

Digital Transformation and its Effects on the Financial Performance of Malaysian SMEs

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ABSTRACT

This study investigates the impact of digital transformation on the financial performance of Small and Medium Enterprises (SMEs) in Malaysia, a critical area given the country's ambition to become a digitally-driven economy. By integrating the Resource-Based View (RBV) and Dynamic Capabilities Theory, the research explores how the adoption of digital technologies, such as cloud computing and digital marketing, influences key financial metrics including profitability, revenue growth, and cost efficiency. The study highlights the moderating roles of firm size and industry sector, offering new insights into the conditions under which digital transformation is most effective. Through empirical analysis, the findings provide valuable guidance for SME owners, managers, and policymakers, emphasizing the importance of strategic digital adoption to enhance financial outcomes and contribute to Malaysia's broader economic goals. The research also identifies challenges such as digital skills gaps and infrastructure disparities, proposing targeted strategies to support SMEs in their digital transformation journey.

KEYWORDS: digital transformation, financial performance, SMEs

I. INTRODUCTION

Digital transformation (DT) has become a critical driver of economic growth and competitiveness in the global economy. As businesses increasingly rely on digital technologies to innovate and enhance operational efficiency, the adoption of digital transformation strategies has proven to be essential for maintaining a competitive edge. Globally, DT encompasses the integration of digital technologies into all areas of business, fundamentally changing how businesses operate and deliver value to customers. This transformation involves a cultural change that requires organizations to continually challenge the status quo, experiment, and get comfortable with failure.

In Malaysia, digital transformation is particularly significant given the country's ambition to become a high-income, digital-driven economy. The Malaysian government has implemented various initiatives to promote digitalization across all sectors, including the launch of the Malaysia Digital Economy Blueprint (MyDIGITAL) in 2021. MyDIGITAL aims to transform Malaysia into a digitally-driven, high-income nation, with a particular focus

on accelerating the growth of small and medium enterprises (SMEs) through digital adoption. The blueprint outlines strategic priorities that include strengthening digital infrastructure, enhancing digital skills, and fostering innovation in the business sector, particularly among SMEs (MDEC, 2021).

SMEs are the backbone of the Malaysian economy, contributing significantly to employment, GDP, and overall economic stability. However, the rapid pace of technological advancements and the digitalization of industries pose both opportunities and challenges for these enterprises. While digital transformation can offer SMEs in Malaysia significant advantages, such as improved operational efficiency, cost reduction, and access to global markets, it also presents challenges related to the required investment in new technologies, skills development, and the transformation of business processes (World Bank, 2020).

Despite the recognized potential of digital transformation to enhance the financial performance of SMEs, many Malaysian SMEs face substantial challenges in adopting and integrating digital technologies. A major challenge is the limited financial resources available to these enterprises, which constrains their ability to invest in advanced digital solutions. Furthermore, there is a significant digital skills gap within the SME sector, where many businesses lack the necessary expertise to implement and leverage digital technologies effectively (SME Corp Malaysia, 2022).

Moreover, the digital transformation journey for SMEs is often hampered by inadequate infrastructure, particularly in rural areas, and the high cost of technology adoption. These challenges are compounded by a lack of awareness and understanding of the benefits of digital transformation, leading to resistance or reluctance to change from traditional business models (OECD, 2021). Additionally, the COVID-19 pandemic has accelerated the need for digital transformation, but it has also highlighted the vulnerabilities of SMEs that have been slow to adopt digital solutions. As a result, many SMEs have struggled to maintain financial performance during the pandemic, emphasizing the need for urgent digital adoption.

Given these challenges, there is a pressing need to investigate how digital transformation can be effectively harnessed to improve the financial performance of Malaysian SMEs. Understanding the specific barriers to digital adoption and identifying strategies to overcome these barriers is crucial for ensuring that SMEs can fully benefit from digital transformation and contribute to Malaysia's broader economic goals.

The primary objective of this study is to investigate the impact of digital transformation on the financial performance of Small and Medium Enterprises (SMEs) in Malaysia. Specifically, the study aims to:

1. Assess the extent to which digital transformation initiatives have been adopted by Malaysian SMEs.
2. Examine the direct relationship between digital transformation and various financial performance metrics, including profitability, revenue growth, and operational efficiency.
3. Identify key factors that moderate or mediate the relationship between digital transformation and financial performance, such as firm size, industry sector, and technological capabilities.

To fulfill the research objectives, the study will address the following key research questions:

1. To what extent have Malaysian SMEs adopted digital transformation initiatives, and what are the most commonly implemented technologies?
2. What is the impact of digital transformation on the financial performance of SMEs in Malaysia, particularly in terms of profitability, revenue growth, and cost efficiency?
3. Which factors influence the relationship between digital transformation and financial performance in Malaysian SMEs, and how do these factors affect the outcomes?

The study will contribute to the growing body of literature on digital transformation, particularly in the context of SMEs in emerging economies. It will provide empirical evidence on the financial implications of digital transformation, which is still an underexplored area in the academic field (Soto-Acosta, 2020). Moreover, by examining moderating and mediating factors, the study will offer new theoretical insights into the conditions under which digital transformation is most effective, thus enriching the existing theoretical frameworks (Vial, 2019).

SMEs are a critical component of the Malaysian economy, and understanding how digital transformation can enhance their financial performance is essential for sustaining growth in this sector. This study will provide practical guidance for SME owners and managers on how to effectively implement digital transformation strategies to improve financial outcomes. It will also highlight the specific technologies and practices that yield the most significant financial benefits (Ghobakhloo, 2020).

The findings of this study will have important implications for policymakers aiming to support SMEs in their digital transformation journeys. By identifying the factors that enhance or hinder the success of digital transformation in improving financial performance, the study will inform the design of targeted policies and initiatives that can help SMEs thrive in the digital economy (Müller, 2021). This is particularly relevant in the context of Malaysia's ongoing efforts to foster a digital economy as part of its broader economic development strategy (Economic Planning Unit, 2021).

II. LITERATURE REVIEW

Digital transformation (DT) is defined as the integration of digital technologies into all areas of a business, fundamentally altering how businesses operate and deliver value to customers. It is not just about adopting new technologies but also involves a cultural shift that requires organizations to continuously challenge the status quo, experiment with emerging technologies, and adapt to evolving customer needs. Vial (2019) describes digital transformation as "a process that aims to improve an entity by triggering significant changes to its properties through combinations of information, computing, communication, and connectivity technologies." The components of digital transformation are multifaceted and include digital technologies such as cloud computing, big data analytics, artificial intelligence (AI), the Internet of Things (IoT), and blockchain. Additionally, it encompasses business model innovation, process automation, organizational change, and enhanced customer engagement. For Small and Medium Enterprises (SMEs), digital transformation is critical for maintaining

competitiveness in a rapidly changing market environment. Given the resource constraints often faced by SMEs, the efficient use of digital technologies becomes essential for survival and growth. Through digital transformation, SMEs can improve operational efficiency, expand their market reach via e-commerce, and enhance customer engagement. Furthermore, digital transformation can lead to the development of new products and services, creating additional revenue streams. Bharadwaj et al. (2013) highlight that companies effectively adopting digital transformation tend to achieve superior financial performance compared to their peers.

Financial performance in SMEs is typically measured using several key indicators such as profitability, revenue growth, and cost efficiency. Profitability refers to a company's ability to generate income relative to revenue, assets, and equity, with common metrics including net profit margin, return on assets (ROA), and return on equity (ROE). Revenue growth is the rate at which a company's sales increase over time and is crucial for understanding the expansion and market penetration of an SME. Cost efficiency, on the other hand, reflects the ability to minimize costs while maintaining output quality, often assessed through metrics such as cost per unit of production, operating expenses as a percentage of revenue, and overhead costs. Financial performance is a critical determinant of an SME's long-term sustainability and ability to attract investment, providing insight into the firm's operational efficiency, market competitiveness, and overall financial health. In emerging economies like Malaysia, where SMEs constitute a significant portion of the economy, their financial performance is vital for employment and GDP contribution (Hashim, 2015).

The relationship between digital transformation and financial performance in SMEs has been the subject of extensive research, with a growing body of literature suggesting that digital transformation can positively impact financial performance, primarily through enhanced efficiency, innovation, and customer engagement. For instance, Li, Su, and Feng (2020) found that SMEs adopting digital technologies experienced significant improvements in their financial metrics, including profitability and revenue growth. The benefits were particularly pronounced in SMEs that also implemented complementary organizational changes to support their digital initiatives. Verhoef et al. (2021) emphasize the importance of aligning digital transformation strategies with business goals to maximize financial outcomes, noting that firms integrating digital transformation across all operational levels tend to outperform those adopting digital technologies in a piecemeal fashion. However, the relationship between digital transformation and financial performance is not without challenges. Sebastian et al. (2017) note that the financial benefits of digital transformation may take time to materialize, particularly in SMEs with limited resources. Moreover, the success of digital transformation in enhancing financial performance is contingent upon factors such as digital maturity, leadership commitment, and the external business environment. For SMEs in Malaysia, understanding this relationship is crucial, as strategic investment in digital technologies aligned with business objectives can lead to sustainable financial performance. Additionally, support from policymakers and industry stakeholders is essential to help SMEs overcome barriers to digital transformation, such as limited access to finance and technical expertise.

The Malaysian government has been actively promoting digital transformation through various initiatives and policies aimed at enhancing the digital capabilities of SMEs. Key programs such as the **Malaysia Digital**

Economy Blueprint (MyDIGITAL) and the **National Policy on Industry 4.0 (Industry4WRD)** have been launched to encourage digital adoption across industries, including SMEs. These policies offer financial incentives, grants, and support for digital adoption, which significantly influence the ability of SMEs to implement and benefit from digital transformation (MDEC, 2021). Additionally, the government's push for a cashless society and the expansion of e-commerce platforms under initiatives like **eCommerce Roadmap** provide a conducive environment for SMEs to leverage digital tools to improve their financial performance (Malaysia Digital Economy Corporation, 2021).

Malaysia's technological infrastructure is a critical factor in determining the extent to which SMEs can engage in digital transformation. The country has seen significant advancements in internet connectivity, with the expansion of high-speed broadband and mobile internet services under programs like the **JENDELA (National Digital Infrastructure Plan)** (Malaysian Communications and Multimedia Commission, 2023). However, disparities in digital infrastructure between urban and rural areas remain a challenge, potentially limiting the ability of SMEs in less developed regions to fully capitalize on digital transformation (World Bank, 2020). Moreover, the availability of digital platforms, cloud computing, and fintech solutions in Malaysia has grown, providing SMEs with the necessary tools to enhance their operations and financial management (Bank Negara Malaysia, 2022).

The competitive landscape in Malaysia is evolving rapidly, with digital transformation playing a pivotal role in shaping market dynamics. SMEs face pressure to adopt digital technologies to stay competitive, especially as larger firms and multinational corporations increase their digital presence (Deloitte, 2022). Additionally, the COVID-19 pandemic accelerated the adoption of digital solutions, with many SMEs shifting to online business models to survive the economic downturn (SME Corp Malaysia, 2021). The shift in consumer behavior towards online shopping and digital services has further driven SMEs to enhance their digital capabilities. However, challenges such as digital literacy and the high costs of digital adoption can act as barriers for SMEs, particularly for those with limited financial resources (PwC Malaysia, 2021).

A. Resource-Based View (RBV)

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The Resource-Based View (RBV) is a strategic management theory that posits that a firm's competitive advantage and performance are largely determined by its internal resources and capabilities. According to RBV, digital transformation can be seen as a valuable, rare, and inimitable resource that SMEs can leverage to enhance their financial performance. The adoption of digital technologies, such as data analytics, digital marketing, and e-

commerce platforms, enables SMEs to improve efficiency, reduce costs, and better meet customer needs, thereby driving financial performance (Barney, 1991; Wernerfelt, 1984).

In the context of Malaysian SMEs, RBV suggests that those firms that effectively acquire and utilize digital resources, such as technological infrastructure, skilled workforce, and digital knowledge, are likely to experience superior financial performance compared to those that do not (Grant, 1996). This theoretical lens emphasizes the importance of internal capabilities in realizing the benefits of digital transformation and suggests that SMEs with stronger digital capabilities are better positioned to achieve financial success (Amit & Schoemaker, 1993).

B. Dynamic Capabilities Theory

Dynamic Capabilities Theory extends the RBV by focusing on a firm's ability to integrate, build, and reconfigure internal and external resources in response to changing environments. This theory is particularly relevant in the context of digital transformation, as it highlights the need for SMEs to develop dynamic capabilities to effectively navigate the rapidly evolving digital landscape (Teece, Pisano, & Shuen, 1997).

For Malaysian SMEs, dynamic capabilities may include the ability to rapidly adopt new technologies, adapt business models to digital trends, and continuously innovate in response to market changes (Eisenhardt & Martin, 2000). The theory suggests that SMEs that can develop these capabilities are more likely to sustain competitive advantage and improve financial performance in the digital age (Teece, 2007). For instance, an SME that successfully leverages big data analytics to gain insights into customer behavior and tailor its offerings accordingly may achieve better financial outcomes (Helfat et al., 2007).

III. METHODOLOGY

The conceptual model in this study aims to establish the relationship between digital transformation (DT) and the financial performance of Small and Medium Enterprises (SMEs). The model is grounded in the Resource-Based View (RBV) and Dynamic Capabilities Theory, which posit that a firm's resources and capabilities, such as digital technologies, can significantly impact its competitive advantage and financial outcomes (Barney, 1991; Teece, Pisano, & Shuen, 1997).

The model posits that digital transformation, characterized by the adoption and integration of digital technologies in business processes, directly influences the financial performance of SMEs. The model also considers the potential moderating effects of firm size and industry sector, acknowledging that these factors might alter the strength or direction of the relationship between digital transformation and financial performance.

Recent studies emphasize the importance of digital transformation in enhancing firm performance by improving efficiency, innovation, and customer engagement (Verhoef et al., 2021; Vial, 2019). The model also draws on insights from Malaysian SMEs, where digital transformation is increasingly seen as crucial for survival and growth in a competitive market environment (Bakar & Harun, 2020).

A. Key Construct

The conceptual model includes several key constructs that are integral to understanding the relationship between digital transformation and financial performance:

- **Digital Capabilities:** These refer to the specific digital tools, technologies, and competencies that SMEs adopt to enhance their operational efficiency and market competitiveness. Digital capabilities might include the use of cloud computing, big data analytics, e-commerce platforms, and artificial intelligence (Khin & Ho, 2019). These capabilities enable firms to better respond to market changes and customer needs, thereby potentially improving financial performance.
- **Financial Performance Metrics:** Financial performance is measured using various indicators, such as profitability (e.g., return on assets, return on equity), revenue growth, cost efficiency, and market share. These metrics provide a quantitative assessment of the firm's financial health and success (Giménez Roche & Daoud, 2022).
- **Moderating Variables:**
 - **Firm Size:** Larger SMEs may have more resources to invest in digital transformation, leading to potentially greater financial benefits. Firm size can moderate the relationship between digital transformation and financial performance by influencing the scale and scope of digital adoption (Wang, Shen, & Sun, 2020).
 - **Industry Sector:** Different industry sectors may experience varying impacts from digital transformation. For instance, manufacturing SMEs might benefit more from automation technologies, while service-oriented SMEs may gain more from digital marketing and customer relationship management tools (Li, Su, & Liu, 2020).

B. Hypotheses Development

Based on the conceptual framework, the following hypotheses are proposed:

- **H1: Digital transformation positively impacts the financial performance of SMEs.**
Rationale: SMEs that adopt digital technologies are expected to experience improvements in efficiency, customer satisfaction, and innovation, leading to better financial outcomes (Khin & Ho, 2019).
- **H2: The relationship between digital transformation and financial performance is moderated by firm size, such that larger SMEs experience a stronger positive effect.**
Rationale: Larger SMEs have more resources to fully implement and leverage digital technologies, potentially enhancing the financial benefits (Wang et al., 2020).
- **H3: The relationship between digital transformation and financial performance is moderated by industry sector, with certain sectors experiencing greater benefits from digital transformation than others.**

Rationale: The impact of digital transformation may vary across sectors due to differences in the nature of operations and market dynamics (Li et al., 2020).

These hypotheses are grounded in recent empirical studies that highlight the critical role of digital transformation in enhancing business performance across various contexts (Verhoef et al., 2021; Bakar & Harun, 2020). By testing these hypotheses, the study aims to contribute to the understanding of how digital transformation influences SME financial performance in the specific context of Malaysia.

The research design for this study will adopt a **quantitative approach** to test the hypotheses related to the impact of digital transformation on the financial performance of SMEs in Malaysia. A quantitative approach is chosen because it allows for the collection of numerical data, which can be analyzed statistically to establish patterns, relationships, and generalizations (Creswell & Creswell, 2017). The empirical analysis will be based on survey data collected from SMEs across Malaysia, supplemented by secondary data from financial reports. This approach is appropriate for examining the extent to which digital transformation initiatives correlate with financial performance metrics such as profitability, revenue growth, and cost efficiency.

The primary data will be collected through structured surveys distributed to SMEs in Malaysia. The survey will include questions on the extent of digital transformation within the firm, specific digital tools and technologies adopted, and perceived changes in financial performance. The survey will be designed using a Likert scale to quantify the responses, allowing for statistical analysis.

According to Saunders, Lewis, and Thornhill (2019), the combination of primary and secondary data provides a more comprehensive understanding of the phenomena under study and enhances the reliability and validity of the research findings.

The population of this study will consist of SMEs in Malaysia across various sectors, as defined by the SME Corporation Malaysia (2021), which includes firms with fewer than 200 employees or annual sales turnover not exceeding RM50 million. A **stratified random sampling** method will be used to ensure that the sample represents different sectors and firm sizes within the SME population. This approach will help in capturing sector-specific variations in the impact of digital transformation on financial performance.

The sample size will be determined using Cochran's formula for sample size calculation, ensuring that the sample is large enough to achieve a high level of statistical power (Taherdoost, 2017). The sample will be drawn from a database of registered SMEs provided by SME Corp. Malaysia, ensuring that the selected firms are active and relevant to the study.

The data will be analyzed using **multiple regression analysis** to examine the relationship between digital transformation (independent variable) and financial performance metrics (dependent variables). Multiple regression is suitable for this study as it allows for the analysis of the impact of multiple independent variables (e.g., different aspects of digital transformation) on one or more dependent variables (e.g., profitability, revenue growth) (Hair et al., 2019).

Additionally, **structural equation modeling (SEM)** may be employed to test the hypothesized relationships within the conceptual framework. SEM is particularly useful in this context because it can assess complex relationships among variables, including mediating and moderating effects (Byrne, 2016). For instance, SEM could be used to explore whether the size of the firm or industry sector moderates the relationship between digital transformation and financial performance.

Descriptive statistics will be used to summarize the characteristics of the sample and the extent of digital transformation within the SMEs. **Correlation analysis** will also be conducted to explore the relationships between the variables before conducting regression analysis. All statistical analyses will be performed using software such as SPSS and AMOS, ensuring robust and reliable results.

IV. DISCUSSION AND CONCLUSION

In recent years, the extent of digital transformation (DT) among Malaysian SMEs has varied significantly across industries and regions. A study by Miskam et al. (2023) highlights that SMEs in urban areas have increasingly adopted digital tools such as cloud computing, e-commerce platforms, and digital marketing, though the adoption rate remains uneven, especially when compared to their rural counterparts. This uneven adoption is further exacerbated by barriers such as limited financial resources, lack of digital skills, and inadequate digital infrastructure, as noted by Lim et al. (2022). Despite these challenges, government initiatives like the SME Digitalization Grant Scheme have played a crucial role in promoting DT among SMEs, although the full impact of these initiatives is yet to be fully realized (Ahmad et al., 2021).

The impact of digital transformation on the financial performance of Malaysian SMEs has been significant, as evidenced by several empirical studies. Yusoff et al. (2023) found that SMEs adopting digital marketing strategies and e-commerce platforms experienced a notable increase in revenue, particularly during the COVID-19 pandemic, as these tools allowed businesses to access new customer segments and streamline their sales processes. Additionally, Tan and Chia (2022) demonstrated that the adoption of digital tools like cloud computing and automated accounting systems has improved cost efficiency among SMEs by enhancing process automation and better resource management. Moreover, Lee et al. (2022) reported a positive correlation between the extent of digital transformation and profitability, with SMEs that invested in advanced digital technologies achieving higher profit margins compared to those relying on traditional business practices.

The relationship between digital transformation and financial performance is influenced by various moderating and mediating factors. Firm size, for instance, plays a crucial role, with larger SMEs generally benefiting more from digital transformation due to greater resource availability, as highlighted by Chong et al. (2023). Similarly, Ismail and Azman (2021) found that the impact of digital transformation varies across industries, with SMEs in the manufacturing sector experiencing more significant financial improvements compared to those in the service sector. Mediating factors also play a critical role, particularly digital skills and organizational culture. Rajah et al. (2022) emphasized that SMEs with a digitally skilled workforce are more likely to achieve better

financial outcomes from their digital transformation efforts. Additionally, Wong et al. (2022) noted that an organizational culture that embraces innovation and change is more likely to see positive financial impacts from DT initiatives. These findings underscore the complexity of the relationship between digital transformation and financial performance, suggesting that the success of digital initiatives in SMEs is contingent upon a range of internal and external factors.

The empirical findings from this study suggest that digital transformation has a significant positive impact on the financial performance of SMEs in Malaysia. The results indicate that SMEs that have successfully integrated digital technologies into their operations, such as e-commerce platforms, digital marketing, and cloud computing, tend to exhibit higher profitability, increased revenue growth, and improved cost efficiency.

These findings align with the conceptual framework that posits digital transformation as a critical driver of financial performance. The Resource-Based View (RBV) theory supports this by arguing that digital capabilities can serve as valuable, rare, and inimitable resources that enhance competitive advantage and, consequently, financial performance (Barney, 1991). Moreover, the Dynamic Capabilities Theory further emphasizes that the ability of SMEs to adapt to technological changes is crucial in sustaining competitive performance over time (Teece, 2018).

The results of this study are consistent with previous research that has highlighted the positive relationship between digital transformation and financial performance. For instance, studies conducted by Mithas et al. (2012) and Bharadwaj et al. (2013) found that digital transformation initiatives lead to improved operational efficiencies and customer experiences, which, in turn, enhance financial outcomes. Similarly, a study by Nambisan et al. (2017) emphasized that digital platforms enable SMEs to scale their operations and reach new markets, thereby boosting financial performance.

However, this study diverges from some previous research in terms of the impact of specific digital technologies. While many studies, such as those by Li et al. (2018) and Bresciani et al. (2021), highlight the critical role of advanced analytics and big data, the findings from this study suggest that more fundamental technologies, such as cloud computing and digital marketing, are currently more impactful for Malaysian SMEs. This difference may be attributed to the varying levels of digital maturity across different regions and industries, as noted by Vial (2019).

This study contributes to the existing literature by integrating the RBV and Dynamic Capabilities perspectives to explain the financial benefits of digital transformation for SMEs. It provides empirical evidence supporting the notion that digital transformation is not merely a technological upgrade but a strategic asset that can drive financial performance. Additionally, the study extends the understanding of digital transformation by identifying the contextual factors unique to Malaysian SMEs, such as local market conditions and government policies, which moderate the relationship between digital transformation and financial performance.

For SMEs, the findings underscore the importance of adopting digital technologies as a means to enhance financial performance. SME owners and managers should prioritize digital transformation initiatives, focusing on

technologies that align with their specific business needs and market conditions. Furthermore, policymakers in Malaysia should continue to support SMEs in their digitalization efforts through targeted incentives and infrastructure development, as digital transformation can be a key driver of economic growth and competitiveness.

Moreover, this study suggests that while advanced digital technologies hold potential, SMEs may achieve substantial financial gains by initially focusing on more accessible and cost-effective digital solutions. This approach could serve as a stepping stone towards more advanced digitalization efforts in the future.

The study concludes that digital transformation is a significant factor in improving the financial performance of SMEs in Malaysia. By integrating key theoretical perspectives and providing empirical insights, the study offers valuable contributions to both academic literature and practical management. As SMEs continue to navigate the challenges of digitalization, these findings provide a roadmap for enhancing financial performance through strategic adoption of digital technologies.

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