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(IJIREV)**www.gaexcellence.com/ijirev**DIGITAL INNOVATION ADOPTION AMONG MALAYSIAN
ENTREPRENEURS: CURRENT TRENDS AND INSIGHTS**Siti Salwa Sheikh Mokhtar^{1*}, Abdullah Mohammad Abdul Qayyum²¹School of Business and Economics, Universiti Putra Malaysia, Serdang, Malaysia salwamokhtar@upm.edu.my <https://orcid.org/0000-0003-2330-3947>²School of Business and Economics, Universiti Putra Malaysia, Serdang, Malaysia hello@abdullahmaq.com <https://orcid.org/0009-0001-0189-5526>

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Abstract:

The fast innovation and advancement of industry 4.0 has accelerated the adoption of it which created new opportunities for business to improve, make the process efficient and helped them for long term growth. However, despite having various initiatives by the government on adoption of digital innovation, the adoption by the small and medium enterprises (SMEs) in Malaysia remains inconsistent. Many SME entrepreneurs faces various challenges adopting digital innovation due to lack of digital capability, financial resources, complexity of the new technologies and finally the organizational readiness. This study aims to examine the current state of digital innovation adoption among Malaysian SME entrepreneurs. This study establishes the descriptive profile of the demographic characteristics, organizational structures, and baseline technological readiness of Malaysian SME Entrepreneurs. This study follow a quantitative research design using a structured questionnaire using Google Forms. The survey was distributed using stratified random sampling method by distributing to 167 eligible SME owners and entrepreneurs across Malaysia. The survey was distributed using WhatsApp, Facebook, Telegram, and email. The data were analyzed using the Statistical Package for the Social Sciences (SPSS) to evaluate the current state of digital adoption. The result of the descriptive analysis shows that 56.3% of the SMEs are micro-enterprises and 34.7% are small enterprises. Nearly half of the SME which consist of 49.1% are operating in urban locations. When it comes to digital readiness, more than half of the businesses which consist of 50.9% reported maintaining only a basic level of digital adoption while only 27.5% have integrated advanced digital technologies such as artificial intelligence (AI), Internet of Things (IoT), cloud computing, big data and automation into their operations. 28.1% of respondents are from Digital/Technology sector, 24.6% from Manufacturing sector and

23.4% from Service sector. The findings from this study suggest that the policy makers and support agency for SMEs should provide targeted digital skills training, financial support, and sector-specific digitalisation programmes to effectively transition from conventional SMEs toward more advanced digital innovation.

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Keyword:

Digital Innovation; Small and Medium Enterprises (SMEs); Industry 4.0; Malaysian Entrepreneurs; Technology Adoption.



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Introduction

The Fourth Industrial Revolution (Industry 4.0) has transformed the way organizations operate every aspect of their business activities and strategic management by adding digital technologies in every aspect (Verhoef et al., 2021). Technologies such as artificial intelligence (AI), the Internet of Things (IoT), cloud computing, big data analytics, blockchain and automation are changing organizational processes (Schwab, 2016; Xu et al., 2018; Verhoef et al., 2021). It enables firms to improve their productivity while making the streamline operations smooth (Schwab, 2016). Industry 4.0 helps organization allocate their resources more efficiently while at the same time developing new sources of competitive value (Schwab, 2016; Xu et al., 2018; Verhoef et al., 2021). While digital technologies continue to evolve, organizations not only need to digitalize existing processes, but they also need to develop digital innovation as their strategic capability that will help them build a competitive advantage in long run (Vial, 2019). Digital innovation has become an important and critical part of organizational resilience that helps them grow sustainably and maintain a competitive performance within the industry 4.0 environment (Nambisan et al., 2017; Vial, 2019).

Digital innovation goes beyond adopting new technologies (Nambisan et al., 2017). It involves taking advantage of the organization's digital capabilities to redesign their business processes (Nambisan et al., 2017). It also involves introducing innovative products and services that transform business models which as a result creates better value for both organizations and customers (Nambisan et al., 2017). Compared to traditional technology adoption, organizations that use digital innovation continue to adapt as a response for rapidly changing technologies and market expectations (Vial, 2019). Studies have shown that organizations that successfully adapt digital innovation show better operational agility with improved managerial decision-making while having a stronger customer relationship (Ghobakhloo, 2018; Verhoef et al., 2021; Faruque et al., 2024). Studies also found that organizations adapting digital innovation results

in enhanced organizational performance with better sustainable competitive advantages (Ghobakhloo, 2018; Verhoef et al., 2021; Faruque et al., 2024). As a result, digital innovation is not only viewed as an important investment but also an important strategy for sustainable growth, improved efficiency and better customer relations (Faruque et al., 2024).

The strategic decision for digital innovation is more important for SMEs because they play a critical role in economic development for both developed and developing economies (OECD, 2023). SMEs significantly contribute to employment rate, entrepreneurial activities and innovations (OECD, 2023). SMEs contribute to national economic performance while at the same time supporting regional economic resilience and national growth (OECD, 2023). However, despite the fact SMEs have an economic importance, they generally face a lot of challenges in adopting digital innovation compared to larger or multinational corporations (Ghobakhloo & Ching, 2019). Having limited financial capability with inadequate technological capabilities while having shortages of skilled workers and their uncertainty regarding the returns from digital investments often create a barrier for digital transformation adoption (Ghobakhloo & Ching, 2019; OECD, 2021). These constraints and barriers are more evident in developing countries where differences in digital infrastructure, technological readiness, and organizational capabilities influences the speed of digital transformation among businesses (Leão et al., 2023; Sangosanya et al., 2025).

In Malaysia, SMEs represent more than 97% of all businesses and with huge contributions to national employment rate, total exports and the country's gross domestic product (GDP) (SME Corporation Malaysia, 2023). SMEs in Malaysia has high importance to national economic development (SME Corporation Malaysia, 2023). To speed up and accelerate the digital transformation in Malaysia, the Government has introduced many national initiatives such as Industry4WRD which is a National Policy on Industry 4.0 (Economic Planning Unit, 2021). Malaysian government also introduced initiatives like the Malaysia Digital Economy Blueprint also known as MyDIGITAL and also the Malaysia Digital initiative and the New Industrial Master Plan 2030 also known as NIMP 2030 (Economic Planning Unit, 2021). These initiatives are created to make a strong digital infrastructure while improving technological capability and at the same time develop digital skills among the workforce (MITI, 2018). These initiatives encourage SMEs to adopt digital innovation within their sectors and enhance their productivity and their competitiveness in a global market (MITI, 2018; Economic Planning Unit, 2021). These policies by the government shows Malaysia's commitment to build a digitally capable and innovation driven economy which can adapt to fast changing technological transformations (MITI, 2018; Economic Planning Unit, 2021).

Even though many policies and investment support have been contributed to make digital transformation in Malaysia smooth, the rate of digital innovation adoption among Malaysian entrepreneurs in SMEs remains inconsistent (Shukor et al., 2023). While some businesses have successfully integrated digital technologies in their daily operations, many SMEs continue to use basic traditional digital tools and struggle to implement more complex and advance digital innovations (Shah et al., 2025). Financial limitations of SMEs, lack of digital literacy among the employees, technological uncertainty among the entrepreneurs, their resistance to change and unequal access to digital infrastructure continue to create challenges for digital innovation adoption specially among SMEs (Shukor et al., 2023; Shah et al., 2025; Sangosanya et al., 2025). These challenges suggest that even if the technologies are available with government support, they alone do not guarantee a smooth and successful digital transformation.

While a lot of previous research has examined and analyzed digital transformation and technological adoption, much of the available research has focused on testing complex theoretical models and analyzing specific individual technologies rather than providing a foundational and descriptive overview of the current situation. At the same time many of the empirical studies overlook how factors like as precise firm size, exact business location and the demographics and the characterize of the current landscape of adoption in SMEs in Malaysia. Without having a clear picture of demographic and descriptive data, it's difficult to design and create targeted interventions.

Building upon this research gap, this study aims to analyze and assess the current situation of digital innovation adoption among the SME Entrepreneurs in Malaysia. The objective of this study is to establish a descriptive profile of their demographic characteristics, organizational structures and the current state of technological readiness.

Literature Review

The Economic Context of SMEs in Malaysia

Malaysian Small and medium-sized enterprises (SMEs) is the backbone of Malaysian economy (Arshad et al., 2024). SMEs make up approximately 97.2% of all business establishments in the country. It provides nearly half of the entire national workforce employment (Arshad et al., 2024). Furthermore, micro, small, and medium enterprises (MSMEs) contribute roughly 37.4% of Malaysia's gross domestic product (GDP) (Loo et al., 2023). It also contributes heavily to overall export revenues and serves as an engine for both urban and rural wealth distribution (Loo et al., 2023). The structural agility and adaptability of these SME allow them to quickly fill niche gaps of the markets that larger multinational corporations sometimes overlook (Abu Hasan et al., 2022).

Despite the economic role and market share, the unexpected outbreak of the COVID-19 pandemic highlighted severe systemic vulnerabilities within SMEs (Arshad et al., 2024). For businesses that were slow to implement digitalization strategies before the pandemic showed severe systemic vulnerabilities (Arshad et al., 2024). Traditional SMEs that relied completely on traditional foot traffic and manual analog record-keeping suffered revenue losses compared to the ones who implemented digitalized system (Arshad et al., 2024). This exposed a significant digital divide within the Malaysian SMEs (Arshad et al., 2024). This division calls an urgent intervention from both economists and policymakers to accelerate technology adoption (Loo et al., 2023). Consequently, adopting a digital business model has evolved from a luxury to an important necessity for the SME to survive (Abu Hasan et al., 2022). Digitalization is an important strategy to close the big productivity gap between local SMEs and larger multinational corporations (Abu Hasan et al., 2022). It provides the necessary infrastructure for these smaller businesses to scale their operations bigger without increasing in overhead costs (Loo et al., 2023). Without a targeted effort to digitalize policy makers, Malaysian SMEs risk being becoming obsolete in a rapidly growing globalized and digitalized market (Arshad et al., 2024).

Digital Transformation and Industry 4.0 Adoption

The state of digital transformation is rapidly evolving, and it is fundamentally reshaping the way businesses operate and the expectations of consumers worldwide (Verhoef et al., 2021).

Digital transformation utilizes innovative technologies to make operations efficient, create innovative products and expand market share across both local and global markets (Verhoef et al., 2021). This transition is not only about upgrading hardware but it's a complex transition in how organizations use advanced digital technologies to develop completely new digital business models that create more and better value for the firm and consumer (Verhoef et al., 2021).

For SMEs in Malaysia, this transformation heavily involves the integration of Fourth Industrial Revolution also known as IR 4.0 technologies (Tajudeen et al., 2025). Advance digital technologies refer to complex innovations that go beyond basic software, and it includes artificial intelligence (AI), the Internet of Things (IoT), cloud computing, the analysis of big data and usage of automated robotics (Abu Bakar et al., 2024; Khazaei, 2020; Tajudeen et al., 2025). The successful integration and addition of these advance digital technologies allow businesses to predict future market demands and shifts and also to improve customer relations through personalized and customized service and takes the business to sustainable and long-term growth (Tajudeen et al., 2025).

However, despite having various national policy initiatives like Industry4WRD program which is designed to accelerate technological digitization, the actual adoption rate remains very low (Shahzad et al., 2023). Recent empirical data shows that less than 21% of Malaysian SMEs have effectively implemented IR 4.0 in their main business processes (Shahzad et al., 2023). This low adoption rate of using IR 4.0 indirectly shows that Malaysia currently lacks behind in the country's industrial evolution (Shahzad et al., 2023). Primary reason is because many businesses view advanced technological digitalization as a very complex process with uncertain returns on financial investments (Shahzad et al., 2023).

Technological and Organizational Drivers of Adoption

To fully implement digital innovation, SMEs need understanding of the characteristics of the innovations by themselves and understand the organizational environments and context in which these firms work. Previous research shows that the driving factor for Malaysian SMEs to transition to advance digital technologies are operational advantages, technological compatibility with existing system, external competitive market pressure and strong support from management (Shahzad et al., 2023). SMEs are more likely to financially invest in a digitalized system if they can directly see other businesses succeeding with the same technology and it significantly lowers the perceived risk of their financial investment (Ramayah et al., 2013).

For example, if SME's main supply chain stakeholders force or mandate them to use a particular digital inventory management system software, this increases the external and environmental pressure for the SME to adopt the software regardless of the business's current technological readiness (Abu Bakar et al., 2024). Historical research in Malaysian manufacturing sector have found that even though financial benefits are extremely important, the initial difficulty of learning a new technology doesn't determine the firm level adoption (Ramayah et al., 2013). This shows that the managers of SMEs are willing to navigate through the complex processes of training the employees if the technology has a high potential of significant advantage in terms of the organizational output (Shahzad et al., 2023). Successful integration of advanced digital technology happens when the technology aligns smoothly with the organization's specific contextual and operational needs (Shahzad et al., 2023).

Behavioral and Individual Determinants

Beyond broad organizational factors, the attitudes and priorities of individual SME owners play a vital role in the digitalization process (Loo et al., 2023). Because SME structures are often highly centralized, the personal perspective of the owner-manager is usually the deciding factor in whether the company modernizes. Entrepreneurs are far more likely to adopt digital systems if they foresee clear, tangible improvements in their daily operational efficiency and revenue generation (Loo et al., 2023). If a manager cannot clearly visualize how an AI tool or cloud platform will directly benefit their bottom line, the initiative will likely fail to launch.

Furthermore, peer observation and industry trends act as powerful catalysts (Khazaei, 2020). When entrepreneurs observe their competitors successfully leveraging digital platforms to capture market share, the desire to maintain their standing within the business community often drives them toward rapid digitalization (Khazaei, 2020). This highlights that the personal attitudes, competitive awareness, and strategic intentions of the entrepreneur are just as important to understand as the physical capabilities of the technology itself (Loo et al., 2023).

Contextual Barriers to Digitalization

Despite understanding the theoretical and practical benefits of digitalization, the realities faced by small entrepreneurs often severely inhibit digital adoption (Arshad et al., 2024). Small and financially constrained SMEs in Malaysia continue to lag due to internal resource deficiencies, severe skills gaps among older employees, and systemic challenges in securing external financing to fund digital overhauls (Arshad et al., 2024). Digitalization requires a high initial capital outlay, which many micro-enterprises simply cannot afford without targeted government subsidies (Arshad et al., 2024). The adoption of advanced digital infrastructure is also frequently hindered by high ongoing maintenance costs and a lack of embedded digital culture within the workforce (Abu Bakar et al., 2024).

Employees accustomed to traditional workflows often exhibit strong resistance to change, viewing automation and new software as threats to their job security rather than tools for empowerment (Abu Bakar et al., 2024). This internal friction requires significant leadership and change-management skills from SME owners to overcome (Loo et al., 2023). To unleash the full potential of these MSMEs, it is imperative that policymakers address these specific organizational and environmental constraints (Arshad et al., 2024). Providing robust facilitating conditions, such as specialized training programs, tax incentives for software purchases, and improved rural broadband infrastructure, is vital (Loo et al., 2023). Government interventions must shift focus from merely providing physical technology to actively fostering digital readiness, psychological resilience, and long-term strategic planning among entrepreneurs (Loo et al., 2023).

Methodology

Research Design

This study adopted quantitative research design using a cross-sectional survey. The main objective this research is to analyze the digital innovation adoption among Malaysian entrepreneurs within the Industry 4.0 context. A quantitative research design was selected because it objectively measures variables and shows a clear descriptive profile (Creswell &

Creswell, 2018). By using a cross-sectional method, the research shows the overall glimpse of the technological readiness across the business sector at single specific time (Saunders et al., 2019). This research design is appropriate for descriptive studies that focus on summarizing findings across a broad population (Bryman & Bell, 2015).

The survey method was shown to be the most efficient way to gather standardized and quantifiable data from a geographically scattered group of business owners in Malaysia (Sekaran & Bougie, 2016). Administering a structured survey style questionnaire minimizes the biasness of the researchers and it makes sure that all respondents are evaluated using the same metric (Creswell & Creswell, 2018). Overall, this research design provided a general foundation for summarizing the current state of digital integration in Malaysia (Saunders et al., 2019).

Population and Sampling

The target population for this study were Malaysian entrepreneurs and SME owners operating across different business sectors. To become an eligible respondent for this study, the participants had to fulfil few criteria. They must be the owner or the founder or a high-level decision maker of a registered SME in Malaysia. This study used a stratified sampling method to ensure appropriate representation of different industries and different business locations (Saunders et al., 2019). This sampling method divided the target population into subgroups, so that the minority sectors were represented and not overlooked by bigger industries (Bryman & Bell, 2015). By collecting data from both urban and rural businesses, the study is less biased towards any specific location and shows an overview of the national digital landscape.

To get the minimum sample size, this study used G*Power technique to calculate the minimum participant needed to make this study statistical reliability for descriptive profiling (Faul et al., 2007). After distributing and then cleaning the data, the final sample size of the respondent was 167. This sample size was sufficient to measure the demographic data and to understand the level of digital readiness within the SMEs in Malaysia.

Data Collection Procedure

The questionnaire was distributed through SME associations and entrepreneurship networks. It was also distributed through business communities, and social media platforms across Malaysia. The link off the online survey was shared via WhatsApp, Facebook, Telegram, and direct email. Using these digital platforms helped the research team to avoid geographical challenges and at the same time it helped to reach diverse audiences efficiently.

However, this study acknowledges the potential self-selection bias which might be inherent in this approach. Because the survey was distributed only through digital platforms, entrepreneurs who are already digital knowledge were more likely to participate. This kind of limitation is common when it comes to online survey research, especially in this topic of digitization (Bryman & Bell, 2015). To avoid getting invalid data, the survey was distributed through verified business networks. By doing so, it helped to identify and validate the professional identity of the study respondents. It also helped by ensuring that the data were strictly reflected the views of active entrepreneurs in Malaysia. Using digital surveys prevented errors which happen during manual data entry by directly adding raw responses into the statistical software (Creswell & Creswell, 2018).

Participation in this study was voluntary, and respondents were informed about the main purpose and objective of the study. All responses were confidential and the data was anonymized. The data collected in this research was used only for academic purposes to protect the privacy of the entrepreneurs and their firms. To make the survey clearer and easier to understand for the respondents, it was divided into sections that divided the demographic variables and the operational profiles effectively.

Data Analysis

The data collected was analyzed using the Statistical Package for the Social Sciences (SPSS) version 29 to conduct descriptive statistics (Pallant, 2020). SPSS is widely recognized as a highly reliable and versatile tool for analyzing survey datasets in social sciences (Field, 2018). The preliminary analysis involved data screening to check for missing values and data entry errors, ensuring that the dataset was clean and ready for evaluation (Hair et al., 2019). Following the initial data cleaning process, descriptive statistics were generated to summarize the basic features of the data in the study (Pallant, 2020).

Specifically, frequency distributions and percentages were calculated to outline the demographic profiles of the respondents (Field, 2018). Similar descriptive techniques were applied to detail the operational characteristics and current digital adoption levels of their respective firms (Pallant, 2020). This approach provided a clear and organized summary of the sample characteristics without making unsupported inferential leaps (Hair et al., 2019). Ultimately, these analytical procedures offered a straightforward empirical overview that perfectly matched the specific descriptive scope of the collected data (Pallant, 2020).

Data Analysis & Results

Respondent Profile

Table 1 details the demographic characteristics of the 167 respondents who participated in the study. The sample was predominantly female, comprising 59.9% (n=100) of the respondents, while males accounted for 40.1% (n=67). The majority of the participants fell within the 31 to 40 age bracket (48.5%), followed by the 41 to 50 age group (28.7%), indicating that most respondents were mature professionals. In terms of ethnicity, the largest group was Malay (44.9%), followed by Chinese (34.7%) and Indian (20.4%).

Regarding educational attainment, the respondents were highly educated overall. The highest percentage held a Diploma (34.1%), closely followed by those with a bachelor's degree (29.3%) and a master's degree (18.6%). Professionally, the respondents held significant decision-making roles within their organizations. The most common designations were Managing Director (22.2%), General Manager or Operations Manager (19.2%), Owner (17.4%), and Chief Executive Director (16.8%). Nearly half of these individuals (49.7%) had accumulated between 4 to 6 years of experience in their current organization, demonstrating a solid foundation of industry familiarity.

Table 1: Demographic Characteristics of the Respondents

Variable	Category	Frequency	Percentage %
Gender	Male	67	40.1
	Female	100	59.9
Age	18-20 years old	13	7.8
	21-30 years old	14	8.4
	31-40 years old	81	48.5
	41-50 years old	48	28.7
	51-60 years old	11	6.6
Ethnicity	Malay	75	44.9
	Chinese	58	34.7
	Indian	34	20.4
Highest Level of Education	Secondary School (SPM / equivalent)	17	10.2
	Diploma	57	34.1
	Bachelor's Degree	49	29.3
	Master's Degree	31	18.6
	PhD	13	7.8
Respondent's Position / Designation	Owner	29	17.4
	Chief Executive Director (CEO)	28	16.8
	Managing Director	37	22.2
	General Manager / Operations Manager	32	19.2
	IT Manager / Technology Officer	23	13.8
	Department Head / Senior Executive	18	10.8
Years of Experience in Current Organisation	Less than 1 year	6	3.6
	1 – 3 years	22	13.2
	4 – 6 years	83	49.7
	7 – 10 years	41	24.6
	More than 10 years	15	9.0

Source: Author

Company Profile

Table 2 outlines the organizational profiles of the participating firms. More than half of the businesses operated as Private Limited Companies (53.3%), with Partnerships (26.9%) and Sole Proprietorships (19.8%) making up the remainder. The enterprises represented a diverse mix of business sectors, led by Digital/Technology (28.1%), Manufacturing (24.6%), and Services (23.4%). Geographically, the businesses were heavily concentrated in the Central and Northern regions of Malaysia, particularly in Selangor (20.4%) and Kedah (19.2%). Consequently, nearly half of the firms were situated in urban locations (49.1%), while 30.5% operated in rural areas and 20.4% in sub-urban areas.

In terms of business maturity and size, the majority of the firms had been operating for 6 to 10 years (54.5%) and were classified as Micro enterprises (56.3%), followed by Small enterprises

(34.7%). Only a small fraction (9.0%) was categorized as medium enterprises. Finally, when assessing their current digital readiness, slightly more than half of the firms (50.9%) reported maintaining only a Basic level of digital adoption in their daily operations. Only 27.5% reported an Advanced level of adoption, underscoring a significant opportunity for further digital transformation within the sector.

Table 2: Demographic Characteristics of the Respondents.

Variable	Category	Frequency	Percentage %
Ownership Structure	Sole Proprietorship	33	19.8
	Partnership	45	26.9
	Private Limited Company	89	53.3
Business Sector	Manufacturing	41	24.6
	Services	39	23.4
	Retail/Wholesale	24	14.4
	Agro-based	16	9.6
	Digital/Technology	47	28.1
State in Malaysia and Region	Northern Region: Perak	15	9
	Northern Region: Perlis	21	12.6
	Northern Region: Kedah	32	19.2
	Northern Region: Pulau Pinang	14	8.4
	Central Region: Selangor	34	20.4
	Central Region: Putrajaya (Federal Territory)	8	4.8
	Central Region: Kuala Lumpur (Federal Territory)	11	6.6
	Southern Region: Johor	8	4.8
	Southern Region: Melaka	6	3.6
	Southern Region: Negeri Sembilan	2	1.2
	Eastern Region (East Coast): Pahang	6	3.6
	Eastern Region (East Coast): Kelantan	2	1.2
	Eastern Region (East Coast): Terengganu	4	2.4
	East Malaysia (Borneo): Sabah	4	2.4
Business Location	Urban	82	49.1
	Sub-urban	34	20.4
	Rural	51	30.5
Years of Business Operation	Below 3 years	11	6.6
	3 – 5 years	37	22.2
	6 – 10 years	91	54.5
	More than 10 years	28	16.8
Firm Size	Micro	94	56.3
	Small	58	34.7
	Medium	15	9

Level of Digital Adoption in Business Operations	Basic	85	50.9
	Moderate	36	21.6
	Advanced	46	27.5

Source: Author

Conclusion

Summary of Findings

This study set out to assess the current landscape of digital innovation adoption among Malaysian SME entrepreneurs within the context of Industry 4.0. The descriptive analysis revealed that the majority of participating businesses are micro and small enterprises operating primarily in urban areas, reflecting the broader structural composition of the national economy. Despite the critical need for digitalization to ensure long-term survival, a significant portion of these businesses continue to rely on elementary digital tools. Specifically, the primary data indicated that over half of the respondents maintain only a basic level of digital integration in their daily operations.

These findings suggest that resource constraints heavily dictate the pace of technological diffusion among smaller firms. The high concentration of basic digital adoption highlights the ongoing practical barriers and financial limitations that businesses face. While entrepreneurs generally recognize the performance benefits of digital tools, the reality of implementing advanced digital systems remains challenging. Therefore, achieving comprehensive digital transformation continues to be a gradual process for the Malaysian SME sector.

Implications and Future Research

The results from this study provide valuable empirical insights for policymakers and industry stakeholders aiming to cultivate a more robust digital ecosystem. To effectively bridge the digital divide, initiatives from the government must move beyond merely providing general physical infrastructure. Specifically, policymakers and SME support agencies should proactively provide targeted digital skills training, direct financial subsidies or grants for software acquisition, and dedicated technology advisory services. Furthermore, implementing sector-specific digitalisation programmes could help alleviate the perceived complexity of advanced digital systems, encouraging higher adoption rates by catering to the specific operational needs of different industries.

While this study provides a foundational descriptive overview of current trends, future research should expand on these findings by incorporating complex inferential statistical analyses. Subsequent studies could explore the direct causal relationships between specific organizational constraints and actual adoption behavior across different business sectors. Additionally, conducting longitudinal research would allow scholars to track exactly how digital readiness evolves over time in response to changing market pressures and new policy implementations. Broadening the methodological scope will ultimately generate a more comprehensive understanding of digital innovation diffusion among Malaysian business owners.

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