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THE IMPACT OF DIGITAL TRANSFORMATION ON BUSINESS MODEL IN SMES

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ABSTRACT

This study examines the impact of digital transformation on the business models of small and medium-sized enterprises (SMEs) in Malaysia, with a focus on identifying the challenges faced during this transition. SMEs are crucial contributors to Malaysia's economy, yet they encounter significant obstacles in adapting to the digital era. Digital transformation has enabled SMEs to enhance customer engagement, operational efficiency, and market reach through the adoption of online platforms and digital tools. However, managing the dual demands of physical and digital storefronts presents operational challenges that require strategic resource planning. The study identifies financial constraints, such as the high costs of adopting digital technologies, and a lack of digital skills among employees as key barriers. These challenges are compounded by the competitive digital marketplace, which demands innovative branding and customer engagement strategies. The findings highlight the importance of government support, financial subsidies, and targeted training programs in facilitating digital transformation for SMEs. By addressing these challenges, SMEs can achieve sustainable growth and competitiveness in the digital economy. This research contributes to the broader understanding of digital transformation in SMEs, offering valuable insights for policymakers and practitioners aiming to support these enterprises in their digital journeys.

Keywords: Digital transformation, SMEs Malaysia, Business models, Challenges, Competitiveness

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1.0 INTRODUCTION

The role of business models in small and medium-sized enterprises (SMEs) is pivotal, particularly in the context of digital transformation. In developing countries like Malaysia, SMEs significantly contribute to the economy by providing employment and influencing GDP. The advent of the digital age necessitates a reevaluation of traditional business models. Digital transformation alters how SMEs create, deliver, and capture value, which is essential for maintaining competitiveness in a rapidly evolving market landscape (Aji & Priyono, 2021; Bouwman et al., 2019).

The dynamic nature of business models within SMEs is increasingly recognized as they adapt to technological changes and shifting consumer behaviors. A common theme across the literature is that digital transformation is not merely a technological upgrade; it embodies a comprehensive business strategy that enables SMEs to enhance operational efficiency, improve customer engagement, and explore new markets (Matarazzo et al., 2021; Ghadge et al., 2020). Businesses must view their models as iterative frameworks that need continuous adaptation to leverage digital opportunities effectively (Sinyuk et al., 2021; Crupi et al., 2020).

Despite this recognized importance, many Malaysian SMEs encounter significant barriers to successful digital adoption. A lack of resources, insufficient digital skills, and limited strategic vision are prevalent challenges that impede the transition to digital business models (Prause, 2019; Okfalisa et al., 2021). Additionally, the external environment, including governmental policies and support systems, critically influences these transformations (Dreßler & Paunović, 2021). For effective digital adoption, organizations must cultivate a supportive culture that values innovation and integrates technology into their core processes (Barann et al., 2019; Brodeur et al., 2021). Various studies indicate that successful SMEs often leverage knowledge brokers, such as digital innovation hubs, which assist in navigating the digital landscape by facilitating knowledge sharing and resources (Aji & Priyono, 2021; Crupi et al., 2020).

Research shows that the impact of digital transformation is not uniform across SMEs. Differences in technological readiness, industry context, and organizational culture result in varied adoption paths. While some SMEs may undergo radical shifts in their business models, others choose a more incremental approach to transformation (Priyono et al., 2020; AlMulhim, 2021). A compelling case from research highlights that SMEs in the fashion industry exhibit a nuanced adoption of digital tools that prioritize gradual innovation over radical changes (Zahra et al., 2021; Priyono et al., 2020). Therefore, understanding these unique experiences within different sectors is essential for developing tailored strategies that address the specific needs and challenges of SMEs (Bouwman et al., 2019; Bouncken et al., 2019).

Research findings collectively underscore two critical objectives: first, to thoroughly analyze the effects of digital transformation on the business models of Malaysian SMEs, and second, to identify the key challenges encountered during this transition. By addressing these facets, scholars and practitioners can contribute to more robust discussions on digital transformation strategies, ultimately fostering a more resilient SME sector capable of thriving in a digital economy (Sinyuk et al., 2021; Brodeur et al., 2021).

In conclusion, comprehending the reframing of business models in response to digital transformation is vital for SMEs. By utilizing insights from existing literature and identifying key challenges, we can support Malaysian SMEs in adapting and leveraging digital technologies effectively. Strategies derived from this research will empower these enterprises, ensuring their sustainability and competitiveness in an increasingly digital market landscape.

2.0 LITERATURE REVIEW

DIGITAL TRANSFORMATION

The research landscape surrounding digital transformation in small and medium-sized enterprises (SMEs) in Malaysia has shown significant evolution, especially with the integration of e-commerce technologies. Initially, studies primarily focused on the basic adoption of digital tools, reflecting a nascent understanding of digital transformation. These early explorations laid the groundwork for major policy initiatives, such as the Malaysian government's Digital Economy Blueprint launched in 2019, which aimed to enhance SMEs' digital capabilities (Chavez et al., 2021). This governmental push aligns with the

statistical importance of SMEs in Malaysia, contributing significantly to the nation's GDP and employment (Tan & Eze, 2013).

Frameworks designed to facilitate the integration of digital technologies have emerged as critical contributions in this field. Notable models emphasize not just technology adoption but also the encompassing strategic shifts required for SMEs to effectively leverage digital tools. For instance, frameworks based on the Resource-Based View (RBV) and Dynamic Capabilities allow SMEs to assess their unique resources and adapt their strategies for digital integration (Tehseen et al., 2021; , González-Varona et al., 2021). These frameworks are essential as researchers increasingly acknowledge that successful digital transformation encompasses technological, organizational, and cultural dimensions, necessitating a holistic approach that responds to the competitive landscape (Li et al., 2017; , González-Varona et al., 2020).

Recent methodological shifts in research reflect a more nuanced understanding of digital transformation. Mixed-methods approaches, which combine qualitative and quantitative techniques, have become prevalent as they offer a comprehensive perspective on both the statistical significance of findings and the complex lived experiences of SMEs undergoing transformation (Anim-Yeboah et al., 2020). Such methodologies are critical for deriving insights that include organizational readiness and the interplay between external factors—such as government support and industry collaboration—on transformation outcomes (Ojonugwa, 2021; , Guo et al., 2020).

Definitional variance concerning digital transformation in the context of Malaysian SMEs highlights a convergence around the central idea of leveraging digital technologies to fundamentally reconfigure operational mechanisms and deliver value to customers. Scholars suggest that digital transformation extends beyond mere technology implementation and necessitates strategic alignments that enhance operational efficiency and serve evolving customer engagement paradigms (Chavez et al., 2020; , González-Varona et al., 2021). This multifaceted nature of digital transformation indicates a collective understanding that competitive advantages in the digital age stem from aligning technological capabilities with organizational strategy (Tehseen et al., 2021; , Huber et al., 2018).

The factors influencing the success of digital transformation in Malaysian SMEs are multifactorial, including technological readiness, organizational culture, and external support mechanisms. Technological readiness refers to both the availability of digital infrastructure and the requisite skills to utilize such technologies effectively (Hamid et al., 2013). Meanwhile, a supportive organizational culture plays a pivotal role in fostering an environment conducive to innovation and change, significantly impacting the effectiveness of technology adoption and integration efforts (Rozak et al., 2021; , North et al., 2019).

Despite advancements in research, challenges still remain. For instance, existing studies often reveal barriers to e-commerce adoption among SMEs—such as insufficient technical knowledge and financial constraints—that inhibit the full realization of digital opportunities (Anim-Yeboah et al., 2020). These barriers underscore the necessity for continued research to delineate the long-term impacts of digital transformation on SME performance and to develop tailored strategies that account for specific industry contexts and regional characteristics (AlMujaini et al., 2021). Consequently, a comprehensive understanding of digital transformation in Malaysian SMEs not only illuminates current practices and challenges but is essential for informing future policies and support mechanisms aimed at enhancing digital maturity across the landscape.

CHALLENGES OF MALAYSIAN SMES IN DIGITAL TRANSFORMATION

The historical evolution of digital transformation in the Small and Medium Enterprise (SME) sector in Malaysia is closely connected to governmental initiatives and various challenges faced by these entities. The Malaysian government has actively promoted a digital economy through strategic initiatives aimed at enhancing digital literacy within the SME sector. For instance, the establishment of the Digital Free Trade Zone (DFTZ) was designed to facilitate e-commerce and empower Malaysian SMEs to engage in global markets more effectively (Chin et al., 2021). Moreover, the focus on Industrial Revolution 4.0 highlights the urgency for SMEs to adopt modern technological advancements to remain competitive, as these businesses constitute a significant portion of the national economy (Teh & Kee, 2019; .

Nevertheless, the transition from traditional business models to digital frameworks has not been entirely smooth. Many SMEs face considerable challenges, including high costs related to technology adoption and inadequate infrastructure. Additionally, there is often a lack of awareness among SMEs about the potential benefits of digital transformation, which further hinders their ability to adapt (Mahroeian, 2012). In this context, financial barriers, skills gaps, and resistance to change are commonly recognized as key obstacles, with existing literature indicating that these challenges

disproportionately affect SMEs relative to larger firms (Abdullah et al., 2012) (Rahamaddulla et al., 2021). Furthermore, limitations in technological infrastructure, particularly in rural areas, exacerbate inequalities in digital readiness (Jayashree et al., 2019).

Recent studies have utilized theoretical frameworks such as the Resource-Based View (RBV) and the Dynamic Capabilities Framework to analyze these challenges. The RBV emphasizes that SMEs must strategically leverage their existing resources to overcome barriers to technological adoption (Teh & Kee, 2019; González-Varona et al., 2021). Similarly, the Dynamic Capabilities Framework suggests that organizational culture and readiness are crucial for successfully navigating the complexities of digital transformation (Teh & Kee, 2019; Tuah et al., 2021). Insights gleaned from these frameworks can provide pathways for SMEs to develop capabilities that not only mitigate challenges but also enhance their competitiveness in an increasingly digitalized global market.

Empirical research investigating these themes has employed various methodologies, including qualitative interviews and case studies, to map out the landscape of digital transformation challenges for Malaysian SMEs (Rahman et al., 2017; Mahrooeian, 2012). These studies underscore the importance of government support in facilitating technological adoption and reveal persistent disparities in digital readiness influenced by regional infrastructure variances (Jayashree et al., 2019). Despite progress, notable gaps remain in the literature, particularly concerning longitudinal studies that explore how SMEs adapt over time to pressures of digital transformation (Rahamaddulla et al., 2021). Additionally, there is a pressing need for more focus on rural and underserved SME populations to fully understand the unique challenges they encounter and to tailor support programs effectively.

To create an environment conducive to digital transformation, policymakers should consider targeted interventions that address the specific needs of SMEs. This may involve financial assistance for technology adoption, as well as programs aimed at improving digital literacy and skills among employees (Abdullah et al., 2012). Such measures are essential, as enhanced digital capabilities can significantly strengthen the resilience and competitiveness of SMEs in Malaysia's evolving economic landscape.

In conclusion, while the journey toward digital transformation for SMEs in Malaysia is fraught with challenges, strategic government initiatives and improvements in training and infrastructure could pave the way for greater success. Collective efforts to bridge knowledge and resource gaps will not only equip SMEs to better compete but also advance the nation toward a more robust digital economy.

Despite the growing body of literature, several limitations persist in previous research. For instance, there is a lack of longitudinal studies exploring how SMEs overcome challenges over time. Additionally, limited exploration of sector-specific challenges within Malaysian SMEs and inadequate attention to rural and underserved SMEs represent significant research gaps. Future research should aim to address these gaps by investigating strategies that SMEs can adopt to navigate the identified challenges effectively.

Addressing the challenges faced by Malaysian SMEs during the digital transformation process can lead to improved competitiveness and resilience in the market. Policymakers should consider implementing tailored support programs that address the specific needs of SMEs, such as providing financial assistance for technology adoption and fostering digital literacy through training initiatives. By doing so, they can help create an enabling environment for SMEs to thrive in the digital economy.

3.0 METHODOLOGY

Table 1. This table provides a structured overview of the methodology.

Aspect	Details
Research Design	Qualitative: approach was chosen, using semi-structured interviews to collect in-depth insights from SME owners in Malaysia about their digital transformation experience. The design will explore the impact of digital technologies on business models.
Sample and Participants	Sampling Method: Purposive sampling was used to select five SME owners or co-owners currently involved in digital transformation. Participants: Participants include SME business owners or co-owners in Malaysia who have first-hand experience with digital tools and transformation.
Data Collection	Methods: In-depth semi-structured interviews will be conducted with SME owners. Tools: A structured questionnaire will be used during the interviews, covering topics such as digital transformation impact, challenges faced, and strategies for digital integration.
Data Analysis	Process: Thematic analysis will be employed to analyze the interview data. The collected responses will be coded and categorized into key themes, providing insights into the digital transformation of SMEs. Software: Atlas.ti will be used to facilitate data analysis, organizing interview responses into meaningful themes.
Ethical Considerations	Participant Consent: Informed consent will be obtained from all participants. Confidentiality: All interviews will be anonymized to protect participants' privacy. Voluntary Participation: Participation will be voluntary, with the option to withdraw at any time without penalty.

4.0 FINDINGS AND DISCUSSION

The analysis of findings provides valuable insights into the demographics and characteristics of the respondents, as well as their relevance to the study. The respondents, five SME owners and managers from the Klang Valley region (Selangor and Kuala Lumpur), were predominantly Malay Muslims aged between 35 and 55. They represented a diverse range of businesses, including a café and bakery, a clothing boutique, a handmade soap enterprise, a roadside food stall, and a dessert store. Their roles varied between managers and owners, highlighting different levels of operational responsibilities within the SME structure.

The descriptive statistical analysis revealed that most SMEs were concentrated in urban areas and spanned industries such as food services, retail, and artisanal goods. This diversity underscores the varied operational contexts and challenges faced by SMEs in adopting digital transformation. The demographic insights provide a foundational understanding of the respondents' backgrounds, which directly influence their approaches to and experiences with digital transformation, setting the stage for further exploration of its impact.

Table 2. Respondent Profiles and Business Details.

Respondent Name	Age	Religion	Location	Business Type	Role
Mr. Adam	40	Malay, Islam	Selangor	Café and bakery	Manager
Ms. Erene	35	Malay, Islam	Kuala Lumpur	Clothing boutique	Manager
Mrs. Nora Zainal	45	Malay, Islam	Selangor	Handmade soap business	Owner
Mr. Mohd Asri	55	Malay, Islam	Taman Melawati	Roadside food stall	Owner
Mrs. Rohaya	35	Malay, Islam	Sri Rampai	Dessert store	Owner

OBJECTIVE 1: TO ANALYZE THE IMPACT OF DIGITAL TRANSFORMATION ON THE BUSINESS MODELS OF SMES IN MALAYSIA

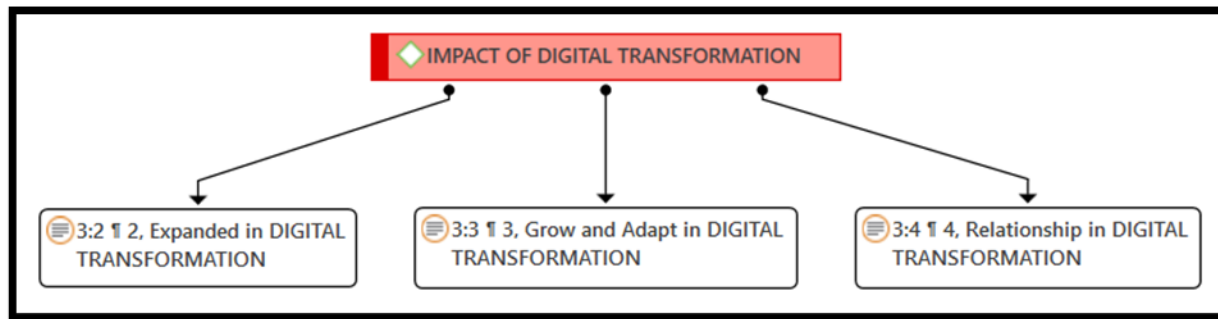


Figure 1. Research Findings One: Impact of Digital Transformation.

Digital transformation has significantly impacted the business models of Malaysian SMEs, providing both opportunities and challenges. On the positive side, SMEs have leveraged digital platforms to expand their operations and adapt to evolving customer needs. Online platforms enabled these businesses to reach both local and remote customers, increasing visibility and sales. Growth and adaptation were evident as SMEs strengthened their digital presence, scaled operations, and built resilience despite the added workload of managing both physical and digital storefronts. Furthermore, digital tools allowed SMEs to enhance their customer relationships, fostering deeper engagement and trust, even in the absence of in-person interactions. These findings suggest that digital transformation acts as a critical enabler for SME growth. However, balancing resources effectively to manage both physical and digital operations remains a challenge, requiring strategic planning to sustain this growth.

OBJECTIVE 2: TO IDENTIFY THE KEY CHALLENGES SMES IN MALAYSIA FACE DURING THE DIGITAL TRANSFORMATION PROCESS

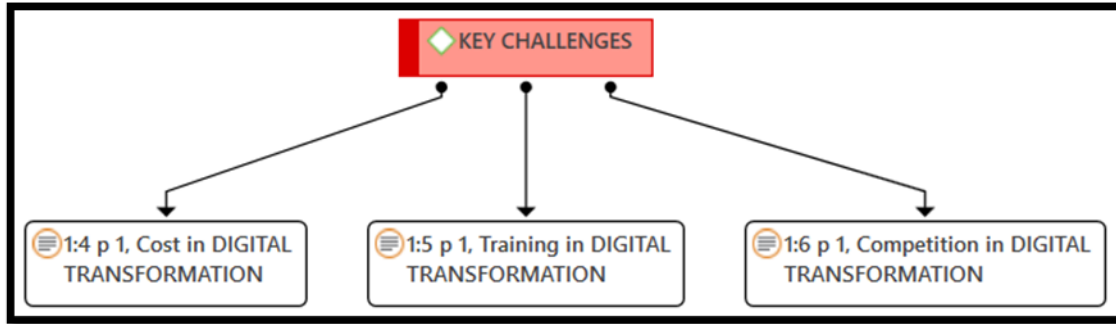


Figure 1. Research Findings Two: Key Challenges.

Despite these benefits, SMEs face several barriers during their digital transformation journey. High costs for platforms, marketing, and maintenance often strain profitability, especially for smaller businesses. Additionally, a lack of digital expertise among staff necessitates training, which demands time and resources. The competitive digital marketplace adds another layer of complexity, as SMEs struggle to stand out among numerous online businesses. These challenges emphasize the need for targeted support to help SMEs overcome these obstacles. Financial barriers could be addressed through government subsidies or partnerships that lower the costs of adopting digital tools. Meanwhile, targeted training programs can empower SMEs to utilize digital platforms effectively, bridging the skills gap. Moreover, innovative approaches to branding and customer engagement are essential for SMEs to maintain visibility in an increasingly crowded online space. Together, these strategies can help SMEs fully realize the benefits of digital transformation while mitigating its challenges.

5.0 CONCLUSION

The article provides a comprehensive analysis of the impact of digital transformation on the business models of Malaysian small and medium-sized enterprises (SMEs) and identifies the challenges they face in this process. SMEs are integral to Malaysia's economy, contributing significantly to employment and GDP. However, their ability to embrace digital transformation varies due to differences in technological readiness, organizational culture, and external support.

The findings highlight that digital transformation enables SMEs to improve customer engagement, operational efficiency, and market reach. Digital tools have allowed businesses to expand their operations and foster better relationships with customers, leading to growth and adaptability in a competitive environment. However, managing both digital and physical storefronts creates additional challenges, requiring strategic planning to optimize resource allocation.

Despite the opportunities, SMEs face significant barriers during digital transformation. Financial constraints, such as high upfront costs for digital tools and platforms, pose substantial challenges. Moreover, the lack of digital skills among employees necessitates training, which demands time and resources. Additionally, the competitive digital marketplace pressures SMEs to distinguish themselves through effective branding and customer engagement strategies.

The research underscores the importance of government support and targeted initiatives to alleviate financial and training barriers. Tailored programs and partnerships could empower SMEs to utilize digital technologies effectively, ensuring sustainable growth and competitiveness. Future studies should focus on sector-specific challenges, rural SMEs, and long-term impacts of digital transformation to address existing research gaps and provide a roadmap for effective digital integration in SMEs.

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