

The Impact of Digital Transformation on Financial Outcomes in Malaysian Small and Medium Enterprises

Li Chen Yang^{*a}, Chee Wei Ming^b

^a City University, Kuala Lumpur, Malaysia, 798706854@qq.com

^b City University, Kuala Lumpur, Malaysia, cheewei@city.edu.my

* Corresponding Author

ABSTRACT

This paper explores the impact of digital transformation on the financial performance of Small and Medium Enterprises (SMEs) in Malaysia, emphasizing its critical role in enhancing profitability, revenue growth, and operational efficiency. By integrating theories such as the Resource-Based View and Dynamic Capabilities Theory, the study presents a model illustrating how digital adoption and strategic alignment drive financial outcomes in SMEs. The research highlights the challenges Malaysian SMEs face, including financial constraints, digital skills gaps, and inadequate infrastructure, while also discussing the opportunities digital transformation offers in the context of Malaysia's broader digital economy goals. The findings underscore the importance of supportive government policies and targeted strategies to ensure SMEs can fully leverage digital transformation, contributing to national economic growth and competitiveness.

KEYWORDS: *digital transformation, small and medium enterprises, financial performance*

I. INTRODUCTION

Digital transformation (DT) refers to the integration of digital technologies into all areas of business, fundamentally changing how businesses operate and deliver value to customers. This process involves the adoption of digital tools and platforms, data-driven decision-making, and a shift towards more agile and innovative business models. In the global business environment, digital transformation has become a critical driver of competitiveness and economic growth. Businesses across all sectors are increasingly relying on digital technologies to enhance operational efficiency, innovate new products and services, and reach broader markets (Vial, 2019). As digital technologies continue to evolve rapidly, companies that fail to embrace digital transformation risk falling behind in the marketplace, losing both market share and profitability.

In Malaysia, Small and Medium Enterprises (SMEs) are a vital component of the economy, contributing significantly to employment, gross domestic product (GDP), and overall economic stability. According to SME Corp Malaysia (2022), SMEs account for approximately 97.2% of total business establishments in the country and contribute around 38.2% to the national GDP. Despite their importance, many Malaysian SMEs face challenges in maintaining competitiveness, particularly in an increasingly digital economy. The adoption of digital transformation strategies is seen as a critical pathway for these enterprises to enhance their operational efficiency, reduce costs, improve customer engagement, and expand into new markets (Bakar & Harun, 2020). However, the extent to which SMEs in Malaysia are leveraging digital transformation to improve their financial performance remains underexplored.

While the benefits of digital transformation for large corporations are well-documented, there is a significant gap in understanding how digital transformation impacts the financial outcomes of SMEs, particularly in emerging markets like Malaysia. Existing research tends to focus on the adoption of digital technologies and the challenges SMEs face, such as limited financial resources and digital skills gaps (Lim et al., 2022). However, there is a lack of empirical evidence on the direct relationship between digital transformation and financial performance metrics such as profitability, revenue growth, and cost efficiency in Malaysian SMEs. Furthermore, it is unclear how factors such as firm size, industry sector, and the level of digital maturity influence this relationship. Addressing this gap is crucial for providing SMEs with the insights and strategies needed to harness the full potential of digital transformation, thereby enhancing their competitiveness and contributing to Malaysia's broader economic goals.

Digital transformation (DT) has emerged as a critical driver of competitiveness and growth in the global economy, fundamentally altering how businesses operate and deliver value. In the context of Malaysia, the digital economy has been identified as a key pillar for the nation's transition to a high-income economy, with Small and Medium Enterprises (SMEs) playing a pivotal role. SMEs constitute a significant portion of Malaysia's economic landscape, contributing to employment, GDP, and overall economic stability (Malaysia Digital Economy Corporation, 2021). However, the rapid pace of technological advancements presents both opportunities and challenges for these enterprises. While digital transformation offers potential benefits such as enhanced operational efficiency, cost reduction, and access to global markets, many SMEs face substantial barriers in adopting these technologies, including limited financial resources, a digital skills gap, and inadequate infrastructure (World Bank, 2020).

The primary objective of this paper is to explore and conceptualize the relationship between digital transformation and financial performance in Malaysian SMEs. Specifically, the study aims to:

1. **Assess the extent of digital transformation adoption among Malaysian SMEs:** This includes understanding which digital technologies and practices are most commonly implemented.
2. **Examine the direct impact of digital transformation on financial performance metrics:** These metrics include profitability, revenue growth, and operational efficiency.

3. **Identify key moderating and mediating factors:** The study will explore how factors such as firm size, industry sector, and technological capabilities influence the relationship between digital transformation and financial performance.
4. **Develop a conceptual framework:** This framework will guide future empirical research on the subject, providing a basis for understanding how SMEs can leverage digital transformation to improve financial outcomes.

This research is significant for several reasons. For SMEs, understanding the impact of digital transformation on financial performance is crucial for making informed decisions about technology investments. As these enterprises form the backbone of Malaysia's economy, their ability to thrive in a digital landscape directly influences the nation's economic resilience and growth prospects (SME Corp Malaysia, 2022). For policymakers, the study provides insights into the specific challenges SMEs face in digital adoption, helping to shape targeted interventions that support the digitalization of this vital sector. This is particularly important as Malaysia continues to implement its Digital Economy Blueprint (MyDIGITAL), which aims to position the country as a leader in the digital economy by 2030 (Economic Planning Unit, 2021). For the academic community, this paper contributes to the growing body of literature on digital transformation by offering a conceptual framework that integrates key theories with the unique context of Malaysian SMEs. The findings will enrich existing theoretical models and provide a foundation for further research on the financial implications of digital transformation in emerging markets.

II. LIRATURE REVIEW

Digital transformation (DT) is increasingly recognized as a vital process for enhancing the competitiveness and sustainability of Small and Medium Enterprises (SMEs). DT involves the integration of digital technologies into all areas of a business, fundamentally altering how firms operate and deliver value to customers. In the context of SMEs, digital transformation is not just about adopting new technologies but also involves a cultural shift towards continuous innovation and agility (Vial, 2019). The dimensions of digital transformation in SMEs include technology adoption, process automation, and digital innovation.

SMEs have been adopting various digital technologies such as cloud computing, big data analytics, and e-commerce platforms. These technologies enable SMEs to streamline operations, reduce costs, and enhance customer engagement. For instance, the adoption of cloud computing allows SMEs to access scalable computing resources without significant upfront investment, thereby leveling the playing field with larger enterprises (Khin & Ho, 2019).

Automation of business processes through digital technologies is another critical dimension of DT in SMEs. Process automation can significantly improve efficiency by reducing manual tasks and minimizing errors. Technologies such as robotic process automation (RPA) and artificial intelligence (AI) are increasingly being used

by SMEs to automate routine tasks, allowing employees to focus on more strategic activities (Ghobakhloo, 2020). This not only improves operational efficiency but also enhances the firm's ability to respond quickly to market changes.

Innovation is at the core of digital transformation, with SMEs leveraging digital tools to develop new products, services, and business models. Digital innovation enables SMEs to differentiate themselves in competitive markets and create additional revenue streams. For example, the use of big data analytics allows SMEs to gain deeper insights into customer preferences and market trends, leading to more targeted and innovative offerings (Verhoef et al., 2021).

The financial performance of SMEs is a critical determinant of their sustainability and growth. Key financial performance metrics for SMEs include profitability, revenue growth, cost efficiency, and market share. These metrics are significantly influenced by the adoption of digital technologies.

Profitability, often measured by metrics such as net profit margin, return on assets (ROA), and return on equity (ROE), reflects a firm's ability to generate income relative to its revenue, assets, and equity. Digital transformation can enhance profitability by improving operational efficiencies, reducing costs, and enabling SMEs to offer new products or services (Mithas et al., 2012). For instance, the automation of supply chain processes can reduce production costs, thereby increasing profit margins.

Revenue growth is a key indicator of an SME's expansion and market penetration. Digital transformation can drive revenue growth by opening up new sales channels (e.g., e-commerce), expanding market reach, and enhancing customer experience (Bharadwaj et al., 2013). The integration of digital marketing tools, for example, allows SMEs to reach a broader audience and increase sales, contributing to higher revenue growth.

Cost efficiency measures how effectively a firm minimizes its costs while maintaining output quality. Digital transformation can improve cost efficiency by automating manual processes, optimizing supply chains, and reducing waste (Giménez Roche & Daoud, 2022). For SMEs, adopting digital tools such as inventory management systems can lead to significant cost savings, which directly impacts the bottom line.

Market share represents the proportion of a market that is controlled by a particular firm. Digital transformation enables SMEs to compete more effectively with larger companies by enhancing their operational capabilities and customer offerings (Li et al., 2020). By adopting advanced digital tools, SMEs can increase their market share by delivering superior products and services that meet the evolving needs of consumers.

Several studies have explored the relationship between digital transformation and financial performance, particularly in the context of SMEs. Research consistently indicates that digital transformation positively influences financial outcomes, including profitability, revenue growth, and cost efficiency. For example, Li, Su, and Feng (2020) found that SMEs adopting digital technologies experienced significant improvements in financial metrics, such as increased profitability and revenue growth. These benefits were most pronounced in companies

that integrated digital transformation across all levels of operations, rather than in a piecemeal fashion (Verhoef et al., 2021).

Despite these positive findings, there are notable gaps and limitations in the existing literature. Many studies tend to focus on larger firms or high-tech industries, leaving a gap in understanding how digital transformation impacts smaller enterprises or those in more traditional sectors. Furthermore, the long-term effects of digital transformation on financial performance are not well documented, as many studies focus on short-term gains. Another limitation is the lack of research on the contextual factors that may moderate the relationship between digital transformation and financial performance, such as industry type, firm size, and regional economic conditions (Müller, 2021).

Malaysian SMEs face several challenges in adopting digital technologies, which can hinder their ability to fully benefit from digital transformation. One of the primary challenges is financial constraints. Many SMEs operate on tight budgets and may find it difficult to invest in the necessary digital tools and technologies (PwC Malaysia, 2021). This financial barrier is compounded by the high costs associated with adopting advanced digital solutions, such as cloud computing and big data analytics, which require significant upfront investments.

Another significant challenge is the digital skills gap. Many SMEs lack the in-house expertise needed to implement and manage digital technologies effectively. This skills shortage not only limits the ability of SMEs to adopt new technologies but also affects their capacity to innovate and remain competitive in the digital economy (Ghobakhloo, 2020). Additionally, infrastructure issues, particularly in rural areas, pose a significant barrier to digital transformation. While Malaysia has made strides in improving digital infrastructure, disparities remain, particularly in less developed regions, which can limit the ability of SMEs in these areas to engage in digital transformation (World Bank, 2020).

Despite these challenges, digital transformation presents substantial opportunities for Malaysian SMEs. The adoption of digital technologies can lead to enhanced operational efficiency, cost savings, and access to new markets, both locally and internationally. For example, digital platforms can enable SMEs to reach a broader customer base through e-commerce and digital marketing, thereby increasing revenue potential (Tan & Chia, 2022). Moreover, digital transformation can drive innovation within SMEs, leading to the development of new products and services that cater to the evolving needs of the market (Khin & Ho, 2019). Additionally, government initiatives such as the Malaysia Digital Economy Blueprint (MyDIGITAL) provide a supportive framework for SMEs to engage in digital transformation, offering financial incentives, grants, and infrastructure development to help overcome some of the barriers (MDEC, 2021).

III. METHODOLOGY

In this study, digital transformation (DT) is defined as the comprehensive integration of digital technologies into all areas of a business, fundamentally altering how businesses operate and deliver value to customers. This includes adopting digital tools, platforms, and processes that enable organizations to innovate, enhance efficiency,

and respond rapidly to market changes (Vial, 2019). For SMEs, digital transformation can involve the use of technologies such as cloud computing, e-commerce platforms, digital marketing, and data analytics to improve operations and competitiveness (Khin & Ho, 2019). Financial performance, a key focus of this research, is measured through metrics such as profitability, revenue growth, cost efficiency, and market share, which reflect a company's financial health and success (Giménez Roche & Daoud, 2022). SMEs, defined in Malaysia by their annual sales turnover and the number of employees, are vital to the national economy, contributing significantly to employment and GDP (SME Corp Malaysia, 2021).

The proposed conceptual model suggests that digital transformation positively impacts the financial outcomes of SMEs through various factors, including digital capabilities, technological infrastructure, and external influences such as market conditions and government policies. Digital capabilities, enabled by the adoption of digital tools and technologies, enhance operational efficiency, improve customer engagement, and foster innovation, thereby potentially improving financial performance (Khin & Ho, 2019). The quality of technological infrastructure, including internet connectivity and access to digital platforms, plays a crucial role in facilitating this transformation (Ghobakhloo, 2020). Additionally, external factors like supportive government policies and favorable market conditions can amplify the positive effects of digital transformation on financial outcomes (MDEC, 2021). The model also hypothesizes that the relationship between digital transformation and financial performance is moderated by variables such as firm size and industry sector, with larger SMEs and certain industries potentially experiencing greater benefits (Wang, Shen, & Sun, 2020).

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

1. **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 (Verhoef et al., 2021).
2. **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 (Chong, Teh, & Lim, 2023).
3. **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, Su, & Liu, 2020).

IV. DISCUSSION AND CONCLUSION

The proposed conceptual model suggests that digital transformation can lead to improved financial outcomes for Small and Medium Enterprises (SMEs) in Malaysia by enhancing operational efficiency, increasing revenue growth, and improving cost management. The model posits that digital transformation enables SMEs to adopt new technologies such as cloud computing, big data analytics, and digital marketing, which streamline business processes, enhance decision-making, and expand market reach. This, in turn, can result in higher profitability and competitive advantage (Verhoef et al., 2021).

However, the impact of digital transformation on financial outcomes is not uniform across all SMEs. Several moderating factors influence this relationship. For instance, firm size plays a crucial role; larger SMEs with more resources are better positioned to invest in advanced digital technologies and thus experience greater financial benefits compared to smaller firms with limited capital (Wang, Shen, & Sun, 2020). Industry sector is another critical factor, as the nature of the industry determines the type of digital technologies that are most effective. For example, manufacturing SMEs may benefit more from automation and IoT technologies, while service-oriented SMEs might see greater gains from digital marketing and customer relationship management tools (Li, Su, & Liu, 2020). Additionally, the level of digital maturity within an SME affects the outcomes of digital transformation. Firms with a higher degree of digital maturity, characterized by advanced technological capabilities and a culture of innovation, are more likely to achieve significant financial improvements from digital initiatives (Ghobakhloo, 2020).

While the potential benefits of digital transformation are significant, Malaysian SMEs face several challenges that could hinder the realization of these financial outcomes. One of the primary challenges is the lack of financial resources, which limits the ability of SMEs to invest in the necessary technologies and infrastructure for digital transformation (OECD, 2021). This challenge is particularly acute for smaller SMEs that operate on tighter budgets and may struggle to justify the upfront costs of digitalization.

Another critical challenge is the digital skills gap within the SME workforce. Many Malaysian SMEs lack employees with the necessary technical expertise to implement and manage digital technologies effectively. This skills deficit not only hampers the adoption of digital tools but also limits the ability of SMEs to fully leverage these technologies to drive financial performance (Rajah, Tan, & Lee, 2022). Furthermore, inadequate digital infrastructure, particularly in rural areas, exacerbates the difficulties of digital transformation. SMEs in these regions may face challenges such as poor internet connectivity and limited access to digital platforms, which restrict their ability to participate in the digital economy (World Bank, 2020).

These challenges have significant implications for the relationship between digital transformation and financial performance. SMEs that struggle to overcome these barriers may find that the financial benefits of digital transformation are delayed or diminished. Additionally, the uneven adoption of digital technologies across different regions and sectors could lead to disparities in financial outcomes, with some SMEs gaining a competitive edge while others fall behind. Addressing these challenges requires concerted efforts from both the SMEs

themselves and policymakers, who must create an enabling environment that supports digital transformation across the board.

To overcome barriers to digital transformation and optimize financial outcomes, Malaysian SMEs can adopt several key strategies focused on leveraging government support, investing in digital skills, and adopting scalable digital solutions. Firstly, SMEs should actively engage with government initiatives such as the Malaysia Digital Economy Blueprint (MyDIGITAL) and the SME Digitalization Grant Scheme, which offer financial incentives and resources to facilitate digital adoption (MDEC, 2021). These programs lower entry barriers, making it easier for SMEs to invest in necessary technologies and infrastructure, while tax incentives and subsidies can further reduce the cost of digital transformation (SME Corp Malaysia, 2022).

Secondly, investing in the development of digital competencies within the workforce is crucial. SMEs should prioritize upskilling their employees through targeted training programs in areas such as data analytics, digital marketing, and cybersecurity (Rajah, Tan, & Lee, 2022). Collaboration with educational institutions and participation in government-supported training initiatives can help SMEs build a digitally proficient workforce capable of effectively leveraging new technologies (Wong, Goh, & Lim, 2022). Thirdly, SMEs should focus on adopting scalable digital technologies that align with their specific business needs. Cloud computing, for example, offers flexibility and cost-efficiency, allowing SMEs to scale operations without significant upfront investments in infrastructure (Khin & Ho, 2019).

Additionally, adopting e-commerce platforms and digital marketing tools can expand market reach and improve customer engagement, which are critical for driving revenue growth in the digital economy (Yusoff et al., 2023). Finally, fostering a culture of innovation is essential for sustaining the benefits of digital transformation. SMEs should encourage experimentation, cross-departmental collaboration, and structured risk-taking, which enables them to adapt to technological changes and market dynamics more effectively, ensuring long-term success (Wong et al., 2022). By implementing these strategies, Malaysian SMEs can overcome common barriers to digital transformation, enhancing their financial performance and competitiveness in today's rapidly evolving business environment.

For SME owners and managers, the successful implementation of digital transformation strategies requires a deliberate and strategic approach to enhance financial performance. First, SMEs should begin by conducting a thorough assessment of their current digital capabilities and identify gaps that need to be addressed. This involves evaluating existing technology, digital skills, and the readiness of their workforce for transformation (Khin & Ho, 2019). SMEs should prioritize investments in scalable digital technologies, such as cloud computing and e-commerce platforms, which offer flexibility and can grow with the business (Ghobakhloo, 2020). Additionally, fostering a culture of continuous learning and innovation within the organization is crucial. Managers should encourage their teams to embrace new digital tools and practices, ensuring that the workforce is equipped with the necessary skills through ongoing training and development programs (Rajah, Tan, & Lee, 2022). Moreover,

SMEs should leverage data analytics to make informed decisions, optimize operations, and enhance customer experiences, which are key drivers of financial performance in the digital age (Verhoef et al., 2021).

To support SMEs in their digital transformation efforts, the Malaysian government should adopt targeted policy measures that address the key challenges faced by these enterprises. Firstly, enhancing access to funding is critical. The government could expand existing financial incentives, such as grants and low-interest loans, specifically aimed at supporting digital adoption among SMEs (SME Corp Malaysia, 2022). Additionally, improving digital infrastructure, particularly in rural and underserved areas, is essential to ensure that all SMEs have equal opportunities to participate in the digital economy (MCMC, 2023). This includes expanding high-speed internet access and developing digital hubs that provide resources and support for SMEs. Furthermore, addressing the digital skills gap is crucial. The government should collaborate with educational institutions and industry partners to offer training programs that equip SME employees with the necessary digital skills (Ismail & Azman, 2021). Finally, creating a supportive regulatory environment that encourages innovation and the adoption of new technologies, such as fintech and e-commerce, can help SMEs navigate the digital landscape more effectively (Deloitte, 2022).

Building on the conceptual framework and findings of this paper, future research should focus on several key areas to deepen our understanding of digital transformation in SMEs. First, there is a need for empirical studies that investigate the specific factors influencing the success of digital transformation initiatives across different industry sectors in Malaysia, as the impact of digital technologies can vary significantly depending on the nature of the industry (Li, Su, & Liu, 2020). Additionally, research could explore the role of external factors, such as market conditions and government policies, in moderating the relationship between digital transformation and financial performance in SMEs. Another important area of research is the longitudinal study of digital transformation outcomes, which would provide insights into the long-term financial impacts of digital adoption in SMEs (Vial, 2019). Finally, comparative studies across different emerging markets could offer valuable perspectives on how cultural, economic, and technological contexts influence the effectiveness of digital transformation strategies in SMEs, contributing to the development of more tailored and context-specific approaches (Müller, 2021).

This paper provides a comprehensive conceptual analysis of the impact of digital transformation on the financial performance of Malaysian Small and Medium Enterprises (SMEs). One of the key insights is that digital transformation significantly enhances the financial performance of SMEs by improving operational efficiency, expanding market reach, and enabling innovation. The adoption of digital tools such as cloud computing, e-commerce platforms, and data analytics has been shown to lead to increased profitability, revenue growth, and cost efficiency (Khin & Ho, 2019). Moreover, the study highlights the role of digital capabilities as a strategic asset that SMEs can leverage to achieve a competitive advantage in a rapidly digitalizing economy (Barney, 1991). The paper also contributes to the understanding that the success of digital transformation depends not only on technology adoption but also on the alignment of digital strategies with business objectives and the development of a supportive organizational culture (Verhoef et al., 2021). Additionally, the challenges faced by Malaysian SMEs,

such as financial constraints, digital skills gaps, and inadequate infrastructure, are identified as critical barriers to the full realization of digital transformation benefits (SME Corp Malaysia, 2022).

The broader implications of this study highlight the essential role of digital transformation in ensuring the sustainability and growth of SMEs in Malaysia. As the country pursues its digital economy goals, the ability of SMEs to effectively adopt and integrate digital technologies will be crucial for their long-term viability. The findings suggest that digital transformation is not just a trend but a necessity for SMEs to remain competitive in an increasingly digital global market (Müller, 2021). For Malaysia, where SMEs constitute a significant portion of the economy, the successful digitalization of these enterprises could drive national economic growth, enhance job creation, and improve overall economic resilience (Economic Planning Unit, 2021). Furthermore, the study underscores the importance of supportive policies and initiatives from the government to address the challenges faced by SMEs, such as providing access to funding, improving digital infrastructure, and offering digital skills training programs (MDEC, 2021). As Malaysia continues to develop its digital economy, ensuring that SMEs are equipped to participate fully in this transformation will be key to achieving the country's broader economic objectives.

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