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Unveiling Technology Integration in Small Medium Enterprises (SME): A Phenomenological Inquiry

[1]Kardina Kamaruddin,[1]Ira Syazwani Mohamad Marzuki, [2]Noor Malinjasari Ali, [2]Suzila Mat Salleh, [2]Roszainora Haji Setia, [3]Rahayu Izwani Borhanuddin, [2]Afif Zuhri Muhammad Khodri Harahap, [4]Hasmi Mokhlas

[1]Faculty of Business and Management, Universiti Teknologi MARA Cawangan Kedah, Malaysia, [2]Faculty of Business and Management, Universiti Teknologi MARA Cawangan Terengganu, Malaysia, [3]Faculty of Accountancy, Universiti Teknologi MARA Cawangan Johor, Malaysia, [4]Faculty of Business and Management, Universiti Teknologi MARA Cawangan Melaka, Malaysia

Corresponding Author Email: noorm726@uitm.edu.my

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Abstract

The purpose of this research is to investigate factors influencing technology adoption among Small and Medium Enterprises (SMEs) in Penang, Malaysia. This study employs an in-depth interview among 15 Small and Medium Enterprises (SMEs) in the Manufacturing and Service sectors using the phenomenology approach. Since the research was done using qualitative research, a thematic analysis is employed. The findings could be concluded into two themes, which are: perceived ease of technology use and perceived usefulness of technology tools. For further research, the researchers suggested to employ a bigger sample size and triangulation method for data collection.

Keywords: Technology Adoption, Technology Integration, Readiness to Use, Ease of Use, Technology Tools, Phenomenal Approach, Small Medium Enterprise

Introduction

Small and medium-sized businesses (SMEs) have a substantial impact on Malaysia's economic development. In Malaysia, SMEs account for 97.0 percent of all business entities and 65.0 percent of the jobs in the nation are employed by these companies (Rahman, Ali and Anuar,2024). According to a survey conducted by SME Corp and Huawei Technologies (Salleh and Nudbisi, 2006), few micro, small, and medium-sized businesses use cloud computing, or data analytics. Many SMEs currently lack the necessary tools to make the shift to digitalization. For instance, the industrial and services industries have made major contributions to the revenues from and expenditure on e-commerce. At the state level,

Selangor, Federal Territory of Kuala Lumpur, Johor, and Penang are the regions that are leading the digital economy as shown by certain indicators (Idris et al, 2023).

Making partnerships with international players in important markets is the first step for Malaysian SMEs to become global players. This is to facilitate the transfer of technological information, which would, in turn, prevent the loss of potential money and expertise that would otherwise enable us to succeed on par with industrialised nations. Low levels of technological adoption and information and communications technology penetration are a problem for the Malaysian SME sector, according to Saleh and Ndubisi (2006). Many academics have attempted to delve more into how SMEs are utilising technology. In general, it was stated that one should look into the firm's traits, competitiveness, and management strategies, as well as the effects of internal and external factors on the adoption decision-making process and the characteristics of the technology selected (Idris et al, 2023; Aithal et al, 2022; Lefebvre et al., 2007).

As research on technology adoption among SMEs in Penang is relatively low and only 10 to 15 percent of SMEs had taken proactive action in implementing the 4.0 technology (Eza et al, 2018; Tan et al, 2010; Beatty et al, 2001). As the world was infected by the corona virus or COVID-19, there were some things that had been changing and one of it is the way the world is doing their trading since during COVID-19, people were asked to keep their boundaries and no close contact to prevent the virus to be active.

The issue that had been faced by Malaysians is that even though the government had reduced the movement control order, people in Malaysia had already been used and accustomed to buy things online and preferred to buy things through online platforms. This statement is inline with analysis report on e-commerce on online payment which stated that e commerce industry in Malaysia currently valued at RM4 billion and expected to be increased by 24.0 percent yearly (Idris et al, 2023). Business management had witnessed the drastic changes in technology through the usage of internet and hence, the increase in productivity (Idris et al, 2013). The usage of internet served as a platform for small and medium enterprises to compete with others (Rahman et al, 2024). However, the proses of complex digitalization need to have changes in their thinking and style especially in rural community (Idris et al, 2023).

The digital technology expansion in business has been a challenge to small and medium entrepreneurs since they have limited resources to develop the technology as their finance, technical, and labor. The SME entrepreneurs also had weaknesses in adopting and adapting the new technology quickly as they lacked in knowledge and experience in handling digital technology especially the older generation (Idris et al., 2023). SME entrepreneurs had faced some issues in their usage of technology due to lack of training, knowledge and technology as well as the drawback of high-speed internet in some rural areas which is almost close to zero. In addition, the usage of high technology will incur costs to the entrepreneurs. Therefore, the SME entrepreneurs used very minimum technology so that the operation cost could be lowered and most of them did not use technology efficiently in their business. In a nutshell, it can be concluded that the usage of technology among SME entrepreneurs in Malaysia has been on lower percentage because of numerous factors and limited finance and

technical resources (Rahman et al., 2024; Idris et al., 2023; Albar & Hoque, 2019; Zaremohzzabieh et al., 2016).

The integration of technology within Small and Medium Enterprises (SMEs) has emerged as a pivotal factor influencing their operational efficiency and competitive advantage, particularly in the context of Penang, Malaysia. This region, known for its vibrant economic landscape, presents a unique opportunity to explore how SMEs navigate the complexities of technology adoption and integration. The phenomenon of digital transformation is not merely a trend; it is a necessity for SMEs aiming to thrive in an increasingly competitive global market. Digital technologies such as artificial intelligence, cloud computing, and the Internet of Things (IoT) are foundational to the digital transformation process, enabling SMEs to enhance their performance and adapt to changing market dynamics (Teng et al., 2022).

Moreover, the significance of technology in driving economic development is underscored by the positive impact of information technology on the organizational performance of SMEs, as observed in Indonesia (Mukhtar et al., 2020). This finding resonates with the broader narrative that SMEs leveraging technology can achieve substantial improvements in productivity and operational efficiency. However, the journey toward successful technology integration is fraught with challenges, including the need for strategic alignment and the development of requisite skills among SME owners and employees. Emphasizing the importance of adopting new technological innovations to remain competitive, SMEs must proactively embrace change rather than resist it (Temel & Durst, 2020).

The advent of Industry 4.0 further complicates the landscape for SMEs, as it introduces new business models and operational paradigms that necessitate a re-evaluation of existing practices. A systematic literature review identifies key themes related to the impact of Industry 4.0 on SME business models, emphasizing the need for a holistic approach to technology adoption that encompasses value creation, proposition, and capture (Soondka & Smuts, 2021). However, the adoption of Industry 4.0 technologies among SMEs in Penang remains notably low, with studies indicating that only 10-15% of these businesses have proactively integrated such technologies into their operations (Mira et al., 2021). This statistic highlights a significant research gap, as the potential benefits of Industry 4.0—such as enhanced efficiency, improved productivity, and competitive advantage—remain largely untapped by a majority of SMEs in the region (Mohiuddin et al., 2023; Bettiol et al., 2021). This perspective is critical for SMEs in Penang, as they must navigate the intricacies of integrating advanced technologies into their business frameworks to remain relevant and competitive.

In addition to technological challenges, the socio-economic context of Penang plays a crucial role in shaping the experiences of SMEs. The COVID-19 pandemic has acted as a catalyst for many SMEs to accelerate their digital transformation efforts, highlighting the necessity of adopting technological tools as a survival strategy during crises (Mishrif, 2023). This urgency underscores the need for SMEs to not only adopt technology but to do so in a manner that aligns with their strategic objectives and operational capabilities. Furthermore, the perceived usefulness of technology indicates that a lack of ICT skills among SME owners can hinder their ability to leverage technology effectively (Niyongere, 2023). This gap in skills and knowledge

can lead to suboptimal technology adoption, ultimately affecting the growth and sustainability of SMEs.

The interplay between technology adoption and innovation capability is another critical area of focus. Research has shown that innovation capability significantly impacts SME performance, with technology adoption serving as a mediating factor in this relationship (Jalil et al., 2021). This suggests that SMEs must cultivate a culture of innovation and continuously seek out new technological solutions to enhance their competitive edge. The integration of technology should not be viewed as a one-time event but rather as an ongoing process that requires constant evaluation and adaptation. As SMEs in Penang embark on their technology integration journeys, they must also consider the barriers that may impede their progress. Research on digital transformation barriers in Vietnam highlights the importance of addressing resource constraints, including IT infrastructure, human capital, and strategic alignment, to facilitate successful technology adoption (Hải, 2021). This insight is particularly relevant for SMEs in Penang, as they must navigate similar challenges in their quest for digital transformation.

Therefore, this study aims to fill the research gap by exploring the factors influencing technology adoption among SMEs in Penang, Malaysia. By employing a phenomenological approach, the research seeks to uncover the lived experiences of SME entrepreneurs as they navigate the complexities of digital transformation. Understanding these experiences is crucial not only for developing targeted interventions that can support SMEs in overcoming the barriers to technology adoption but also for providing a nuanced understanding of how technology integration impacts performance and socio-economic outcomes. The integration of technology within SMEs in Penang is a multifaceted phenomenon that requires a strategic approach, considering both the foundational role of digital technologies in enhancing business performance and the broader socio-economic implications of such adoption. This phenomenological inquiry aims to unveil these intricate experiences, offering valuable insights that can inform policy and practice in the region, thereby empowering SMEs to thrive in an increasingly digital economy. Unveiling the technology integrations, especially digital technology, among SME entrepreneurs needs to be conducted. There have been several research conducted extensively since the last decade to recognize the variables that have been influencing the usage of technology according to Betty et al.(2001), Danial & Wilson (2002), and Ezra et al. (2018) but very few had been done on unveiling the technology integration, especially in small and medium industries (Betty et al., 2001; Danial & Wilson, 2002; Ezra et al., 2018). Hence, there is a special need for more research on unveiling technology integration, especially among small and medium industry entrepreneurs (Idris et al., 2023; Shafi & Mokhtar, 2021).

The existing research on technology integration among Small and Medium Enterprises (SMEs) is limited, with studies indicating that only 10-15% of SMEs have actively implemented Industry 4.0 technologies (Idris et al., 2023; Gupta & Arora, 2020; Eza et al., 2018; King et al., 2017; Tan et al., 2010; Gunasekaran & Ngai, 2007; Lefebvre et al., 2007). While some research has explored technology integration in Malaysia, these studies have primarily focused on the west coast, excluding Penang state from their scope.

To address this gap, the present study aims to investigate the challenges faced by SMEs in Penang, Malaysia, regarding the adoption of new technologies. For the purposes of this research, technology adoption is broadly defined as the process of accepting, integrating, and utilizing new technologies within an organization. Specifically, this study seeks to uncover the perceptions of technology adoption among SMEs in the Penang area. At this stage in the research, technology adoption will be generally defined as the integration of technology into an SME's business model.

Literature Review

Adoption of Information and Communication Technology (ICT)

Research has been done extensively over the past few decades to identify the variables that affect the adoption of Information and Communication Technology (ICT), according to Betty et al., 2001; and Eze et al., (2018). Surprisingly little has been done on the adoption of (ICT in Small and Medium Enterprises. However, past literature has mentioned the lack of time to adopt e-business, the high level of complexity associated with e-business implementation, and the high implementation cost connected with e-business technologies are generally cited as the three main hurdles (Gunasekaran & Ngai, 2007; Li & McQueen, 2008; Tan et al., 2010). Some studies looked at the adoption of the Internet from a broader perspective and discovered that external pressure from rivals, suppliers, and customers, as well as government intervention and public administration, play a significant role in the adoption and implementation of IT, particularly in e-commerce (Daniel & Wilson, 2002). Due to a lack of trained employees in applying information technology (IT), some SMEs in Malaysia are still not well established in ICT, despite the world being currently led by digital technology (Saleh & Ndubisi, 2006). Since technology adoption in small and medium enterprises or industries is crucial, therefore this research purpose will examine what are the factors that influence technology adoption in small and medium enterprises.

The Importance of SMEs to Malaysia Economic Sector in the Development of the Country

The extensive economic development has significantly impacted the country's economic, political, and social landscapes. The National Entrepreneur Policy 2030 aims to ensure that all segments of society, particularly entrepreneurs, benefit from the nation's wealth. Recent economic strategies in Malaysia have focused on boosting productivity and industrial efficiency to drive growth (Rahman et al., 2024).

Small and Medium Enterprises (SMEs) play a crucial role in economic development, especially in rural areas where they form the backbone of local economies. Rural entrepreneurs often sell handicrafts, snacks, and other goods in local markets, night markets, and at tourist destinations. These businesses not only generate profits but also create job opportunities for local residents in production, packaging, and marketing (Rahman et al., 2024).

However, rural entrepreneurs often require government support, particularly in negotiation skills and access to equipment, to develop their businesses and contribute to the growing tourism industry through products like handicraft souvenirs. SMEs also play a vital role in supplying necessities for production in the agriculture and fishing sectors. To meet the increasing demand for raw materials, the government has established expert services such as FAMA (Federal Agricultural Marketing Authority) and PELADANG (Farmers' Organization

Authority), among others (Rahman et al., 2024). Furthermore, the growth of SME industries has indirectly and directly encouraged the expansion of other sectors, including tourism.

SME is significant to rural entrepreneurs in moving the local economy. Past research has shown that the usage of technology by traditional entrepreneurs is one of the ways to gain a competitive advantage over their competitors, especially in the context of digital technology applications (Aithal et al., 2022). Past studies have also shown that using digital technology could have SMEs in creating added value in making decision, and improving customer service, interaction with suppliers and the whole increased value in operation and business efficiency (Aithal et al., 2022; Idris et al., 2023).

The COVID-19 pandemic has forced customers to choose online platforms for some sort of trading, hence making SME entrepreneurs involved in online transactions because of their customer needs and wants (Halan, 2021). The COVID-19 pandemic unexpectedly created new opportunities for SME entrepreneurs. Movement Control Orders (MCOs) limited people's mobility, compelling customers to seek goods within their local communities. This shift allowed SMEs to expand their business offerings to meet local demand. During this period, SME entrepreneurs adapted by embracing user-friendly technologies. They began taking orders through WhatsApp, a popular smartphone messaging application, and implemented QR code payment systems. These digital tools also facilitated credit management and purchasing.

The ease of use and accessibility of smartphone applications proved advantageous for SMEs. These platforms not only streamlined business operations but also introduced entrepreneurs to new promotional strategies for market penetration. The simplicity and effectiveness of these digital solutions helped SMEs navigate the challenges posed by the pandemic while expanding their customer base (Halan, 2021; Aithal et al., 2022; Idris et al., 2023).

Factors Influencing the Usage of Technology

The Unified Theory of Acceptance and Use of Technology known as UTAUT model was developed by Venkatesh et al (2006), and is used as a model as a beginning point for research in usage in technology (Sargent et al., 2012). This model can be used to identify factors that influence the usage of technology in an organization. UTAUT model also can be used in a literature review on technology usage in an organization (Sargent et al., 2012). In the context of SME, things like attitude, technology, costs and workforce are among the factors that can influence the usage of technology in an organization (Rahman et al., 2024; Idris et al., 2023; Aithal et al., 2022; Kumar & Ayedee, 2021). SME has their own unique characteristics in terms of limited resources, technical capabilities, organization configuration and it is related to the owner of the company and their attitude (Rahman et al, 2024).

Nevertheless, there are also other factors that influenced the usage of technology, such as the third party that could help in the usage of technology or factors like management teams or the SME itself (Aithal et al., 2022). There are also other factors that influence the usage of technology in SMEs, such as self-awareness, workers' awareness, and support systems for the chain of business that are needed in challenging situations (Rahman et al., 2024). Having a good social network and varied will help SMEs handle all the challenges and can survive in any circumstances (Rahman et al., 2024; Idris et al., 2023).

Technology Acceptance Model

Technology Acceptance Model state that when any technology start to be introduced, there are factors that influenced the usage of that particular technology. This model showed that the combination of various factors that influenced the usage of technology, such as environmental factors, organization, and the individual itself. Taking into consideration various aspect of usage in technology, the model contribute to the important aspect and entrepreneurs choice in usage of technology. This is because the usage of technology among rural entrepreneurs was still scarce (Idris et al., 2023).

Usage of Digital Technology

In our increasingly interconnected world, the development and adoption of new technologies have accelerated to meet society's evolving needs. For small and medium-sized enterprises (SMEs), particularly those in rural areas, online services such as fiber optic and mobile internet connections offer opportunities to reach new potential customers and enhance their competitive edge. The significance of digital technology aligns with research findings on the advantages of embracing innovative technologies (Idris et al., 2023, Halan, 2021). With digital technology, limitations such as getting new workers and cross-cultural communication can be managed effectively and easily (Halan, 2021). He also stated that digital technology could help entrepreneurs interact in such a way that could not be conducted before with a new industry, new vendor, or new user. This can help entrepreneurs get the benefit through their digital technology usage. The usage of digital technology in new economic structures has also become an important component in SMEs, especially in rural areas, to strengthen their businesses. Digital technology helps the small company to expand and gain an advantage in terms of administrative performance, learning, workers efficiency, and expertise in terms of marketing (Rahman et al., 2024; Idris et al., 2023; Aithal et al., 2022; Halan, 2021).

Methodology

This research employed a descriptive qualitative approach with a phenomenological focus. The researchers aimed to uncover the meaning of concepts or phenomena based on participants' experiences and awareness (Gupta & Arora, 2020). The study took place from October 15 to November 30, 2022. Participants were selected using purposive sampling, a non-probability method suitable for qualitative research. Data collection involved in-depth interviews, recorded using voice recorders, and direct observation. The interviews followed a structured format based on the Technology Acceptance Model (TAM), which was chosen as the theoretical framework due to its emphasis on perceived ease of use and usefulness in determining consumer acceptance of technological tools (Gupta & Arora, 2020). Interview data was analyzed using ATLAS.ti software. The study focused on small and medium-sized business owners registered with SME Corporation Malaysia, operating in the manufacturing and service industries with annual sales below RM50 million.

Results Analysis

This study was conducted as a descriptive qualitative study with a thorough phenomenological approach. Using this method, researchers aim to uncover the meaning of a concept or phenomenon based on the awareness that occurs among the participants (Idris et al., 2023; Rahman et al., 2024). This research was conducted from October 15 to November 30, 2022. The method of selecting participants was non-probability sampling with purposive sampling, which was deemed appropriate for a qualitative study.

In this study, 15 respondents aged 28 to 56 were interviewed (coded as P1, P2, P3, P4, P5, P6, P7, P8, P9, P10, P11, P12, P13, P14, and P15). The researchers chose participants who are registered with SME Corporation Malaysia. SME Corporation Malaysia was chosen as the study's business frame because it is a one-stop agency for the overall coordination of SME policy formulation and evaluation of SME development programs. All participants are running small and medium-sized businesses in the Malaysian manufacturing and service industries and have experience running businesses with annual sales of less than RM50 million. All participants declared their willingness to provide information needed by researchers to achieve the goal of this study. Data collection in this study was carried out through in-depth interviews using a voice recorder and direct observation techniques. Interviews were conducted structurally using interview guidelines prepared by researchers based on the theory acceptance model (TAM). In this research, TAM may be viewed as the more suitable theoretical framework, as the model proposes that the perceived ease of use and usefulness of a technological tool determines the extent of consumer acceptance (Idris et al., 2023). All the data obtained from in-depth interviews was then analyzed using ATLAS.ti software.

Table 1
Demographic Information of Research Participants

Participant	Age	Experience	Sector	Sales turnover (RM)	Employee count
1	28 m	> 5 years	Services and other sectors	< 1 million	<100
2	30 m	> 5 years	Services and other sectors	< 1 million	<100
3	35 m	>10 years	Manufacturing	< 5 million	<200
4	35 m	> 5 years	Services and other sectors	< 1 million	<100
5	41m	>10 years	Manufacturing	< 5 million	<200
6	29 m	> 5 years	Services and other sectors	< 1 million	<100
7	48 x	> 5 years	Services and other sectors	< 5 million	<200
8	32 m	> 5 years	Services and other sectors	< 1 million	<100
9	49 x	>10 years	Manufacturing	< 5 million	<200
10	30 m	> 5 years	Services and other sectors	< 1 million	<100
11	44 x	>10 years	Manufacturing	< 5 million	<200
12	57 x	> 15 years	Services and other sectors	< 1 million	<100
13	52 x	> 10 years	Services and other sectors	< 5 million	<200
14	43 m	> 5 years	Services and other sectors	< 1 million	<100
15	44 x	> 10 years	Services and other sectors	< 5 million	<200

The sample studied for this investigation consisted of fifteen businessmen and women aged between 28 and 56 years. This demographic and range represent community members interested in technology adoption (Idris et al., 2024). Table 1 provides a brief description of the sample, including the number of samples given to each participant (in lieu of their names) to protect their identity. Various sectors are presented by the participants (manufacturing and services).

Data Results

The age and experience of all participants are heterogeneous. Participants are divided into two age groups: Generation X (six participants) and Generation Y (nine participants). The experience among the participants ranges from 5 to more than 15 years in SMEs. Age differences are strongly related to technology adoption (references). Younger generations are more sensitive to technological changes, such as the incorporation of new technologies into business processes and productions. The findings of the in-depth interview analysis were organized into two themes, which are described below.

Theme 1: Perceived ease of use

The way individuals sense their personal and job-related situations while they are using technology tools or software plays an important role in the acceptance of technology. Based on the opinions expressed by participants, 4 groups of sub-themes go for the ease-of-use technology, namely training, opportunities, technology expertise, and technology familiarity. The expressed statements by participants were listed below:

"At this age, I need to learn about new things [technologies]. There are seminars on this matter but I go and listen only. I need the chance to see the technologies in action and to try out the technologies", stated by P5, P7, P9, P12, P13, P15;

"I will go for good training. Provide me with good training opportunities and I will make the time" stated by all participants;

"I get information mainly from government agencies, sharing sessions with other SMEs or friends, attending seminars, online information, and overseas partnerships. Malaysia needs more experts", stated by all participants;

"We need local experts because they know how our [Malaysia] systems work and what we have [infrastructures]" stated by P1, P2, P3, P4, P5, P6, P10, P15;

"I want user-friendly tools and software. I don't want to spend money to have another department just for IT", stated by P3, P4, P5, P9, P10, P11, P12, P13, P14, P15;

"I am comfortable using technologies that I am used to, so no need for upgrades", stated by P11, P12, P13, P14, P15;

Theme 2: Personal view on the meaning of perceived usefulness

Perceived usefulness is the way that an individual believes that using a particular technology would be beneficial. The participants describe the term beneficial in terms of how the technology affects their organizations. The opinions expressed by participants about their personal views on how technology is useful in their organizations can be grouped into 3 sub-themes that portray the influence of technology usefulness in SMEs, namely financial, dependency, and readiness. The stated opinions indicating the sub-themes are listed below:

"Technology always changes. I do not have enough money to chase technology", stated by P5, P7, P9, P12, P13, P15;

"Financial constraints are why we do not use up-to-date processes and systems", stated by all participants;

"I run a small business, so I do not want to be dependent on consultants. They [consultants] are expensive", stated by P1, P2, P3, P4, P5, P6, P10, P15;

"Everytime internet is down, it is so difficult to do work because cannot access to everybody [suppliers, customers, employees, and overseas partners, stated by P1, P2, P3, P4, P6, P7, P10, P11, P13, P14, P15;

"Technology is useful when everybody is ready to use", stated by all participants;

"Technology is only useful to my company when my customers and employees are willing to use 100%", stated by all participants.

Discussion

The results of this research on the perceived use of technology indicated that training opportunities, technology expertise, and technology familiarity are key factors that influence technology adoption among SME (Small and Medium Enterprises) organizations. Providing training opportunities to participants helps to build their knowledge and skills related to the technology, leading to higher adoption rates. Training opportunities are important because they help participants gain a deeper understanding of the technology they are using. This understanding can increase the employees' confidence in using the technology, which can lead to higher adoption rates. Technology expertise of SME owners and the organization as a whole also plays a crucial role in ensuring effective implementation and utilization of technology. Technology expertise refers to the knowledge, skills, and experience an individual or an organization has in using and implementing technology.

For technology adoption to be successful, it's important that SME owners have the necessary expertise to use the technology effectively. This includes having a good understanding of the technology, as well as the ability to troubleshoot any issues that may arise. Familiarity with technology, including an understanding of its features and benefits, also helps to drive adoption among SMEs. Familiarity with technology refers to the degree to which individuals or organizations are familiar with and understand the technology they are using. This includes having knowledge of the technology's features and benefits, as well as how it can be used to improve their work processes. Familiarity with technology can help to increase adoption rates by reducing fear and resistance to change and by increasing the perception of the technology as useful and beneficial. For SMEs, familiarity with technology is important because it can help to overcome common barriers to adoption, such as lack of knowledge and understanding, and concerns about the cost and complexity of the technology. All that had been discussed in this paragraph could be concluded into one sentence, perceive ease of use of technology.

Financial affordability refers to the ability of small and medium-sized enterprises (SMEs) to afford the cost of technology solutions. This cost can include hardware, software, and maintenance expenses, among others. Financial affordability is a significant factor that can influence technology adoption in SMEs, as they often have limited budgets and may not have the resources to invest in expensive technology solutions. If the cost of the technology is too high, SMEs may be less likely to adopt it, even if it could benefit their business. SMEs may need to consider alternative solutions to overcome financial barriers to adoption, such as

cloud-based solutions, open-source software, or low-cost hardware options. Knowledge dependency refers to an organization's reliance on its employees' knowledge and expertise to effectively adopt and use technology.

In the context of technology adoption in small and medium-sized enterprises (SMEs), knowledge dependency can play a significant role in the success of technology implementation. SMEs with employees with the knowledge and expertise to effectively use and adopt technology are more likely to successfully implement and use technology, leading to improved productivity, efficiency, and competitiveness. To overcome knowledge dependency, SMEs may need to provide training opportunities for their employees to build their knowledge and skills related to the technology they are using. Adoption readiness refers to the level of preparedness of an organization to adopt and use new technology. In the context of technology adoption in small and medium-sized enterprises (SMEs), adoption readiness can play a significant role in the success of technology implementation. SMEs that are ready to adopt technology, i.e., they have the necessary infrastructure, resources, and personnel in place, are more likely to successfully implement and use technology, leading to improved productivity, efficiency, and competitiveness.

To increase adoption readiness, SMEs may need to assess their current infrastructure and resources, identify any gaps or limitations, and invest in the necessary upgrades or improvements. They may also need to assess the skills and knowledge of their employees and provide training opportunities to build their knowledge and skills related to the technology they are using. All these factors that have been discussed in this paragraph could be summed up in one sentence: the perceived usefulness of technology tools. Since the research objective is to investigate factors that influenced technology adoption, it has been achieved as discussed above.

Conclusions and Recommendations

This research utilizes a phenomenological approach, a qualitative method that examines individuals' subjective experiences and perceptions. In studying technology adoption, this approach helps uncover the essence of users' experiences and insights as they integrate new technologies. The study's findings highlight several key factors influencing technology adoption in SMEs:

- Availability of training opportunities
- Familiarity with technology
- Presence of in-house technology expertise
- Financial capability
- High knowledge interdependence among staff
- Adoption readiness, which comprises:
    - Perceived ease of use
    - Perceived usefulness of technological tools

These elements play crucial roles in shaping SMEs' technology adoption processes. For future studies, the researchers recommend employing triangulation methods and expanding the sample size to include a broader range of small and medium industries across Peninsular Malaysia. This approach could enhance the robustness and generalizability of the findings.

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