of dynamic capabilities. For instance, Drnevich and Kriauciunas (2011) report negative direct effects of dynamic capabilities on firm performance while Protogerou *et al.* (2011) report that there is no direct performance effect of dynamic capabilities.

The interaction between Dynamic Capabilities and other organizational phenomena such as Firm Competence to influence performance has not been fully investigated (Wang & Ahmed (2007). Furthermore, studies on the performance of manufacturing firms in Kenya have not considered the influence of dynamic capabilities on performance in the context of food processing firms.

Furthermore, most of empirical studies on the effect of Dynamic Capabilities on firm Performance were done in developed countries with different cultural and economic settings. This makes it difficult to generalize the results to a Kenyan setting. More empirical studies are therefore needed in developing countries to provide more academic rigor to the concept (Protogerou, Caloghirou & Lioukas 2012). According to (Arend & Bromiley, 2009) a large number of studies on Dynamic Capabilities relied on small samples. This may reflect a careful choice of firms that researchers believed would possess Dynamic Capabilities. This raises issues of, generality and reliability of results of results to other settings, companies, or countries. Moreover, most key empirical studies linking Dynamic Capabilities and Performance considered only financial Performance and did not consider non-financial Performance.

1.6 Objectives of the Study

The general objective of this study was to investigate the effect of Dynamic Capabilities on Performance of Food Manufacturing firms in Kenya. Specifically, the study sought to

- (i) Examine the effect of dynamic Capabilities on Performance of Food Manufacturing firms in Kenya.
- (ii) Investigate the mediating effect of Firm Competence on the relationship between Dynamic Capabilities and Performance of Food Manufacturing firms in Kenya.

1.7 Research Hypotheses

The study tested the following hypotheses:

H₀₁: Dynamic Capabilities have no significant effect on Performance of Manufacturing firms in Kenya.

H₀₂: Dynamic Capabilities have no significant effect on Firm Competence of Manufacturing firms in Kenya

H₀₃: Firm Competence has no mediating effect on the effect of Dynamic Capabilities on Performance of Manufacturing firms in Kenya

H₀₄: Firm Competence has no significant effect on Dynamic Capabilities of Manufacturing firms in Kenya.

H₀₅: Dynamic Capabilities have no mediating effect on the effect of Firm Competence on Performance of Manufacturing firms in Kenya

1.8 Significance of the Study

This study is significant in several ways. First, the overall findings of the study helped in informing policy decisions on how to mitigate food security in the country through using Dynamic Capabilities to enhance Performance of Food Manufacturing firms. Secondly, the study provides managers of Food Manufacturing firms with more information on how Dynamic Capabilities interact among themselves and Firm Competence to influence Performance.

Third, this study contributed to the existing body knowledge by showing how Dynamic Capabilities interact with other organizational variables such as Firm Competence to impact Performance. Further, the study helped fill the gap left by local studies which investigated the relationship between Dynamic Capabilities and financial Performance by introducing social excellence and environmental stewardship to the traditional financial measures commonly used to measure performance. Finally, the study provided useful insights to future scholars who want to study dynamic capabilities.

2. Literature Review

2.1 Theoretical Review

This study was informed by the Dynamic Capabilities theory as the main theory. This theory was complemented by the Competence-Based Theory, The Stakeholder Theory, and the RBV theory. The review lays the theoretical foundation for the study.

2.1.1 The Competence-based Theory of the firm

Philip Selznick (1957) was the originator of the theory. It emerged from the work of Oskar Morgenstern (1951) who perceived organizations as bundles of competencies. According to Prahalad and Hamel, (1990) the theory evolved to complement the RBV. In this theory, competence is seen as the ability to sustainably deploy resources in a way that supports the firm to achieve its objective of creating value for its stakeholders (Delamare & Winterton, 2005) The theory broadly states that a firm can only perform better than others if it can use available resources more effectively and/or efficiently by applying competences in ways its rivals cannot imitate (Sanchez & Heene 2004). Prahalad and Hamel, (1990) argue that the competence-based theory complements the dominant Potterian view in the field of strategy by drawing attention to the internal aspects of organizations like dynamic capabilities as being sources of superior performance.

Scholars argue that although an organization may have many competencies and capabilities, only a few of these are combined in such way as to become core competences (Prahalad & Hamel, 1990). By focusing on their core

competencies, firms get competitive advantage by doing the things which they excel at (Rust *et al*, 2004). Firm competencies that do not create imitable products or services are not core and do not give the firm sustainable competitive advantage (Teece 2004). Thus under the competence based framework, Firm A can only be more successful than B if A is in a position to make use of the available resources more effectively and/or efficiently than B.

The competence-based view contributes to strategic management by offering insights that help to explain corporate success. It also helps to explain why firms perform differently. However, although the theory offers a framework to explain the roots of corporate success, its contributions are yet to be analyzed in a comprehensive way (Freiling, 2004). The study used the Competence Based Theory of the firm to inform the mediating variable.

2.1.2 Resource Based View (RBV)

The RBV was suggested by Wernerfelt (1984) and popularized by Barney (1991) using insights provided by Penrose (1959). According to Ireland, Michael, Hitt and Sirmon (2003), it is drawn from at least four theoretical sources; the study of distinctive competencies, Ricardian economics, Penrosian economics and the study of the anti-trust implications of economics. In RBV firms are conceived as bundles of resources (Wang & Martin 2007). According to Peteraf and Barney (2003) the key determinants of firm Performance are the tangible and intangible assets resources owned by the firm.

The RBV presents a connection between internal resources, strategy, and the performance of the organization (Torrington, 2005). RBV was a shift from earlier suggestions that superior performance comes from managing factors that are external to the firm (Peteraf & Barney 2003). In essence the underlying presumption of theory is that it is the resources and competencies inherent in the firm rather than in the environment which determines firm performance (Wang & Martin 2007). According to Peteraf and Bergen (2003), a central premise of the resource-based view is that firms compete on the basis of their resources and capabilities. The resource-based view suggests that a firm A is more successful than firm B if A controls more effective and/or efficient resources than B (Barney 1991; Hunt 2000).

According to Helfat and Peteraf (2003), a firm's resources at a given time could be defined as those (tangible and intangible) assets which are tied semi permanently to the firm. **Tangible** resources can easily be bought in the market so they confer little advantage to the companies in the long run because rivals can soon acquire the identical assets. Makadok (2003) argued that unlike physical resources, intangible resources such as brand reputation are built over a long time and are something that other companies cannot buy from the market. He argues that intangible resources usually stay within a company and are the main source of sustainable performance. Barney (1991) argued that firm's tangible and intangible resources must be valuable, rare, imperfectly imitable, and non-substitutable (VRIN) to be a source of superior performance. The theory emphasizes that value creation and superior performance of a firm is affected by combination of the competitive strategy and its resource base (Eisenhardt & Martin, 2000). The theory contributes to strategic management by explaining how a firm can increase performance by acquiring and utilizing VRIN resources (Alvarez, & Barney, 2000). One weakness of RBV is that it is static and therefore does not explain how to sustain Performance in a dynamic market (Kraaijenbrink, Spender, & Groen, (2010). Teece (2010) explained that the RBV was not able to provide explanations as to how some successful firms demonstrated timely responsiveness and rapid and flexible product innovation along with the management capability to effectively coordinate and redeploy internal and external competences.

Teece (2010) further argued that it is essential to consider the changing nature of the external environment and hence the role of strategic management, which is principally about adapting, integrating, and reconfiguring internal and external organizational skills, resources and functional competencies toward the changing environment. Proponents of the RBV have also been criticized for poorly defining the core constructs of the theory Foss and Knudsen, (2003). RBV scholars have been criticized for failing to agree on the definition of key variables and constructs, leading to inconsistent presentations of theory (Bromley 2005). This study used the RBV to inform the independent variables.

2.1.3 Dynamic Capabilities Theory

According to Ambrosini and Bowman (2009), Terence's (1990) working paper is probably the first contribution developing the notion of dynamic capabilities. Dynamic Capabilities theory itself was developed by (Teece & Pisano 1994). Teece, Pisano and Shuen (1997, 2007) saw competitive advantage in turbulent environments as a function of dynamic capabilities rather than competitive positioning or industry conflict. They used the term "dynamic" to reflect the capacity to renew competences so as to achieve congruence with the changing environment.

According to Pisano (2014), this theory evolved from the evolutionary theory of the firm. The theory enhances the RBV (Teece, Pisano & Shuen, 1997; Teece 2017; Zahra *et.al.*, 2006). According to this theory, firms achieve sustainable competitive advantage by reacting rapidly and flexibly to changing market environments (Teece 2017). Dynamic Capabilities theory explains long-run firm survival by showing how firms can manage competitive threats by redeploying their resources (Teece, 2010). In this theory, firm Performance depends on distinct processes shaped by asset positions and the evolution path(s) the firm has adopted or inherited (Teece et al, 1997, Pisano, 2016). The theory suggests that Performance a firm during periods of rapid change depends on its ability to sharpen its technological, organizational, and managerial processes (Teece, 2017). Firms use Dynamic Capabilities to reconfigure their resources as markets emerge, collide, mutate, or cease (Teece, Pisano & Shuen, 1997).

According to Teece (2018) the price system is inefficient in allocation of a firm's resources. Therefore, managers give directives to deploy in value-enhancing ways. Because managers make decisions under uncertainty, they do not create once-and-for-all solutions but continually reconfigure firm resources and competences as needed (Zara *et.al.* 2006). Teece (2006) cast dynamic capabilities against Porter's five forces, and points out that in the latter, the sustainable advantage comes from hiding behind market structures, erecting entry barriers or building them if they did not exist. In the dynamic capabilities framework, market structure does not matter.

Teece (2012) argues that in this framework, sustainable performance comes from shapping internal processes, structures and procedures to generate innovations, be they technological or organizational. He further argued that the dynamic capabilities framework recognizes analytical functions that must be performed at the enterprise level to sustain success. Danneels (2002) suggested two levels of dynamic capabilities. The first order capabilities are the firm's extant resource base, the resources that allow the firm to directly earn a living. The second-order capabilities refer to dynamic capabilities that enable the creation of new capabilities. Winter (2003) argued that the dynamic capability hierarchy begins with operating capabilities or zero-level capabilities that allow firms to earn a living in the present. The first order capabilities are that allow for a change in zero-order capabilities to occur. Higher-order capabilities are the outcome of organizational learning which results in creating or modifying a firm's dynamic capabilities.

According to Ambrosini and Bowman (2009), one of the criticisms of the dynamic capabilities concept is that they are difficult to measure empirically as are the underlying operational processes as well as the relationship between dynamic capabilities and firm performance. It is also difficult to measure the routines and processes that are often idiosyncratic to firms or part of resource bundles. The basic assumption of the theory is that a firm dynamic capabilities should be used to modify competitive positions to build long-term competitive advantage. This study used the Dynamic Capabilities Theory to inform the independent variable.

2.1.4 The Stakeholder Theory

The stakeholder theory was advanced by Freeman (1984). He built it on the work of Mitroff, Mason (1982) and Emshoff. (1978). The use of the term stakeholder grew out of the pioneering work at Stanford Research Institute (now SRI International) in the 1960s. Freeman (2004) defined stakeholders as those groups who are vital to the survival and success of the organization. The Theory presents the corporation as a constellation of cooperative and complete interests. In this regard, Friedman (2006) was of the view that the organization itself should be thought of as grouping of stakeholders and the purpose of the organization should be to manage their interests, needs and viewpoints. The Theory suggests that firms should cater to the interests of stakeholders to maximize corporate wealth and the collective benefits of all stakeholders (Freeman 1994). The focus of stakeholder theory, therefore,

is first, the purpose of the organization and second its benefit to the stakeholders (Dessler, 2003). It presents a useful framework for examining the connection between stakeholder management and achievement of various corporate performance goals.

The Theory presents stakeholders as groups with legitimate interests in procedural and substantive aspects of corporate activity Stakeholders are uniquely positioned to affect the performance of the organization through withholding or providing resources and infrastructure (Rowley & Berman, 2000). Firms, therefore, have an obligation to promote the interests of all stakeholders (Harrison & Wicks 2013). Post, Preston and Sachs (2002) posit that a firm can last over time only if it can meet or exceed the expectations of its key stakeholders such as customers, shareholders, employees, suppliers and competitors. Luk et al. (2005) claim that stakeholder orientation influences strategic planning and is therefore positively related to performance in terms of sales growth, market share, new product success and organization's corporate social performance. The theory contributes to strategic management theory by introducing the perspective that organizational performance can be viewed as the extent to which the organization has been effective in meeting the expectations of its stakeholders. The theory has been criticized for assuming that the interests of the various stakeholders of an organization can be balanced against each other. In this study, the stakeholder theory was used to inform the dependent variable.

2.2 Empirical Review

Protogerou, Caloghirou and Lioukas (2011) investigated the effect of dynamic capabilities on firm performance. The study particularly addressed the question of whether dynamic capabilities affected performance directly or indirectly. Data was collected from a sample of 271 firms drawn from a population of 1400 Greek firms belonging to various manufacturing industries, such as food and beverage industries, printing and publishing, chemical industries, industrial machinery and equipment. The data was collected using questioners administered on CEOs as key informants. Structural equation modelling was employed to explore the relationships between dynamic capabilities, functional competences and firm performance.

A similar study conducted by Ahsan, Naveed & Sajid (2019) sought to understand the role of dynamic capabilities in dealing with market uncertainties in Pakistan. Data was collected 516 participants drawn from small and medium enterprises using a self-administered questionnaire and analyzed using multiple regression techniques. The results of the analysis showed that organizational performance can significantly increase if a firm develops dynamic capabilities. A cross-sectional survey by Iqra and Ahmed (2019) sought to investigate the contribution of tangible and intangible resources and capabilities on performance. Primary Data was collected from 202 Pakistani business firms using a close-ended questionnaire. Data were analyzed using confirmatory Factor analysis and structural equation modeling. The results showed significant evidence that dynamic capabilities predict firm performance.

Nguyen (2008) studied the relationship between functional competence and firm Performance. The target population of the study was 4114 manufacturing firms identified through a website published by Vietnam Chamber of Commerce and Industry. Primary data was collected from 125 managers using a questionnaire administered through mail. Analysis of data using simple regression found that manufacturing firms that put emphasis on marketing, human resource and R&D competences earn higher Performance. The findings also showed that functional competence does not have a significant effect on market Performance.

An empirical survey was conducted by Dubey and Ali (2011) to understand how functional competence affects firm Performance. Functional competence was operationalized in terms of manufacturing competence. Financial and non-financial metrics were used to measure Firm Performance. The study used data collected from 450 manufacturing firms listed by the Confederation of Indian Industries using a mail survey. The data was analyzed using simple regression analysis. The study found that functional competence has no significant impact on firm Performance. One limitation of the study was that it ignored the effect of important competence such as finance and planning. These results contradicted previous studies which had found that functional competence positively affects firm Performance. One limitation of this study was that it used perceptual rather than objective measures of performance.

Empirical findings of the study suggested that dynamic capabilities are antecedents to functional competences which in turn have a significant effect on performance. The study also found that the direct effect of dynamic capability on performance is insignificant. The study concluded that the effect of dynamic capabilities on performance is mediated by functional competences. The results thus confirmed the contention by (Winter, 2003) that Dynamic Capabilities influence firm Performance through functional competences. The limitation of study was that it used self-reported data thus it had potential of survey biases and therefore the findings may not coincide with objective reality.

A Study by Agha, Alrubaiee and Jamhour (2012) investigated the relationship between Firm Competence and firm Performance. Core competence was operationalized in terms of shared vision, cooperation, and employee empowerment. Performance was operationalized in terms of competitive advantage measured tern's flexibility and responsiveness. Primary data was collected though an electronic survey administered on 77 managers of firms in the UAE paint industry. The study found that Firm Competence positively affects firm performance. The study concluded that to remain competitive, managers should increase firm performance by creating core competences.

Massoud (2013) investigated the impact of functional competence on firm performance. The survey used data collected from 62 managers of 17 companies manufacturing pharmaceuticals in Jordan using structured questionnaires. The study applied descriptive statistics, simple regression, and multiple regression procedures to test the hypothesis. The findings showed that functional competence has a significant effect on firm performance. The results also showed that production competence, and marketing competence have an impact on performance. Further results showed that IT system and human resource competencies do not have any effect on firm performance. One limitation of the study was that it ignored moderating variables such as management style and company size.

A study by Jabbouri & Zahar (2014) studied the effect of core competences on firm performance. The study collected primary data using a self-reported questionnaire administered on 200 managers in 10 private banks in Iraq. Results of data analysis showed a strong correlation between core competences and firm Performance. The value of this study was that it highlighted the importance of core competence in improving organizational performance.

A study by Rehman and Saeed (2015) investigated the effect of Dynamic Capabilities on firm Performance and the moderating effect of firm competencies on the correlation between Dynamic Capabilities and performance. Firm Competence was operationalized in terms of marketing capabilities and technical competences. The study categorized Dynamic Capabilities in terms of sensing capabilities, coordinating capabilities, learning capabilities, and integrating capabilities. Financial and non-financial measures were used to measure performance. Primary data was collected through questionnaires administered on 104 professionals working in the Pakistani paper sector. The data were analyzed using multiple regression analysis. The findings of the study suggested that firm competencies have a moderating effect on the relationship between Dynamic Capabilities and firm performance. The finding also suggested that Dynamic Capabilities have no significant effect on Performance

Broadly, evidence supporting relationship between Firm Competence and organizational Performance is mixed in terms of significance of the relationship. In addition, most studies were done in the context of developed countries. Studies on the mediating effect of Firm Competence on the relationship between Dynamic Capabilities and Performance of Food Manufacturing firms in Kenya are rare. Moreover, most studies on this relationship have considered only financial Performance.

2.3 Conceptual Framework

Based on theoretical models found in the literature review the conceptual framework shown in Fig. 1 was developed.

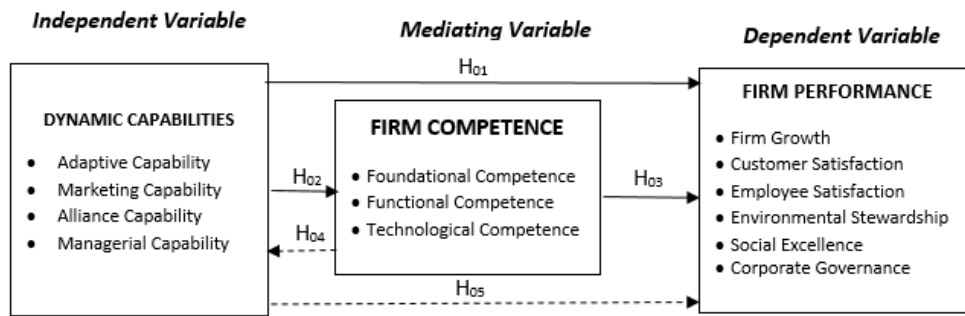


Fig 1: Conceptual model

Source: Authors 2020

In the model, it was hypothesized that Dynamic Capabilities affect the performance. The model further hypothesized that effect of firm Dynamic Capabilities on performance is mediated by firm competence. In this study, Dynamic Capabilities were operationalized in terms of adaptive capabilities, marketing capabilities, alliancing capabilities and managerial capabilities. Firm Competence, the mediating variable was operationalized in terms of foundational competence, technological competence, and functional competence. Performance, the dependent variable, was operationalized in terms of profit growth customer satisfaction, employee satisfaction, environmental stewardship, social excellence and corporate governance.

3. Research Methodology

This study inclined to positivistic view in order to obtain an objective view of the relationship between dynamic capabilities, firm competence and performance of selected food processing firms in Kenya. Positivism relates to the philosophical stance of the natural scientist and entails working with an observable social reality to produce law-like generalizations (Easterby-Smith, Thorpe & Jackson, 2008). It focuses on strict scientific empiricist method designed to yield pure data and facts free of human interpretation or bias. The positivist adopts the stance that the researcher will operate remotely from the social world and that evaluation of phenomena identified will be approached through objective methodologies (Stiles, 2003). Positivism derives a quantitative perspective which holds that there is an objective reality that can be expressed numerically with explanatory and predictive power (Neuman, 2006; Furrer, Thomas & Goussevkaia, 2008). Problem solving under this approach follows a pattern of formulating hypotheses in which assumptions of social reality are made and hypotheses tested often using quantitative techniques (Stile, 2003). The study shall involve formulation of hypothesis which shall then be tested using quantitative techniques based on facts obtained from data collected from both primary and secondary sources in a survey of food processing firms in Nairobi County, Kenya.

3.1 Research Design

Based on the purpose of the study and the philosophical orientation adopted, the study used a descriptive, causal and cross-sectional survey research design. This approach was chosen to achieve complementarity between the various paradigms and to discover what may not have been discovered if only one approach is used. Descriptive research is used to obtain information concerning the current status of a phenomena and to describe "what exists" with respect to variables (Saunders 2011). Bryman and Bell describe descriptive research design as an organized empirical enquiry where the researcher does not have direct control of the independent variable since its manifestation has already taken place and this reduces the possibility of bias. The explanatory research design looks for explanations on the nature of certain relationships and investigates the cause and effect relationship between variables (Saunders, 2009). This type of study design is associated with greater levels of internal validity due to systematic selection of subjects. This design was adopted to help the researcher understand how a change in dynamic capabilities impacts performance of manufacturing firms in Kenya. Cross-sectional research studies provide a clear 'snapshot' of the outcome and the characteristics associated with it, at a specific point in time. They entail collecting data at and concerning one point in time (Creswell, 2003). It assists the researcher to establish whether significant associations among variables exist at one point in time depending on the resources available and the target population (Saunders, Lewis & Thornhill 2007). This design has been chosen because it is

convenient and saves the researcher time and costs associated with longitudinal studies which involve taking multiple measures over an extended period.

3.2 Target Population

The target population for this study consists of 70 Food Manufacturing firms operating in Nairobi county Kenya and listed in the directory of manufacturers published by the Kenya Association of Manufacturers as of June 2018 KAM draws its membership from firms involved in manufacturing or value addition. The unit of observation was key persons responsible for Finance, Human resources, corporate affairs, Marketing, and Operations.

3.3 Sampling Procedure and sample Size

This study adopted the simplified method developed by Krejcie and Morgan (1970) for determination sample size for a finite population. According to Krejcie and Morgan (1970) the formulae of determining a sample size for a finite population is as follows;

$$s = \frac{X^2 NP(1-P)}{d^2 (N-1) + X^2 P(1-P)}$$

Where;

s = sample size needed.

X^2 = confidence level desired (3.841).

N = population size of population.

P = the population proportion

d = the degree of accuracy.

Informed by Krejcie and Morgan (1970) it was determined that a sample of 59 Firms would suffice for a population of 70. The 59 Firms were chosen using a ratio of 84% from each category to represent the entire population. The sample proportion has been computed as follows;

$$\text{Proportion} = \frac{\text{total sample size}}{\text{total population}}$$

$$59/70 = 84\%$$

The number of respondents per category was determined as shown in Table 1 below:

Table 1 Sample Frame

	Large Scale	Medium scale	Total
Number of enterprises	20	50	70
Proportion	84%	84%	84%
Sample size	17	42	59
Key departments per enterprise	5	5	5
Number of respondents in sample	84	210	294

Source: Author (2019)

This sample size of 295 was considered adequate based on (Cooper & Schindler, 2008) proposition that a sample of at least 30 must exist for generalization to take place.

3.4 Data Collection

Primary data was collected on indicators of dynamic capabilities, firm competence, and performance using semi-structured questionnaire. The instrument was adopted from strategic management studies that have studied similar variables with modifications aimed at addressing the specific objectives. Closed-ended questions were constructed on a 5-point Likert Scale to provide structured responses to facilitate quantitative analysis, testing of hypotheses and drawing of conclusion. However, open-ended questions were used to enable respondents provide additional information that would not be captured in the closed-ended questions. This method was preferred because of the

need to ensure reliability of responses from the respondents. Secondary data was obtained through document review of published sources including government publications KAM periodicals and Monthly Economic Review published by the Kenya National Bureau of Statistics.

The semi structured questionnaires were administered to senior managers responsible for Finance, Marketing, Human Resources and Corporate Affairs in each of the firms. These functional heads were presumed to be knowledgeable in the areas under study. To enhance the support from the organizations, the researcher presented a letter to each organization assuring them of confidentiality. The questionnaire was subjected to a pilot test on managers in five firms to refine the research questions and ensure reliability. The questionnaire was then adjusted based on feedback from the pilot test.

3.6 Validity of Research instrument

Validity refers to how accurately the data collected captures what it is purported to measure (Sekaran, 2011). In this study, Content validity was ensured by subjecting it to double check. To ensure that the questionnaire covers all the areas of the study which include dynamic capabilities, Firm Competence and performance. Content validity of the questionnaire items for the four research variables was verified through literature review and expert suggestions to confirm if theoretical dimensions emerge as conceptualized as recommended by (Mugenda & Mugenda 2003). The study was also informed by instruments developed by other related studies. Face validity of a research is a post hoc assessment of whether on the face of it, the instrument measures a certain construct (Field, 2013). To check for face validity, expert opinion was sought from supervisors and other faculty members (Creswell, 2003). The feedback from expert advice was used to review the questionnaire to ensure that it had face validity prior to conducting the study.

3.7 Reliability of Research Instrument

A pilot study was conducted to establish the extent to which the questionnaire would produce similar and consistent results under similar conditions. The pilot study was conducted among non-food manufacturing firms in Athi River sub county, Kenya to ensure that respondents would not participate in the main study. The internal consistency of the research instruments was measured using Cronbach's Alpha. According to Cooper and Schindler (2003), while a minimum threshold of 0.70 is recommended for exploratory work, a Cronbach's Alpha value above 0.50 is regarded as an indicator of reliability. In this study, the threshold for Cronbach's Alpha of the research instruments was set at $\alpha=0.6$ where variables with α greater than 0.6 were considered to have internal consistency or reliable.

The results of the reliability analysis showed that the questionnaire had an overall Cronbach's Alpha Coefficient of 0.857 The results shows that the questionnaire had an overall Cronbach's Alpha of 0.826 which was found to be suitable for this study. Based on the recommendations of (Field, 2009), and the threshold set for the study, the research questionnaire was found to be reliable.

4. Empirical Findings and Discussion

Descriptive statistics were computed to describe the characteristics of the variables in the study while multiple regression analysis was used to establish the nature and magnitude of the relationships between the independent and dependent variables. Measures of central tendency and dispersion were used to describe the study variables.

4.1 Analysis of Response Rate

An analysis of the responded rate for this study is shown in Table 2

Table 2 Analysis of Response Rate

Response	Frequency	Percent (%)
Returned Questionnaires	190	64.4
Unreturned Questionnaires	105	35.6

Total	295	100
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Source: Survey Data (2019)

A total of 295 questionnaires were distributed to selected food manufacturing firms in Kenya. 190 were filled and returned representing a response rate of 64.4%. According to Babbie (2004); Mugenda and Mugenda (2003) a threshold of 50% is adequate for a study of this nature. According to Wimmer and Dominick (2006), a response rate of 21% - 70% is acceptable for self-administered questionnaires. The overall response rate of 64% was found to be good for the analysis and reporting as it met the criteria by Wimmer and Dominick (2006). Unreturned questionnaires were attributed to factors such as the busy schedules of the respondents since the majority most of the targeted respondents were senior managers in their respective firms. The Demographic characteristics of the respondents are shown in Table 2 below

Table 3 Demographic Characteristics of Respondents

Gender	Frequency	Percent
Male	121	63.7
Female	69	36.3
Total	190	100
Years of service in organization		
1-3 years	26	13.7
4-5 years	56	29.5
more than 5 years	108	56.8
Total	190	100
Core Business		
Beverage Manufacturing	44	23.2
Flour Milling	37	19.5
Sugar Confectionery	24	12.6
Meat & Fish Processing	23	12.1
Dairy Processing	23	12.1
Edible Oil Refining	16	8.4
Bread and Pastry	11	5.8
Spice and Condiments	8	4.2
Honey Processing	4	2.1
Total	190	100
Age of firm	Frequency	Percent
Below 5	5	2.6
6-10 years	64	33.7
Over 10 years	121	63.7
Total	190	100

Source: Research Data (2019)

3.10 Descriptive Statistics

The respondents were asked to respond to statements on each of the variables on a scale of 1-5 Measures of central tendency specifically the mean and standard deviation were used in the study to summarize the characteristics of the variables under study. A summary descriptive statistics of the study variables is shown in Table 2 below.

Table 3: Summary descriptive Statistics of Study Variables

Variable	Listwise N	Aggregate Score	Std. Dev.
Dynamic Capabilities	190	3.96	1.250
Firm Competence	190	3.72	1.168
Firm Performance	190	3.55	1.083

Source: Research Data: 2019

The study sought to find out the extent to which firms had built adaptive capabilities over time Respondents were asked to rate the extent to which their firms had shown commitment to developing Dynamic Capabilities by responding to statements touching on adaptive capabilities on a scale of 1- 5 where 1= "not at all, "2" =Slight Extent", 3 = "moderate extent"4= To a high Extent and 5 = "very high extend". The overall aggregate mean score for commitment of resources to build dynamic capabilities stood at M-3.96 with a standard deviation of 1.250 showing that to a high extent, manufacturing firms commit resources to build Dynamic capabilities.

Firm competence was the mediating variable adopted for this study. Firm Competence was operationalized in terms of foundational competence, Technical competence and Functional competence as categorized by (Cockburn, Henderson & Stem 2000). Firm Competence was operationalized in terms of foundational competence, Technical competence and Functional competence as categorized by (Cockburn, Henderson & Stem 2000). Respondents were asked to state their opinion on the status of each competence shown in the questionnaire on a scale of 1-5 where 1 = "not applicable" 2- "Definitely False", 3=False", 4- "Mostly True" and 5 = "definitely true" Respondents were asked to state their opinion on the status of each competence shown in the questionnaire on a scale of 1-5 where 1 = "not applicable" 2- "Definitely False", 3=False", 4- "Mostly True" and 5 = "definitely true". Firm competence had an aggregate score of 3.72 with a standard deviation of 1.168 indicating that most of the firms had not built core competences.

Firm performance was the dependent variable for the study. The study took the perspective of (Epstein & Buhovac, 2008) that performance is the harmonization of economic environmental and social objectives in the delivery of core business activities to create value for its stakeholders. The variable was operationalized in terms of financial performance, customer satisfaction, employee welfare, social excellence, environmental stewardship and corporate governance. The respondents were required to rate their level of agreement or disagreement with statements pertaining to level of their firm performance on a scale of 1 to 5. Where: 1 = Below 0%, 2 - None (0%) 3= Between 1 - 10%, 4 = between 10 - 20%, over 20%. Results showed that the overall aggregate mean score for performance was 3.55 with a standard deviation of 1.083. Showing that overall performance of manufacturing firms grew between 1 % and 10% over the last three years

4.2 Tests of Hypotheses

In line with MacKinnon, (2011), Firm Competence is a mediator if: First, Dynamic Capabilities significantly accounts for change in Performance. Second, Dynamic Capabilities significantly accounts for change in Firm Competence. Third, Firm Competence significantly accounts for change in Performance when controlling for Dynamic Capabilities. Fourth, the effect of Dynamic Capabilities on Performance decreases significantly when Firm Competence is introduced to the module predicting Dynamic Capabilities from Performance. According to MacKinnon 2008, the Assumptions for mediation are that first, all variables are assumed to be measured on a continuous scale. Second, all variables follow a Normal distribution. Third, there is no correlation among errors and fourth, relationships among the variables are linear. To interpret the results, this study used the 3 model criteria suggested by (Weise, Figueredo, Garcia, Baca & Gable 2013 & MacKinnon, 2011) to test whether firm competence mediated the relationship between dynamic capabilities and performance of food manufacturing firms. According to Mackinnon (2011), variable M is a mediator if X significantly accounts for variability in Y, X significantly accounts for variability in M, M significantly accounts for variability in Y when controlling for X, and the effect of X on Y decreases significantly when M is introduced to the module predicting Y from X. Thus, the results of the regression model are interpreted using the coefficient of the predictor variable before and after mediation using the R^2 and the difference between the beta coefficients of the predictor variable. The total effect (path c) is the sum of the mediated effect (path ab or c-c') and the direct effect path c'). Complete mediation is observed when the mediated effect is statistically significant ($p < 0.5$) and the direct effect is not statistically significant ($P > 0.05$) implying that the mediated effect and total effect are equal (path ab = path c). Thus, if the direct effect (path c') is zero when the mediator is included in the model, then the relationship is entirely mediated by the mediating variable. If, the direct effect between the independent variable and the dependent variable is reduced after controlling for the mediator variable, but the direct effect is still significantly different from zero the mediation effect is said to be partial. Thus, in partial mediation, both the mediated effect and the direct effect are

statistically significant indicating that the mediator significantly accounts for part of the relation between the independent and the dependent variables (Path $ab \neq 0$ and path $c' \neq 0$). The study, therefore, tested the mediation effect using the causal steps method developed by (Baron & Kenny, 1986) to investigate whether the relationship between the three variables against these criteria at a significant level of $P=0.05$.

Step One: Dynamic Capabilities Predicting Firm Performance

Test of Hypothesis One: Dynamic Capabilities have no significant effect on Performance of Manufacturing firms in Kenya.

On the first step, firm performance was regressed on dynamic capabilities to test whether dynamic capabilities significantly accounted for the variability in firm performance of food manufacturing firms. The results of the analysis are summarized in Table 4.

Table 4 Total Effect of dynamic capabilities on Performance

Model Summary						
	R	R Square	Adjusted R Square	Std. Error of the Estimate		
1	0.655 ^a	0.429	0.426	0.49226		
ANOVA ^a						
		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	34.167	1	34.167	141.000	0.000 ^b
	Residual	45.556	188	0.242		
	Total	79.724	189			
Coefficients ^a						
		Unstandardized		Standardized		
		B	Std. Error	Beta	t	Sig.
1	(Constant)	1.076	0.211		5.094	0.000
	Dynamic Capabilities	0.693	0.058	0.655	11.874	0.000

a. Dependent Variable: Firm Performance

Source: Research Data (2019)

The results showed adjusted R-square =0.426 which implied that dynamic capabilities accounted for 42.6% of the variation in firm performance of food manufacturing firms in Kenya. The results for ANOVA F-statistics = 141.000, ($P = 0.000$) shows that the model was statistically significant. This means that dynamic capabilities are a significant predictor of performance of food manufacturing firms. The results for regression coefficient show that dynamic capabilities had $\beta = 0.655$ and P -value=0.000 which is significant at $P < 0.05$ and falls within the confidence interval. The relationship between dynamic capabilities and performance can be estimated in the following equation.

$$Y = 1.076 + 0.655 DC + \epsilon \dots\dots\dots(\text{Model 1})$$

The results show that there exists a significant relationship between dynamic capabilities and performance that can be mediated. The decision criteria were to fail to reject H_{01} if $\beta_1 = 0$ and $P > 0.05$. The results of multiple regression in Table 5, show that adaptive capabilities had $\beta_1 = 0.205$, p -value=0.008. Since $\beta_1 \neq 0$ and p were less than the significant level of 0.05, the study rejected H_{01} implying that dynamic capabilities have a positive and significant effect on the performance of food manufacturing firms in Kenya.

Step Two: Dynamic Capabilities Predicting Firm Competence

Test of Hypothesis Two : H_{02} : Dynamic Capabilities have no significant effect on Firm Competence of Manufacturing firms in Kenya

The third model was fitted to test whether there is a significant interaction between the predictor (dynamic capabilities) and the mediator variable (firm competence). The results of the analysis are summarized in Table 5.

Table 5 Relationship between Dynamic Capabilities and Firm Competence

Model Summary						
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate		
1	0.646 ^a	0.417	0.414	0.84740		
ANOVA ^a						
Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	95.730	1	95.730	133.312	0.000 ^b
	Residual	133.564	186	0.718		
	Total	229.294	187			
Coefficients ^a						
Model		Unstandardized		Standardized		
		B	Std. Error	Beta	t	Sig.
1	(Constant)	-0.333	0.356		-0.934	0.351
	Dynamic Capabilities	1.141	0.099	0.646	11.546	0.000

a. Dependent Variable: Firm Competence

Source: Research Data (2019)

The results show that dynamic capabilities accounted for 41.4% (adj.R. Square =0.412) of the variation in firm competence. The study conducted an analysis of variance to determine the significance of the model. The results for ANOVA showed a (F-statistics = 131.312 (p=0.000)). This confirmed that dynamic capabilities are a significant predictor of firm competence. The results for regression coefficient show that dynamic capabilities composite had β - 0.646, p-value = 0.000, meaning that there is a significant interaction between dynamic capabilities and firm competence. *The Study, therefore, rejected the null Hypothesis that Dynamic Capabilities have no effect on Firm Competence.*

$$FC = -0.333 + 0.646 DC + \epsilon \dots\dots\dots (Model 2)$$

Step Three: Dynamic Capabilities Predicting Firm Performance in the Presence of Firm Competence

Test of Hypothesis Tree H₀₃: Firm Competence has no mediating effect on the effect of Dynamic Capabilities on Performance of Manufacturing firms in Kenya

In the third step the model was fitted to test whether firm performance of food manufacturing firms decreases significantly when firm competence is introduced to the model predicting performance from dynamic capabilities. The results of the analysis are captured in Table 6.

Table 6. Dynamic Capabilities predicting Performance in the presence of Firm Competence

Model Summary						
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate		
1	0.666 ^a	0.443	0.437	0.78070		
ANOVA ^a						
Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	89.721	2	44.861	73.604	0.000 ^b
	Residual	112.755	185	0.609		
	Total	202.476	187			
Coefficients ^a						
Model		Unstandardized		Standardized		
		B	Std. Error	Beta	t	Sig.
1	(Constant)	-0.209	0.329		-0.635	0.526
	Dynamic Capabilities	0.868	0.119	0.523	7.276	0.000
	Firm Competence	0.183	0.068	0.195	2.709	0.007

a. Dependent Variable: Firm_Performance

b. Predictors: (Constant), Dynamic Capabilities, Firm Competence

Source: Research Data (2019)

The results of goodness of fit show an adjusted R Square = 0.437. This meant that dynamic capabilities and firm competence accounted for 43.7% of the variation in firm performance of food manufacturing firms. The study conducted an analysis of variance to determine the significance of the model. The results for ANOVA showed (F-statistics = 73.604 (p = 0.000). This confirmed that the model significantly predicted firm performance of manufacturing firms in Kenya. The results for regression coefficient show that dynamic capabilities ($\beta = 0.523$, P-value = 0.000) and firm competence ($\beta = 0.195$ with a p-value = 0.007) showing that dynamic capabilities significantly predicted firm performance even after introduction of Firm Competence. The results are estimated in the equation below

$$Y = -0.209 + 0.523 DC + 0.195 FC + \varepsilon \dots\dots\dots (\text{Model 3})$$

The results show that the effect of Dynamic capabilities on performance in step 1 ($\beta = 0.642$) was higher than $\beta_2 = 0.523$ in step 3. Furthermore, adjusted R-squared increased when competence was introduced as a mediator. The analyses in steps 1-3 thus identified firm competence as a potential mediator of the relationship between dynamic capabilities and performance of food manufacturing firms. Table 5 shows a summary of the tests for mediation.

Table 7 Summary of Mediation effect Test results

Parameter	Model			Change	conclusion
	1	2	3		
β_0	1.076	-0.333	-0.209	1.285	Reject H_{03} There is
β_{DC}	0.655	0.646	0.523	0.132	evidence of Partial
β_{FC}			0.195	-0.195	mediation
Adj. R^2	0.426	0.414	0.437	-0.011	
F	141.00	133.312	73.604	67.396	
P	0	0	0		
	0.000	0.000	0.000		
Path a = 0.646, b = 0.195, c = 0.655, c' = 0.523					

Source: Research Data (2019)

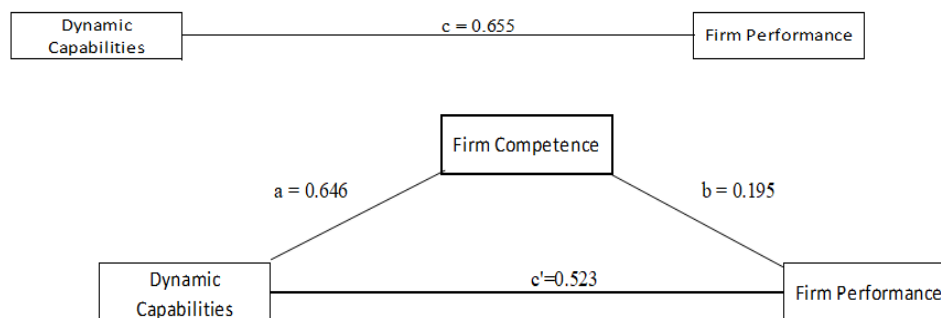


Figure 2 Path Diagram for Dynamic Capabilities, Firm Competence and Firm Performance

Source: Research Data (2019)

When firm competence is introduced in the model predicting firm performance from dynamic capabilities, β is reduced to 0.523 but remains significant at $P = 0.000$. Furthermore, in model 1, dynamic capabilities account for 42.9% of the variation in firm performance but when firm competence is introduced in the model, both variables account for 43.7%. The study also observed that path $ab \neq 0$ and path $c' \neq 0$. Based on the criteria set, the study concluded that Firm competence partially mediates the relationship between, dynamic capabilities and performance of food manufacturing firms.

To determine the indirect effect of dynamic capabilities on performance after introduction of firm Competence, the study used the difference in coefficients method based on information from regression equations in model 1, model 2, and model 3 as recommended by (Mackinnon, Lockwood, & Williams, 2004; Baron & Kenny 1986). Table 8 shows the total, direct and indirect effect of dynamic capabilities on performance of food manufacturing firms in Kenya.

Table 8 Total, direct, and indirect effects of dynamic capabilities on performance

		SE	Sig
Total Effect	0.655	0.49226	0.000
Direct Effect	0.523	0.78070	0.000
Indirect Effect	0.132		

Source: Research Data (2019)

Using difference in Coefficients method, the study determined that firm competence accounts for 13.2% of the effect of dynamic capabilities on performance. *The Study therefore failed to accept the Null hypothesis that Firm competence does not mediate the relationship between dynamic capabilities and performance of manufacturing firms.*

Test of Hypothesis Four: H₀₄: Firm Competence has no significant effect on Dynamic Capabilities of Manufacturing firms in Kenya. The study investigated the mediating effect of dynamic capabilities on the effect of firm competence on firm performance. On the first step, firm competence was regressed on performance to determine whether there was a relationship that can be mediated. The results are summarized in Table 9 below

Table 9 Relationship between Firm Competence and Firm Performance

Model Summary						
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate		
1	.531 ^a	.282	.278	.54849		
ANOVA ^a						
Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	21.960	1	21.960	72.997	.000 ^b
	Residual	55.956	186	.301		
	Total	77.916	187			
Coefficients ^a						
Model	Unstandardized Coefficients			Standardized Coefficients	t	Sig.
	B	Std. Error	Beta			
1	(Constant)	1.285	.267		4.804	.000
	Firm Competence	.609	.071	.531	8.544	.000

a. Dependent Variable: Firm PERFORMANCE b. Predictors: (Constant), Firm Competence

Source: Survey data 2020

Results of regression showed an adjusted R²=.278 which implied that Firm competence accounts for 27.8% of the variation in performance. The results for ANOVA F-statistics = 72.997, (P = 0.000) which shows that the model was statistically significant. This means that firm competence is a significant predictor of the performance of food manufacturing firms. The results for the regression coefficient show that firm competence had $\beta = 0.710$ and P-value=0.000 which is significant at P < 0.05.

Performance = 1.285+ 0.609 Firm Competence + ϵ (Model 5)

In the next step, firm competence was regressed on dynamic capabilities to determine the effect of the former on the latter. The results are summarized in Table 10 below....

Table 10: Effect of Firm Competence on Dynamic Capabilities

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate		
1	.656 ^a	.431	.428	.46301		

ANOVA ^a						
Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	30.360	1	30.360	141.618	.000 ^b
	Residual	40.089	187	.214		
	Total	70.448	188			

Coefficients ^a						
Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	.926	.224		4.135	.000
	Firm Competence	.710	.060	.656	11.900	.000

a. Dependent Variable: Dynamic capabilities b. Predictors: (Constant), Firm Competence

Source: survey Data 2020

Results of regression showed an adjusted $R^2=42.8$ which implied that Firm competence accounts for 42.8% of the variation in dynamic capabilities. The results for ANOVA F-statistics = 141.618, (P = 0.000) shows that the model was statistically significant. This means that firm competence are a significant predictor of dynamic capabilities of food manufacturing firms. The results for the regression coefficient show that firm competence had $\beta= 0.710$ and P-value=0.000 which is significant at $P < 0.05$. Since $\beta \neq 0$ and $P < 0.05$, the study failed to accept H_4 that Firm competence does not affect a firm's dynamic capabilities. The relationship between firm competence and dynamic capabilities can be estimated in the following equation.

$$D_{\text{ynamic Capabilities}} = 0.926 + 0.710F_{\text{irm Competence}} + \epsilon \dots \dots \dots (\text{Model 6})$$

Test of Hypothesis Five: H_{05} : Dynamic Capabilities have no mediating effect on the effect of Firm Competence on Performance of Manufacturing firms in Kenya

The next step involved regressing firm competence on performance in the presence of dynamic capabilities. The results are summarized in Table 11 below.

Table 11: Firm Competence Predicting Performance in the Presence of Dynamic Capabilities

Model Summary						
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate		
1	.673 ^a	.453	.447	.48002		

ANOVA ^a						
Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	35.290	2	17.645	76.578	.000 ^b
	Residual	42.627	185	.230		
	Total	77.916	187			

Coefficients ^a						
Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	.751	.244		3.071	.002
	Firm Competence	.200	.082	.174	2.431	.016
	Dynamic Capabilities	.577	.076	.546	7.606	.000

a. Dependent Variable: Firm PERFORMANCE, b. Predictors: (Constant), Dynamic Capabilities., Firm Competence

Source: Survey Data: 2020

Results of regression showed an adjusted $R^2=0.447$ which implied that Firm competence and dynamic Capabilities account for 44.7% of the variation in firm performance. The results for ANOVA F-statistics = 76.578, ($P = 0.000$) show that the model was statistically significant. This means that firm competence is a significant predictor of the dynamic capabilities of food manufacturing firms. The results for regression coefficient show that firm competence had $\beta = 0.200$ ($P\text{-value}=0.016$) which is significant at $P < 0.05$ and Dynamic capabilities had $\beta = 0.577$ ($P=0.000$) which is significant at $P < 0.05$. The relationship between firm competence, dynamic capabilities and performance can be estimated in the following equation.

$$F_{\text{firm Performance}} = 0.751 + 0.2F_{\text{firm Competence}} + 0.577 D_{\text{ynamic Capabilities}} + \epsilon \dots \dots \dots (\text{Model 6})$$

When dynamic capabilities are introduced in the model predicting firm performance from firm competence, β is reduced to 0.200 but remains significant at $P=0.016$. Furthermore, in model 4, Firm competence accounts for 27.8% of the variation in firm performance but when dynamic capabilities are introduced in the model, both variables account for 44.7%. The study concluded that dynamic capabilities partially mediate the relationship between, Firm Competence and performance of food manufacturing firms. The study, therefore, rejected H_{05} that Dynamic capabilities do not mediate the relationship between Firm Competence and Firm performance. These findings are in line with the findings of (Galavan, 2015)) who suggested that dynamic capabilities are a learning experience whereby firms use capabilities to combine resources to create competences and using feedback from implementation of core competencies to create a higher level of capabilities which in turn creates higher levels of competences.

Findings from descriptive statistics showed that to a great extent, food manufacturing firms had built these competencies and this resulted in an increase in performance by 10%. Foundational competencies such as oral and written communication skills, creative problem solving, , teamwork skills, customer focus, dependability, and professionalism to a great extent determine the level of firm performance. These competencies not only increase productivity in food processing firms, but they also enhance firm reputation which in turn enables the firms to command premium prices for their products, pay lower prices for inputs and entice top recruits which in turn helps in stabilizing performance. Functional competencies influence performance by linking firms to their markets, allowing them to do things with a high degree of reliability and flexibility.

In line with the competence-based theory, and Teece (2004), firm competencies that do not create non-imitable products are not core, do not give the firm sustainable performance and competitive advantage. Unique products can only be made when the firm possesses highly specialized skills and equipment. They enable firms to develop a unique position in relation to Competitors and to consistently outperform them (Azak, 2004). By building unique competencies, food manufacturing firms insulate themselves from the competition and can remain operational. By focusing on their core competencies, food manufacturing firms get competitive advantage by doing the things which they excel at.

The biographical data showed that each food processing firms specialized in one core subsector and built competences in that one area only. For instance, flour milling, dairy processing edible oil manufacturing firms were not involved in any other food processing activity. Furthermore, the firms had taken measures to protect their specialized skills and competences from being poached by competitors, the study sought to establish how manufacturing firms in Kenya ensured that competences imbibed in their skilled staff were not poached by competitors.

The findings in this study support the findings of Hodgkinson & Sparrow, (2006); Dubey & Ali (2011), Agha, Alrubaiee & Jamhour, (2012); Özbağ, (2013); Jabbouri & Jahaz, (2014), Bahri & Yahya, (2015) that firm competence has a significant effect on performance. The findings of the study disagreed with those of (Nguyen, 2008) who showed that competence does not have a significant effect on firm performance. The findings help in filling the knowledge gap left by other studies by providing evidence that dynamic capabilities mediate the relationship between firm competence and firm performance.

5. Summary of Findings

The summary of findings is shown in Table 12 below

Table 12 Summary of Findings

Hypothesis	Decision criteria	Finding	Conclusion
H₀₁ : Dynamic Capabilities have no significant effect on Performance of Manufacturing firms in Kenya.	Reject H ₀₁ if P < 0.05	$\beta = 0.655$, P=0.000	Reject H ₀₁ Dynamic Capabilities have a significant effect on Performance of Manufacturing firms in Kenya
H₀₂ : Dynamic Capabilities have no significant effect on Firm Competence of Manufacturing firms in Kenya	Reject H ₀₁ if P < 0.05	$\beta = 0.646$, p-value = 0.000	Reject H ₀₂ Dynamic capabilities are a significant predictor of firm competence. of Manufacturing firms in Kenya
H₀₃ : Firm Competence has no mediating effect on the effect of Dynamic Capabilities on Performance of Manufacturing firms in Kenya	Reject H ₀₃ if β in step1 > β_2 in step 3.	In Step 1 $\beta = 0.655$, Step 3 $\beta = 0.523$, P = 0.000)	Reject H ₀₃ Firm Competence partially mediate the effect of Dynamic Capabilities on Performance of Manufacturing firms in Kenya
H₀₄ : Firm Competence has no significant effect on Dynamic Capabilities of Manufacturing firms in Kenya.	Reject H ₀₄ if P < 0.05	$\beta = 0.710$ and P-value=0.000 which is significant at P < 0.05.	Reject H ₀₄ . Firm Competence has a significant effect on Dynamic Capabilities of Manufacturing firms in Kenya.
H₀₅ : Dynamic Capabilities have no mediating effect on the effect of Firm Competence on Performance of Manufacturing firms in Kenya	Reject H ₀₃ if β in step1 > β_2 in step 3.	In step1 $\beta = 0.710$ in step3 0.200 but remains significant at P=0.016	Reject H ₀₅ . Firm Competence has a significant effect on Dynamic Capabilities of Manufacturing firms in Kenya

Source: Author (2020)

7. Conclusion

Based on the summary findings several conclusions can be made. First, the findings of this study show that dynamic capabilities have a direct and positive effect on organizational performance. Therefore, increasing dynamic capabilities can increase overall firm performance of food manufacturing firms. Second the study concludes that firm competences have a positive effect on the performance of food manufacturing firms. Third, the study further concludes that firm competences partially mediate the relationship between dynamic capabilities and performance. Fourth, Dynamic Capabilities mediate the effect of Firm Competence on Firm Performance. Fifth, Firm Competence Mediates the effect of dynamic capabilities on performance. The dual effect of firm competence and dynamic capabilities supports the theory that dynamic capabilities help firms to configure resources to create competences which results in superior performance. VRIO competences enable firms to build higher level capabilities which results in higher levels of competence which in turn enhances performance and the circle goes on and on. This is how firms achieve sustainable performance. Therefore, manufacturing firms can increase their performance by building and applying both dynamic capabilities and firm competences. Sixth Dynamic capabilities and firm competence act as both a mediator and predictor variables. The study concludes that firms use dynamic capabilities to configure resources to build unique competences. These competences enable them not only to achieve superior performance but also to build higher order capabilities which they use to reconfigure resources to build core competences to achieve superior performance and the circle repeats itself. The continuous sharpening of competences and dynamic capabilities is what creates sustainable performance.

8. Policy Implications and Recommendations

From the findings of this study, several policy implications can be drawn for effective, application of dynamic capabilities in food manufacturing firms in Kenya. First, dynamic capabilities were found to have a significant effect on the performance of the respondents' firms. Consequently, management of manufacturing firms should deliberately build dynamic capabilities to enable them to scan the environment for opportunities, threats and technologies that will inform their strategies on how to respond to changes in the market. Moreover, manufacturing firms should build resilience to enable them to survive and adversities and unforeseen changes in the market. Further, the study recommends that management of manufacturing firms create environment for employees to offer solution besides traditional strategies to effectively respond to market disruptions.

Most of the firms scored low on some aspects of foundational competences especially on existence of anti-corruption policies. Noting the importance of having sound values for all employees at the workplace irrespective of their function in the organization, the study recommends that manufacturing firms review their anti-discrimination and anti-corruption policies to enhance their foundational competences. Furthermore, most of the respondents indicated that both their superior brands and specialized skills could easily be replicated or poached by competitors. In this regard, the study recommends that manufacturing firms develop measures to protect their competitiveness by developing functional competences that cannot be easily replicated or poached by their peers.

According to Schoemaker, Heaton and David Teece (2018), the world in which today's businesses operate has become not only riskier but also more volatile, uncertain, complex, and ambiguous (VUCA). Consequently, organizations are counting more on their core competences and dynamic capabilities to secure their financial success and their market positions (Hamel & Prahalad, 1994, Teece, 2007). Firm strategy in food manufacturing firms in Kenya, therefore, must shift focus from competing for product or service leadership to competing in firm competence leadership.

9. Limitations

The study was not without limitations. First there study was done in Nairobi County, the capital of the Republic of Kenya, a location that had different infrastructure from the rest of the country. The results may therefore not be generalizable to other locations with different circumstances. Secondly, the study was done in only the food subsector and therefore not all results may be easily generalizable to other manufacturing subsectors.

10. Contribution of the study to Knowledge

This study contributes to the general body of knowledge in several ways. First, it contributes the ongoing discourse on why some firms perform better than others by empirically testing the effect of dynamic capabilities on performance for food manufacturing firms in Kenya. Second, it helps in settling the dispute on the role of dynamic capabilities on firm performance. Previous scholars have argued that dynamic capabilities are mediators, predictors, and moderators of firm performance. Third, this study establishes empirically that dynamic capabilities positively and significantly influence the performance of manufacturing firms. Third, this study contributes to the discourse on the relationship between dynamic capabilities and firm competence and their role on firm performance. It establishes that firm competences mediate the effect of dynamic capabilities on firm performance. Fourth, this study lays a foundation for future research on the interaction between dynamic capabilities, firm competence and firm performance.

11. Recommendations for future Studies

This study recommends several areas of further research. First, the study shows that Dynamic Capabilities, explained 43% of the variation in performance food manufacturing firms. The study recommends that further studies should focus in establishing other factors that account of the remaining 65.6% of the variation in performance of the food manufacturing firms in Kenya. Second, further studies should also focus on other sectors

such as the service sector to get more insights on how dynamic capabilities interact with competence to influence performance in the service sector.

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