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Literature Review on Digitalization and Financial Performance

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Abstract

The purpose of this study is to summarize research on digitalization and emphasize how it affects financial performance. Additionally, applicable methodology from recent studies in a variety of domains is shown in this study. The state-of-the-art in digitalization research is described in this review article, which combines technology, finance, marketing, and innovation literature. In recent years, research on digitalization has expanded rapidly in a number of domains, employing both qualitative and quantitative techniques. The elements that affect an organization's financial performance as a result of its digitalization—such as big data analytics, cloud computing, artificial intelligence, process automation, the Internet of Things (IoT), computer simulations, and online technology—have been the subject of more recent studies. Even if studies on digitalization have been more popular over the past five years, adding new dimensions and investigating qualitative methods remain fascinating areas of study. For academics who are unfamiliar with digitalization, this article provides an overview of how to explore the process. The article enhances the review of the impact of digitization on financial performance.

Keywords: Digital Maturity, Digital Transformation, Financial Performance, Indonesia, Literature Review, Organization

1. Introduction

As the fourth digital wave picks up speed, data-driven digital technologies are starting to alter how firms function, invest, and even organize (Chen & Srinivasan, 2019). Features like cloud computing, big data, AI, machine learning, and automation are examples of data-driven digital technologies. In the global economy, the aforementioned digital technologies are becoming more and more common. Furthermore, the development of information technology has altered societal evolution and people's way of life. The idea of digitalization has likewise evolved from a little, far-off concept to a ground-breaking, real-world vision. It also seriously disrupts practically every worldwide industry (Bughin et al., 2017; Schwab, 2017).

The digital era began in the 1990s with the development of information technology. Because of information inequality at the time, the digital gap began to separate things according to the calibers of the information they carried (Yoo, 2013). Furthermore, the term "digitalization" no longer refers to using computers; rather, it now frequently refers to the idea that using digital technology has an impact on how individuals or organizations engage with their customers (Loonam et al., 2018). According to Gimpel & Röglinger (2015), digital technology use has

resulted in a paradigm change that has a significant impact on all facets of existence, including individual lives, human civilization, and even the most traditional organizations. These occurrences demonstrate how consumers are greatly impacted by digitalization and its products. (Brynjolfsson & McAfee, 2014).

Not only do consumers and tech-based firms benefit from the usage of digital technology, but non-tech corporations have also been won over by other purportedly important advantages (Weill & Woerner, 2018). Even some non-tech companies have chosen to break with their status quo and widely implement digital technology due to the overwhelming public attitude that favors digitalization (Bass, 2018). Furthermore, the need for consumer data is a major factor in non-tech companies' use of digital technology, as data is today considered the most valuable asset a company can own (Sadowski, 2019). The rapid adoption of digital technology is becoming more and more necessary as a result of the systemic consequences of digitalization on customers and trade.

Trends in digital technology have impacted not just three or four distinct locations but the entire planet. According to BBVA Research's Multidimensional Index of Digitization (2018), Since 2018, developed countries such as Singapore, Luxembourg, the United States, Hong Kong, and the Netherlands have acknowledged the importance of advanced digital technology. Emerging nations still have a lot of digital potential, even though they are now stuck in a digital rut. These circumstances in poor countries are caused by problems with logistics and human resource readiness, which exacerbates the digital divide among the people living there (UNCTAD, 2018). One of the largest developing nations, Indonesia, offers enormous promise in the field of digital technology. They came up with a bold goal to surpass the top digital economy in ASEAN by 2020 (Das et al., 2016). Although Indonesia has not yet entered the digital revolution, it is possible and approaching even more swiftly than countries like South Korea (Barquin et al., 2019). According to Barquin et al. (2019), up to one-third of the businesses in Indonesia's commerce sector have used digital technologies. Since almost all Indonesian firms view digital technology as a vital tool for future planning, it is anticipated that the numbers will rise in the years to come. It demonstrates how digitization is spreading and is set to become a trend that will alter how companies run.

Despite popular belief, putting digital technology into practice comes at a price. Opportunity costs are inescapable since investing in digital technology requires organizations to make financial sacrifices. It is undeniable that these investments are not cheap, even in spite of claims that it is more costly for a business to stick with the status quo and avoid going digital (Dery, 2018). According to ASEAN research conducted in 2020 in Indonesia, 73% of Indonesian businesses think adopting digital technology will be extremely costly. To afford digital technology, Indonesian enterprises need to invest anywhere from USD 500,000 to USD 5 million (Indonesia Data Corporation, 2019). Businesses should invest this much in integrating digital technology into their operations, but there's no guarantee that they will be successful, which adds to the uncertainty for these companies (Forbes, 2019).

A few large Indonesian publicly traded corporations have begun adopting digital technologies since the 2010s. Including digital technologies in their value chains is their goal. Companies also follow the trends, even when they require them to make large upfront investments. MNC Group, which has been using cutting-edge digital technologies since the 2010s, is one example of this. Big data analytics and artificial intelligence have also been adopted by other major corporations, such as PT Telekomunikasi Indonesia (Persero) Tbk, in order to improve customer experience. These public companies are encouraged to spend so much money on these technologies because they can afford to do so.

Additionally, they believe that investing in new technologies and making the necessary sacrifices is a short-term commitment that will ultimately improve their performance and prospects. Due to the fact that companies listed on the Indonesian capital market are still becoming used to the digital age, it does not apply to all publicly traded companies in Indonesia. The circumstances suggest that some companies have not yet embraced digital technology or are still in the process of exploring it. (Otoritas Jasa Keuangan, 2019).

Evaluating how well a business or organization is implementing digital transformation is still growing more difficult. Academic institutions and consulting organizations are making measurements of digital transformation. For instance, digital maturity, according to Deloitte and MIT Sloan, is about a company adjusting to compete in an increasingly digital environment effectively (Kane et al., 2017). As a result, it's a never-ending process. Digital

maturity, according to BCG and other organizations, is a gauge of a business's capacity to generate value from its digital assets (BCG, 2020). It is also a crucial success factor for businesses undergoing digital transformation. In conclusion, the term "digital maturity" was created to describe a business's capacity and willingness to adapt and use cutting-edge technology in line with market trends in order to stay competitive (Eremina, Lace, & Bistrova, 2019).

Previous studies indicate that there hasn't been a lot of scholarly research done on this topic worldwide. According to Wroblewski (2018), there is a shortage of research in this field, which leaves businesses even less certain about whether access to digital technology or a company's "digital maturity" will positively affect its bottom line. There has never been a solitary empirical study conducted in Indonesia. For certain companies, the number of case studies is limited. Considering the increasing use of digital technology in Indonesian public enterprises, this study aims to determine whether the digital maturity of these organizations enhances their financial performance. The main rationale for the decision is the presence of digital technology in certain Indonesian state-owned enterprises. There are possibilities to make sure they have benefited from the use of these technologies. A summary of the relationship between a company's degree of digital maturity and its financial success will come from an empirical examination of this matter.

As a result of its successful efforts to get certain public firms to engage in digital technology, Indonesia is becoming a more digitally mature nation (McKinsey & Company, 2019). Some organizations are still considering making these investments despite the fact that 73% of Indonesian businesses view them as extremely costly (Epson ASEAN, 2020). Some people are also hesitant to engage in this new technology because of the many uncertainties they bring to their organizations (Forbes, 2019). The lack of practical studies and the scarcity of foreign academic research on the effects of digital maturity on the financial performance of Indonesian enterprises further contribute to the uncertainty. Given that Indonesia aims to be the largest digital economy in ASEAN, it is interesting to find out if a company's digital maturity supports its financial performance metrics, particularly profitability, sales growth, and stock performance (Das et al., 2016; Chen & Srinivasan, 2019; Eremina et al., 2019). The study's outcome and findings might also give publicly traded businesses that are still unsure about using digital technologies a general overview.

Additionally, they might be able to assist these businesses in projecting future outcomes for financial performance indicators like profitability, sales growth, and stock return when they advance their degree of digital maturity. In order to address the challenges, the aims of these outcomes are developed once the backdrop and problem identification have been explored. This study aims to ascertain whether, in contrast to popular opinion, Indonesian public firms' digital maturity has a substantial influence on their financial performance assessments.

2. Literature Review

2.1. Digital Maturity

When a business chooses to become digital, it goes through a process known as digital maturity, which is the slow process of the business adjusting to its new digital competitive environment (Kane, 2017). Making the company more competitive and agile in comparison to its contemporaries in the market and industry is the main goal. The amount of digital activity that the company discloses quantifies its level of digital maturity. One of the key differentiators in corporate rivalry is now the firm's digital element, which is driven by IT deployment (Manyika et al., 2015). As a result, in order to stay up with the trends, more businesses will be spending money and resources to increase their degree of digital maturity. Six widely used technologies can be used to test various aspects of digital maturity: big data analytics, cloud computing, artificial intelligence, process automation, the Internet of Things (IoT), computer simulations, and online technology (Sebastian et al., 2017). There are more dimensions, like internet technologies (Eremina et al., 2019).

2.1.1. Big Data and Data Analytics

Chen et al. (2012) defined big data as a set of huge, complicated data that need specialized storage, management analysis, and visualization tools. Analytical technologies known as big data analytics, or just data analytics, are

employed in the management of large amounts of data. The main goal of big data analytics is to increase the caliber of products and services that companies offer through the use of information and communication technology systems, as well as to streamline corporate procedures and increase their effectiveness (Loebbecke & Picot, 2015; Majchrzak & Malhotra, 2013; Spanos et al., 2002). Companies can anticipate current patterns and project future trends based on historical and supplementary data that they have saved, thanks to the availability of information and data. Because consumer behavior is so easily monitored and analyzed, businesses are able to provide personalized advertising campaigns and get to know their customers better. Walmart is one example of a company that uses big data analytics to optimize inventory costs by analyzing consumer behavior to estimate their requirements for inventory levels at any time of the year (Walker, 2015).

2.1.2. Cloud Computing

According to Surbiryala & Rong (2019), cloud computing is a model that allows users to easily, endlessly, and whenever they want to access a shared pool of computer resources over the network. First and foremost, because cloud computing is internet-based, it can be instantly scaled to the specific needs of each firm. As a result, the business may easily scale back or up the amount of storage that the cloud offers with only a small bottleneck. Second, they stand out because they use a pay-as-you-go method that lets them pay only for the services they actually use, increasing the data storage system's cost-effectiveness. Thirdly, by doing away with physical hardware infrastructure that would make it more difficult to add or remove more analytical techniques, cloud computing will increase the company's flexibility. In addition, cloud computing provides significant benefits to users, such as lower upfront costs associated with traditional computing resources, lower staff salaries for managing the system and database, flexible scheduling of the use of computing resources and services, and anytime, anywhere access to the cloud (Kim, 2009)

2.1.3. Artificial Intelligence and Process Automation

Artificial intelligence (AI) is a field of study that characterizes robots' capacity for human-like learning, comprehension, and behavior recognition (Alsedrah, 2017). Artificial Intelligence (AI) is renowned for its astounding benefits, including cost-effectiveness, dependability, and the capacity to make decisions and handle complex challenges. Furthermore, it also guards against database data loss. Reinforcement learning, an analytical tool based on real-world success and failure testing to improve the readability of programs, is another feature of AI that sets it apart from other systems. Humans learn from their failures (Sadek & Chowdury, 2012). Artificial intelligence technologies are also very important in business because of their advanced reinforcement learning tools (Nadimpalli, 2017). By guiding and tracking each cargo's movements despite their locations and time zone differences, shipping businesses can utilize it to make sure they can move the cargo with which they are dealing effectively. Additionally, the banking and finance industries can utilize it to evaluate various concerns and ensure that their business is free from hostile and suspicious activity (Thiemann, 2018).

2.1.4. Computer Simulations

A computer program designed to investigate the approximate behavior of a mathematical model using step-by-step procedures is known as a computer simulation (Winsberg, 2013). Algorithmic models are used in computer simulation to determine the system's state at each instant. The process of conceptualizing a mathematical model requires this computation. Agent-based simulations, equation-based simulations, multiscale simulations, and Monte Carlo simulations are the four main categories of computer simulations.

Equation-based simulations are typically employed in the sciences, where the process of building mathematical models based on differential equations is guided by governing and absolute theories. The second is agent-based simulations, which are typically employed in the social, behavioral sciences, and other fields studying how a group of people interacts over a network. Multiscale simulations, which incorporate modeling components from several scales, are the third kind. A hybrid modeling approach will be produced by further dissecting the defined modeling pieces through the stimulation of lower-level descriptions (Winsberg, 2019). The last method is the Monte Carlo Simulations, which compute a mathematical model property by generating randomness using computer

techniques. In order to compute alternate attributes for the system, this simulation model mimics the deterministic system (Grune-Yanoff & Weirich, 2010).

2.1.5. Internet of Things (IoT)

The Internet of Things, or IoT, is a set of network technologies that use information-sensing devices to establish protocols to connect any tools or objects to the internet (Patel et al., 2016). When a business uses IoT technology, significant benefits are anticipated since it increases productivity and communication quality, automates processes and controls vast amounts of data to produce faster and more accurate results, and cuts down on expenses and task completion times. The Internet of Things is also expected to have macroenvironmental benefits, such as improving living standards through more comfortable daily living, creating new IoT-focused business opportunities that will drive economic growth and job creation, and reducing environmental effects through resource conservation (Soumyalatha & Hegde, 2016).

2.1.6. Online Technologies

According to Reid & Lorenz (2008), The global, publicly accessible networks of networks that are linked by networking technologies and allow users to exchange data, resources, and services are collectively referred to as the Internet. There are many different technologies on the internet, including webpages, which are essentially collections of pages and material designated by a domain name. It has been demonstrated that these internet technology components offer many benefits for both society and commercial enterprises. According to Berisha-Shaqiri et al. (2015), one way to look at internet technology strategically is as a tool that helps companies expand into new markets by distributing and promoting their products and services. Additionally, it increases commercial activity efficiency and gives the company a competitive edge.

2.2. *Financial Performance Indicators*

Measuring an organization's financial performance is one technique to find out how profitable it is financially over a given period. Another common method for determining a company's financial health is to look at its financial performance. According to multiple research (Eisenberg (1998); Eremina et al. (2019); Chen & Srinivasan (2019), profitability, sales growth, and stock return are three of the most popular metrics for an organization's financial aspect. Because the factors of all three of these financial characteristics are similar, they are somewhat entwined ways to measure how an organization performs financially in generating profit for a certain period by measuring its financial performance. Financial performance is also often used to check whether a firm is financially healthy. Three of the most common measures for the financial aspect of an organization to see from its profitability, sales growth, and stock return as used by several studies (Eisenberg et al., 1998); Eremina et al. (2019); Chen & Srinivasan (2019)). All these three financial aspects are partially intertwined due to the similarity of determinants.

2.2.1. Profitability

Since making a profit is a business's primary goal, profitability is the first aspect of financial performance (Nimalathasan, 2009). A company's stakeholders must understand how profitable the industry is doing. To achieve it, they can compute profitability ratios, which gauge a company's capacity to turn a profit and make strategic investments. Margin ratios and return ratios are the two primary formulas that make up the profitability ratios. Cash flows, operational profit margin, net profit margin, EBITDA margin, and gross profit margin are examples of margin ratios. Among the return ratios are return on assets (ROA), return on invested capital (ROIC), and return on equity (ROE). Any rise in these characteristics is considered to be associated with improved financial success. Furthermore, the results of additional research, which affirm that profitability is the primary determinant of financial performance, support the conclusions. (Amato & Wilder, 1990; Berger & Ofek, 1995; Bothwell et al., 1984; Dalton & Penn, 1976; Hall & Weiss, 1967; Shepherd, 1972).

2.2.2. Sales Growth

The increase in a company's net sales or revenue from one fiscal year to the next is known as sales growth. Since sales growth is closely related to a key sign of whether a business is expanding and is viewed as a success indicator for a business, it is frequently considered the strategic goal and objectives of a company (Gupta et al., 2013). Therefore, it is imperative that a business concentrate on growing its net sales over time.

Many factors influence an organization's increase in sales. According to some research, the company's size, age, and leverage are among the other financial factors that have a major impact on the company's sales growth (Eldomiati, 2016; Dabla-Norris & Inchauste, 2007; Bahadir et al., 2009). The degree of sales growth of the company can also be determined by other factors, including marketing, innovation, inter-organizational network, entrepreneurial orientation, and even management capacity (Bahadir et al., 2009). Consequently, it can be deduced that numerous factors influence the company's ability to develop its sales, acting as the company's growth drivers

2.2.3. Stock Performance

Not to be overlooked, since equity value is a component of the larger firm value, stock return also plays a critical role in determining a company's financial performance, particularly with regard to its worth. Stock return is calculated by dividing the starting stock price by the appreciation of the stock price plus the dividends paid by the company. There are macroeconomic and firm-specific factors that affect stock return. According to Endri et al. (2019), ROA may have a favorable impact on stock performance when considering firm-specific factors. Firm-specific factors, including the earnings-to-price (EP), book-to-price (BP), dividend-to-price (DP), and sales-to-price (SP) ratios, may also have an impact on stock return, according to a well-known study by Bauer et al. (2004). As a result, these variables might be a part of the control variables in a stock return study. According to Azar (2014), a macroeconomic element, currency depreciation increases equity returns for US companies

Table 1: Systematic Literature Review

Author	Objectives	Methodology	Variable	Findings
(Eremina, Lace, & Bistrova, 2019)	Examine about the digital maturity and explain the correlation between the digital maturity and corporate performance of Baltic listed companies'	Qualitative method using text query	<ul style="list-style-type: none"> • General • Internet of things • Data science • Process automation • Artificial intelligence • Online 	<ul style="list-style-type: none"> • There is a positive trend related to the digital marketing of Baltic State. • Digital maturity gives a positive impacts on the company's sales growth and the Return of Equity (ROE). • Digital maturity enables a company to increase the profitability of its invested capital based on fact there is a positive correlation on ROE and gross profit over assets. • Since digital maturity is not yet fulfilled completely in companies' net earnings/dividends which impacts the total return, therefore digital maturity gives negative correlation to shareholders' return.
(da Costa <i>et al.</i> , 2022)	Using the Brazilian instance as a research model and a sample of more than 340 businesses, assess the digital maturity of MSEs.	Quantitative method using ANOVA	<ul style="list-style-type: none"> • Organizational dimensions (strategy; leadership; products; operations; culture; people; governance; and technology) • Digital evolution (unconscious; conceptual; defined; integrated; and transformed) 	<ul style="list-style-type: none"> • It was discovered that the process of digital transformation is quite interconnected and complex. • More than half of the sample still exhibits low digital maturity, mostly as a result of flaws in the governance, technology, and human elements. • Brazilian MSEs did not appear to be supportive of the digital transformation, largely necessitating process redesign and strategic planning by

Author	Objectives	Methodology	Variable	Findings
(Mettler, & Pinto, 2018)	To understand what really constitutes digital maturity in the context of hospitals, how can it be frugally assessed, and what may be discovered from a long-term viewpoint.	Quantitative method using path analysis	<ul style="list-style-type: none"> • Hardware and software • Operations and maintenance • Personnel development • Digital maturity • Usage intensity 	<p>businesses to build structural, systemic, cultural, and technological improvements towards digitization.</p> <ul style="list-style-type: none"> • Inferential analyses revealed that being innovative is a requirement for Brazilian MSEs' digitalization. • Digital maturity is a relative and subjective concept that, depending on the viewpoints of healthcare experts, either gets better or worse with time, and it seldom reaches a final state. • Investments in maintenance, operations, and employee development have a negative impact on digital maturity, those made in hardware and software tend to have a beneficial impact. • If digital maturity is properly managed, it offers a method to interact with many players and to talk about improvement initiatives that go beyond specific technology or projects.
(Xu, Yu, Zhang, & Zhang, 2023)	Examine the influence of digital transformation on eco-innovation and the influence of eco-innovation on sustainability performance	Quantitative method using PLS-SEM	<ul style="list-style-type: none"> • Digital capability • Digital strategy • Eco-process innovation • Eco-product innovation • Eco-management innovation • Sustainable performance 	<ul style="list-style-type: none"> • Eco-innovation which encompasses eco-process, eco-product, and eco-management innovation, can be promoted through digital transformation, which includes digital capability and digital strategy. • Innovation in eco-processes, eco-products, and eco-management can improve sustainability. • The relationship between digital transformation-sustainable and sustainable performance is partially mediated by eco-innovation.
(Zhu, Ge, & Wang, 2021)	Identify the key publications, map influential nations, organizations, and journals graphically, and identify the research themes that make up the intellectual framework of the field of digital transformation.	Systematic literature review	<ul style="list-style-type: none"> • Digital business strategy • Strategic action field • Digital technology • Agile digital transformation • Digital enterprise architecture • Digital transformation of manufacturing • Digital transformation of consulting service 	<ul style="list-style-type: none"> • Bibliometrics was applied to solve the issue of dealing with a lot of data. • By clustering the co-citation data, main route analysis was used to track the knowledge evolution of DT articles and identify the major themes of DT research.
(Bhandari, Z'amborský, Ranta, Salo, 2023)	Examine how the relationship between digitalization and business performance is influenced by the level of outward internationalization and inflows of Foreign Direct Investment (FDI) from the firm's home country.	Quantitative method using GMM	<ul style="list-style-type: none"> • Firm performance • Digitalization • Degree of outward internationalization • FDI 	<ul style="list-style-type: none"> • There is a curvilinear relationship between digitalization and business performance, with the slope at low levels of digitalization being negative or flat, and at progressively higher levels of digitalization being increasingly positive. • High-level FDI and DOI inflows boost the performance improvements linked to high-level digitalization.
(Aslanova, & Kulichkina, 2020)	Create an explanation of digital maturity that includes the fundamental	Quantitative method using descriptive analysis	<ul style="list-style-type: none"> • Strategy • Organization • People • Technologies 	<ul style="list-style-type: none"> • Several elements that can be used to explain digital maturity are strategy, organization, people, technologies, and data.

Author	Objectives	Methodology	Variable	Findings
	components as well as to create a framework for evaluating digital maturity.		<ul style="list-style-type: none"> Data 	<ul style="list-style-type: none"> In order to evaluating digital maturity, there are 3 scales that can be used to classify the organization – the digitalization strategy, the level of digitalization of the organization, and readiness for digitalization.
(Rossmann, 2018)	Examine what is the conceptual definition of the idea of digital maturity, what competencies are included in the idea of digital maturity, and how can businesses assess their digital maturity.	Quantitative method using exploratory factor analysis	<ul style="list-style-type: none"> Strategic Leadership Market Operational People and Expertise Cultural Governance Technology 	<ul style="list-style-type: none"> Digital maturity is a construct with 8 dimensions – strategy, leadership, business model, operating model, people, culture, governance, and technology – with 32 components.
(Salume, Barbosa, Pinto, & Sousa, 2021)	Determine the factors or characteristics that influence the growth of digital maturity.	Quantitative method using PLS-SEM	<ul style="list-style-type: none"> Strategy Leadership Market Operational, People Culture Governance Technology 	<ul style="list-style-type: none"> The dimensions that have the strongest connections to the growth of digital maturity are those of strategy, market, operations, culture, and technology.
(Çallı, & Çallı, 2021)	Disclose the impact of SMEs' digital maturity on their performance as well as look into the role of organizational agility as a moderator effect in this relationship.	Quantitative method using PLS-SEM	<ul style="list-style-type: none"> Organizational Agility Digital Maturity Firm Performance Organizational Agility 	<ul style="list-style-type: none"> Strong evidence for the beneficial effects of digital maturity on business performance was discovered. Organizational agility improvements lessen the effect of digital maturity on business performance.
(Salviotti, Gaur, & Pennarola, 2019)	Investigates the relationship between major strategic elements of digital transformation and digital maturity.	Quantitative method using Mann-Whitney test	<ul style="list-style-type: none"> Shared digital vision Shared transformation vision Internal communication of digital vision Perceived impact of digital technology in business and management Employee training Recruitment Digitalization Capabilities Market Capitalizing Agility Operational Adjustment Agility Firm Performance 	<ul style="list-style-type: none"> Digital maturity is higher when top management has a shared digital vision, the goal is effectively communicated within the organization, and staff are required to receive training in digital capabilities.
(Li, Tong, Wei, & Yang, 2022)	Analyze the mechanism by which digitalization capabilities have an impact on company performance, and determine whether market capitalizing agility and operational adjustment agility serve as a mediator in this relationship.	Quantitative method using confirmatory factor analysis	<ul style="list-style-type: none"> Autonomous Choice to Use Mobile Devices Autonomy Within Digital Contexts Digital Literacy Individual Growth in Digital Contexts Digital Risk Awareness Support-seeking Regarding Digital Problems Regulation of Negative Emotions in Digital Contexts 	<ul style="list-style-type: none"> Agileness completely mediates the association between digitalization capabilities and company performance in the context of the COVID-19 epidemic, in addition to the direct relationship between agility, digitalization capabilities, and firm performance.
(Laaber, Florack, Koch, & Hubert, 2023)	Present a comprehensive idea and assessment of young people's digital maturity that combines objectives for healthy individual growth and objectives for online socialization.	Quantitative method using confirmatory factor analysis	<ul style="list-style-type: none"> Autonomous Choice to Use Mobile Devices Autonomy Within Digital Contexts Digital Literacy Individual Growth in Digital Contexts Digital Risk Awareness Support-seeking Regarding Digital Problems Regulation of Negative Emotions in Digital Contexts 	<ul style="list-style-type: none"> Presented and studied the idea of “digital maturity” as a fresh perspective on how young people use digital technologies. Personality qualities that reflect personality maturity, such as conscientiousness, agreeableness, and negative emotionality are associated with digital maturity.

Author	Objectives	Methodology	Variable	Findings
(Borštinar, & Pucihar, 2021)	Offer a design for a multi-attribute model based on the design science approach for evaluating digital maturity.	Quantitative method using multi-attribute decision making	<ul style="list-style-type: none"> Regulation of Impulses in Digital Contexts Respect Towards Others in Digital Contexts Digital Citizenship Digital capability (use of technology, the role of informatics, digital business model, and strategy) Organizational capability (human resources, organizational culture, and management) 	<ul style="list-style-type: none"> Utilizing a design science research approach and the DEX technique, create a complete multi-attribute model that can be used to evaluate the various levels of digital maturity of a SME.
(Duarte, Pereira, & Carneiro, 2022)	Identify the importance factors to measure DM, describe the analysis procedure to measure DM on manufacturing enterprises in the region of Tâmega e Sousa, and obtain some results based on a pilot test survey regarding the DM level of firms in this region	Quantitative method using descriptive analysis	<ul style="list-style-type: none"> Strategy (strategy and business model) Technology HR Processes (organizational culture, employees, leadership, governance) Production Processes (operations/logistics; production & processes) Marketing Processes (customer, marketing) Products. 	<ul style="list-style-type: none"> Three elements to measure digital maturity: Products, Processes, and Strategy. Tool implementation flow chart can be used to measure digital maturity in manufacturing enterprises, While some businesses are driving their own digital transformation, others are aware of the reality.
(Perera, et al., 2022)	To create a strategic framework for evaluating the digital maturity of architecture and design in the Australian context.	Systematic literature review	<ul style="list-style-type: none"> Basic digitalisation Advanced digitalisation Smart digitalisation Transformative digitalisation 	<ul style="list-style-type: none"> This study presented a strategic framework for the digitalization of design and construction (SFDDC) to direct architects, engineers, and contractors in making sustained improvement.
(Pinto, Salume, Barbosa, & de Sousa, 2022)	Identifies characteristics of retail organizations' digital maturity and groups them into categories to provide a path toward it. A multidimensional concept for digital maturity is employed to do this for a number reasons.	Quantitative method using cluster analysis	<ul style="list-style-type: none"> Strategy Market Operations Culture Technology Digital maturity 	<ul style="list-style-type: none"> Companies must be clustered along five dimensions: strategy, market, operations, culture, and technology. To attain digital maturity, a company must build capabilities connected to five dimensions. A guide for retail businesses to digital maturity.
(Afkar, Syamsi, Tamara, & Furinto, 2020)	To asses the changes in the digital maturities of Indonesia's industries before and during the COVID-19 outbreak and to identify which industries are leading and which are trailing.	Quantitative method using descriptive analysis	<ul style="list-style-type: none"> Strategy Transformation Management Organisation Culture and Expertise Cooperation Process Digitisation Information Technology Product Innovation Customer Experience 	<ul style="list-style-type: none"> Before and throughout the epidemic, the property, real estate, and construction industries were the most prevalent. Prior to the pandemic, Basic Industry and the Chemicals Industry were the laggard sectors. During the pandemic, the Agriculture Sector was left behind. During the pandemic, Indonesia's average digital maturity score grew across all industries.
Author	Objectives	Methodology	Variable	Findings
(Eremina, Lace, & Bistrova, 2019)	Examine about the digital maturity and explain the correlation between the digital maturity and corporate performance of Baltic listed companies'	Qualitative method using text query	<ul style="list-style-type: none"> General Internet of things Data science Process automation Artificial intelligence Online 	<ul style="list-style-type: none"> There is a positive trend related to the digital marketing of Baltic State. Digital maturity gives a positive impacts on the company's sales growth and the Return on Equity (ROE). Digital maturity enables a company to increase the profitability of its

Author	Objectives	Methodology	Variable	Findings
(da Costa <i>et al.</i> , 2022)	Using the Brazilian instance as a research model and a sample of more than 340 businesses, assess the digital maturity of MSEs.	Quantitative method using ANOVA	<ul style="list-style-type: none"> Organizational dimensions (strategy; leadership; products; operations; culture; people; governance; and technology) Digital evolution (unconscious; conceptual; defined; integrated; and transformed) 	<p>invested capital based on fact there is a positive correlation on ROE and gross profit over assets.</p> <ul style="list-style-type: none"> Since digital maturity is not yet fulfilled completely in companies' net earnings/dividends which impacts the total return, therefore digital maturity gives negative correlation to shareholders' return. It was discovered that the process of digital transformation is quite interconnected and complex. More than half of the sample still exhibits low digital maturity, mostly as a result of flaws in the governance, technology, and human elements. Brazilian MSEs did not appear to be supportive of the digital transformation, largely necessitating process redesign and strategic planning by businesses to build structural, systemic, cultural, and technological improvements towards digitization. Inferential analyses revealed that being innovative is a requirement for Brazilian MSEs' digitalization.
(Mettler, & Pinto, 2018)	To understand what really constitutes digital maturity in the context of hospitals, how can it be frugally assessed, and what may be discovered from a long-term viewpoint.	Quantitative method using path analysis	<ul style="list-style-type: none"> Hardware and software Operations and maintenance Personnel development Digital maturity Usage intensity 	<ul style="list-style-type: none"> Digital maturity is a relative and subjective concept that, depending on the viewpoints of healthcare experts, either gets better or worse with time, and it seldom reaches a final state. Investments in maintenance, operations, and employee development have a negative impact on digital maturity, those made in hardware and software tend to have a beneficial impact. If digital maturity is properly managed, it offers a method to interact with many players and to talk about improvement initiatives that go beyond specific

Author	Objectives	Methodology	Variable	Findings
(Xu, Yu, Zhang, & Zhang, 2023)	Examine the influence of digital transformation on eco-innovation and the influence of eco-innovation on sustainability performance	Quantitative method using PLS-SEM	<ul style="list-style-type: none"> Digital capability Digital strategy Eco-process innovation Eco-product innovation Eco-management innovation Sustainable performance 	<p>technology or projects.</p> <ul style="list-style-type: none"> Eco-innovation which encompasses eco-process, eco-product, and eco-management innovation, can be promoted through digital transformation, which includes digital capability and digital strategy. Innovation in eco-processes, eco-products, and eco-management can improve sustainability. The relationship between digital transformation-sustainable and sustainable performance is partially mediated by eco-innovation.
(Zhu, Ge, & Wang, 2021)	Identify the key publications, map influential nations, organizations, and journals graphically, and identify the research themes that make up the intellectual framework of the field of digital transformation.	Systematic literature review	<ul style="list-style-type: none"> Digital business strategy Strategic action field Digital technology Agile digital transformation Digital enterprise architecture Digital transformation of manufacturing Digital transformation of consulting service 	<ul style="list-style-type: none"> Bibliometrics was applied to solve the issue of dealing with a lot of data. By clustering the co-citation data, main route analysis was used to track the knowledge evolution of DT articles and identify the major themes of DT research.
(Bhandari, Z'amborský, Ranta, Salo, 2023)	Examine how the relationship between digitalization and business performance is influenced by the level of outward internationalization and inflows of Foreign Direct Investment (FDI) from the firm's home country.	Quantitative method using GMM	<ul style="list-style-type: none"> Firm performance Digitalization Degree of outward internationalization FDI 	<ul style="list-style-type: none"> There is a curvilinear relationship between digitalization and business performance, with the slope at low levels of digitalization being negative or flat, and at progressively higher levels of digitalization being increasingly positive. High-level FDI and DOI inflows boost the performance improvements linked to high-level digitalization.
(Aslanova, & Kulichkina, 2020)	Create an explanation of digital maturity that includes the fundamental components as well as to create a framework for evaluating digital maturity.	Quantitative method using descriptive analysis	<ul style="list-style-type: none"> Strategy Organization People Technologies Data 	<ul style="list-style-type: none"> Several elements that can be used to explain digital maturity are strategy, organization, people, technologies, and data. In order to evaluating digital maturity, there are 3 scales that can be used to classify the

Author	Objectives	Methodology	Variable	Findings
(Rossmann, 2018)	Examine what is the conceptual definition of the idea of digital maturity, what competencies are included in the idea of digital maturity, and how can businesses assess their digital maturity.	Quantitative method using exploratory factor analysis	<ul style="list-style-type: none"> • Strategic • Leadership • Market • Operational • People and Expertise • Cultural • Governance • Technology 	<p>organization – the digitalization strategy, the level of digitalization of the organization, and readiness for digitalization.</p> <ul style="list-style-type: none"> • Digital maturity is a construct with 8 dimensions – strategy, leadership, business model, operating model, people, culture, governance, and technology – with 32 components.
(Salume, Barbosa, Pinto, & Sousa, 2021)	Determine the factors or characteristics that influence the growth of digital maturity.	Quantitative method using PLS-SEM	<ul style="list-style-type: none"> • Strategy • Leadership • Market • Operational, • People • Culture • Governance • Technology 	<ul style="list-style-type: none"> • The dimensions that have the strongest connections to the growth of digital maturity are those of strategy, market, operations, culture, and technology.
(Çallı, & Çallı, 2021)	Disclose the impact of SMEs' digital maturity on their performance as well as look into the role of organizational agility as a moderator effect in this relationship.	Quantitative method using PLS-SEM	<ul style="list-style-type: none"> • Organizational Agility • Digital Maturity • Firm Performance • Organizational Agility 	<ul style="list-style-type: none"> • Strong evidence for the beneficial effects of digital maturity on business performance was discovered. • Organizational agility improvements lessen the effect of digital maturity on business performance.
(Salviotti, Gaur, & Pennarola, 2019)	Investigates the relationship between major strategic elements of digital transformation and digital maturity.	Quantitative method using Mann-Whitney test	<ul style="list-style-type: none"> • Shared digital vision • Shared transformation vision • Internal communication of digital vision • Perceived impact of digital technology in business and management • Employee training • Recruitment 	<ul style="list-style-type: none"> • Digital maturity is higher when top management has a shared digital vision, the goal is effectively communicated within the organization, and staff are required to receive training in digital capabilities.
(Li, Tong, Wei, & Yang, 2022)	Analyze the mechanism by which digitalization capabilities have an impact on company performance, and determine whether market capitalizing agility and operational adjustment agility serve as a mediator in this relationship.	Quantitative method using confirmatory factor analysis	<ul style="list-style-type: none"> • Digitalization Capabilities • Market Capitalizing Agility • Operational Adjustment Agility • Firm Performance 	<ul style="list-style-type: none"> • Agileness completely mediates the association between digitalization capabilities and company performance in the context of the COVID-19 epidemic, in addition to the direct relationship between agility, digitalization capabilities, and firm performance.

Author	Objectives	Methodology	Variable	Findings
(Laaber, Florack, Koch, & Hubert, 2023)	Present a comprehensive idea and assessment of young people's digital maturity that combines objectives for healthy individual growth and objectives for online socialization.	Quantitative method using confirmatory factor analysis	<ul style="list-style-type: none"> Autonomous Choice to Use Mobile Devices Autonomy Within Digital Contexts Digital Literacy Individual Growth in Digital Contexts Digital Risk Awareness Support-seeking Regarding Digital Problems Regulation of Negative Emotions in Digital Contexts Regulation of Impulses in Digital Contexts Respect Towards Others in Digital Contexts Digital Citizenship 	<ul style="list-style-type: none"> Presented and studied the idea of "digital maturity" as a fresh perspective on how young people use digital technologies. Personality qualities that reflect personality maturity, such as conscientiousness, agreeableness, and negative emotionality are associated with digital maturity.
(Borštnar, & Pucihar, 2021)	Offer a design for a multi-attribute model based on the design science approach for evaluating digital maturity.	Quantitative method using multi-attribute decision making	<ul style="list-style-type: none"> Digital capability (use of technology, the role of informatics, digital business model, and strategy) Organizational capability (human resources, organizational culture, and management) 	<ul style="list-style-type: none"> Utilizing a design science research approach and the DEX technique, create a complete multi-attribute model that can be used to evaluate the various levels of digital maturity of a SME.
(Duarte, Pereira, & Carneiro, 2022)	Identify the importance factors to measure DM, describe the analysis procedure to measure DM on manufacturing enterprises in the region of Tâmega e Sousa, and obtain some results based on a pilot test survey regarding the DM level of firms in this region	Quantitative method using descriptive analysis	<ul style="list-style-type: none"> Strategy (strategy and business model) Technology HR Processes (organizational culture, employees, leadership, governance) Production Processes (operations/logistics; production & processes) Marketing Processes (customer, marketing) Products. 	<ul style="list-style-type: none"> Three elements to measure digital maturity: Products, Processes, and Strategy. Tool implementation flow chart can be used to measure digital maturity in manufacturing enterprises, While some businesses are driving their own digital transformation, others are aware of the reality.
(Perera, et al., 2023)	To create a strategic framework for evaluating the digital maturity of architecture and design in the Australian context.	Systematic literature review	<ul style="list-style-type: none"> Basic digitalisation Advanced digitalisation Smart digitalisation Transformative digitalisation 	<ul style="list-style-type: none"> This study presented a strategic framework for the digitalization of design and construction (SFDDC) to direct architects, engineers, and contractors in making sustained improvement.

Author	Objectives	Methodology	Variable	Findings
(Pinto, Salume, Barbosa, & de Sousa, 2023)	Identifies characteristics of retail organizations' digital maturity and groups them into categories to provide a path toward it. A multidimensional concept for digital maturity is employed to do this for a number reasons.	Quantitative method using cluster analysis	<ul style="list-style-type: none"> • Strategy • Market • Operations • Culture • Technology • Digital maturity 	<ul style="list-style-type: none"> • Companies must be clustered along five dimensions: strategy, market, operations, culture, and technology. • To attain digital maturity, a company must build capabilities connected to five dimensions. • A guide for retail businesses to digital maturity.
(Afkar, Syamsi, Tamara, & Furinto, 2020)	To assess the changes in the digital maturities of Indonesia's industries before and during the COVID-19 outbreak and to identify which industries are leading and which are trailing.	Quantitative method using descriptive analysis	<ul style="list-style-type: none"> • Strategy • Transformation Management • Organisation • Culture and Expertise • Cooperation • Process Digitisation • Information Technology • Product Innovation • Customer Experience 	<ul style="list-style-type: none"> • Before and throughout the epidemic, the property, real estate, and construction industries were the most prevalent. • Prior to the pandemic, Basic Industry and the Chemicals Industry were the laggard sectors. • During the pandemic, the Agriculture Sector was left behind. • During the pandemic, Indonesia's average digital maturity score grew across all industries.

4. Method

4.1. Literature Synthesis Analysis

A systematic literature review's primary objective is to gather and assess the body of research being done on a given subject, resulting in unbiased conclusions that can be independently confirmed and repeated (Lame, 2019). A systematic literature review is a thorough, methodological evaluation of research findings that aims to both group related works and support the development of evidence-based recommendations for study specialists. Eighteen papers collected from electronic sources are included in this investigation.

5. Results and Discussion

The association between the variables under inquiry is displayed in the literature review. The results show that cloud computing, artificial intelligence, process automation, big data analytics, internet of things (IoT), computer simulations, and online technology all have an impact on financial performance. The proposed framework is presented below to show how each variable is expected to relate to the others.

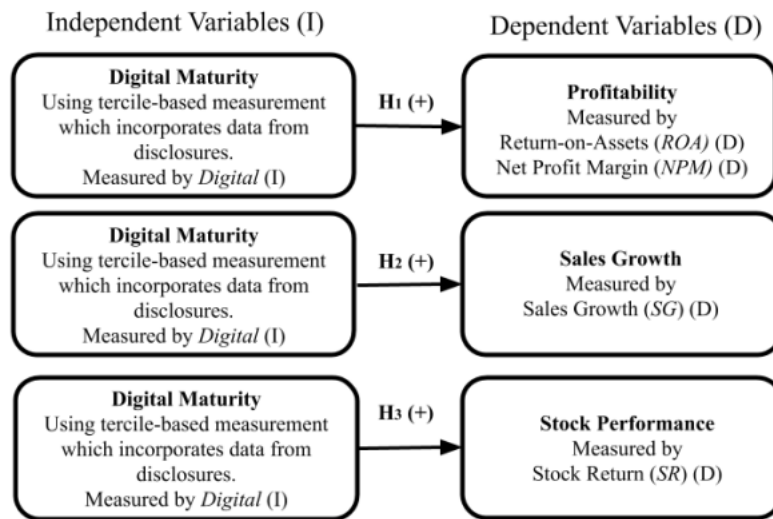


Figure 1: Theoretical Framework

Source: Author

6. Conclusion

This study has conducted an effective review of the literature on the relationship between digital maturity and financial success. The following elements were shown to have an effect on financial performance: online technologies, cloud computing, artificial intelligence, process automation, big data analytics, computer simulations, and the internet of things (IoT). Additional research on the variables influencing financial performance based on digital maturity level can be built upon this study. Furthermore, by utilising digital aspects generally, this research offers perspectives for organisations looking to enhance their financial performance and contributes to the body of literature on digital maturity

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