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E-Business Adoption among Women-Owned Small and Medium-Sized Enterprises in Malaysia: A Conceptual Perspective

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Abstract: This conceptual study examines relative advantage, compatibility, and complexity as technological drivers of e-business adoption among women-owned small and medium-sized enterprises (WOSMEs) in Malaysia. The mediating effect of e-business adoption between the technological variables and WOSME performance is also discussed. Literature on the technological factors of e-business adoption is reviewed and classified to develop an extended conceptual framework. The conceptual framework serves as a foundation for future empirical research and offers practitioners insights into the benefits of e-business adoption for WOSMEs in Malaysia. Specifically, e-business adoption can secure competitive advantages in terms of efficiency, sales performance, customer satisfaction, and relationship development. Even though this study presented the fundamental conceptual framework to comprehend e-business adoption among WOSMEs in Malaysia, future research offers a huge possibility to expand the framework and explain the key constructs' roles in determining performance.

Keywords: E-Business, small and medium enterprises, firm performance, Diffusion of Innovation (DOI), Resource-Based View (RBV), women entrepreneurs

1. Introduction

The contribution of small and medium-sized enterprises (SMEs) is an important indicator for countries to augment their gross domestic product (GDP), create job employment, drive innovative ideas, and upscale productivity and flexibility. For developing countries like Malaysia, the transition towards becoming a high-income nation depends greatly on the growth of SMEs (World Bank, 2016). Moreover, SMEs are critical sources of value-added services for multinational corporations (MNCs), especially in the manufacturing sector.

The dependency on technological applications arose during the pandemic to ensure business survival. Today, e-business adoption has become essential for SMEs to survive, sustain, and grow amid this crisis. Additionally, e-business increases the efficiency of SME processes. Hence, SMEs need to be flexible in reforming and transforming the role of e-business adoption to enhance competitiveness. Yet, the "post-adoption gap" of SMEs in e-business remains

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significant (OECD, 2021). Particularly, SMEs in Malaysia are still unprepared for this shift and lag behind in digital transformation (World Bank, 2018).

According to a report by SME Corp Malaysia (2022), 97.4 percent or 1,226,494 business establishments in Malaysia are categorised as Micro, Small, and Medium Enterprises (MSMEs), of which women-owned small and medium-sized enterprises (WOSMEs) only represent about 20 percent. However, the Department of Statistics Malaysia (2021) reports that females represent about 48 percent of the Malaysian population. The relatively equal proportion of women in the population reflects the importance of women's contribution to the economy in this digitalisation era. Indeed, Malaysia's government embraces women entrepreneurs with strategic and policy goals to assist and support them.

Despite various strategic programs and initiatives for the development of women entrepreneurs, they remain underrepresented in Malaysia. This might be due to the existing support programs that do not specifically focus on WOSMEs. The lack of digital skills also impacts competitiveness among WOSMEs (Mack et al., 2017; Orser et al., 2019). As a result, WOSMEs underperform in business compared to male-owned SMEs (International Finance Corporation, 2014; Ong et al., 2020). In fact, WOSMEs lost nearly 10 percent more in revenue during the COVID-19 crisis than similar companies run by males (World Bank, 2022).

Women's contribution to economic development has been a highlight in recent years, as seen in the increasing number of women-specific reports, such as the Global Entrepreneurship Monitor (GEM) Women's Entrepreneurship Report and the Mastercard Index of Women Entrepreneurs (MIWE) report. The importance of WOSMEs in economic growth has also been recognized in the Asia-Pacific Economic Cooperation (APEC) region with the establishment of APEC's Policy Partnership on Women and the Economy (PPWE) in 2011 to address female economic empowerment among APEC members (APEC, 2021).

According to Abbad et al. (2021), there is a lack of research on both the determinants and performance of e-business adoption. This research, thus, focuses on WOSME performance and the technological drivers of e-business adoption. Furthermore, e-business adoption is introduced as a mediator between technological drivers and WOSME performance. The present theoretical framework deploys the diffusion of innovation (DOI) theory and the resource-based view (RBV) to address and answer the research questions as below:

RQ1. What is the relationship between technology factors (relative advantage, compatibility, and complexity) and e-business adoption among WOSMEs?

RQ2. Does e-business adoption mediate the relationship between technology factors (relative advantage, compatibility, and complexity) and WOSME performance?

RQ3. What is the relationship between e-business adoption and WOSME performance?

Since the Covid-19 pandemic crisis, e-business adoption has accelerated due to movement control restrictions implemented to curb the spread of the virus. WOSMEs have had to shift from traditional business to digital business platforms to survive (Abed, 2021), while those unprepared for this digital shift will find it challenging to survive. According to the MIWE Report, more than 50 percent of WOSMEs will not survive the impacts of Covid-19 (Mastercard, 2020). This is because women generally lag behind men in technology adoption, and the digital gender gap between men and women continues to expand in developing countries (International Telecommunication Union, 2020). Hence, the emergence of digital transformation may result in greater gender inequalities between WOSMEs and SMEs owned by men (Alam et al., 2022).Therefore, more investigation is required to examine WOSMEs' e-business adoption and its mediating role in performance.

The remainder of this paper is organised as follows. The conceptualisation of e-business adoption and the theoretical framework are presented in section 2 and section 3, while the hypotheses are developed in section 4. The proposed research methods are outlined in section 5, followed by the discussion and recommendations for future work in section 6. Finally, section 7 provides the conclusion of this research.

2. Theoretical Background

2.1 Diffusion of Innovation (DOI) Theory

The DOI theory was developed by Rogers (1983) with a focus on four elements (innovation, communication channel, time and social system) to explain how, why, and at what rate new ideas and technology spread. The DOI theory has five important attributes: relative advantage, compatibility, complexity, observability, and trialability (Rogers, 1983). This theory has been widely used in research on innovation adoption, such as to depict the adoption trends of a new technology, product, service process, or technique among SMEs in Malaysia (Hsu et al., 2006). According to Rogers (1983), technology adoption is bound to five adopter categories over a long timeframe: innovators (2.5 percent), early adopters (13.5 percent), early majority (34.0 percent), late majority (35.0 percent), and laggards (16.0 percent). The percentage of adopters may refer to an individual, a group, or an organisation based on the study context (Haneem et al., 2019). Hence, this theory is suitable for the analysis of WOSMEs' e-business adoption in Malaysia. In this study, three attributes of DOI, namely relative advantage, compatibility, and complexity, are used as the technological drivers of e-business adoption.

WOSMEs have been categorised as the late majority or laggards because of their financial and socio-technical constraints compared to large corporations in the same industry (Ayinla & Adamu, 2018). In contrast, the cost of e-business has reduced due to scaling in the capacity of large corporates (NST, 2020). WOSMEs should take this opportunity to embrace the digital journey. According to Abbad et al. (2021), the innovation process of SMEs improves with e-business adoption, as this process requires technology collaboration tools like e-business. Indeed, SMEs are known for their potential to innovate products and services to increase business performance (Herman et al., 2021).

E-business is not only a communication tool but is also compatible for the use and support of SMEs' current process, development, and innovation. Process innovation is facilitated by the capabilities of e-business to generate and acquire knowledge from extensive data on customers and partners and thereby, offer suggestions for operational or product improvement (Cruz-Jesus et al., 2019). The directions and ideas gained from e-business help firms develop or reinvent better products and services in the future. Innovation is the key for WOSMEs to create competitive advantage, which requires technological support. Since the Covid-19 pandemic, the Malaysian government has emphasised the benefit of e-business in streamlining WOSMEs' business processes, innovation, and flexibility. To support the innovation initiatives of SMEs, the government provides grants like the Smart Automation Grant (SAG) and Digital Content Grant (MDEC, 2021). However, a lack of creativity in e-business has limited firms' growth opportunities (Teng &Tsinopoulos, 2021).

2.2 Resource-Based View (RBV)

The RBV theory is the principal theory in research on firms' competitive advantage and available internal resources. Edith Penrose originated this theory from "The Theory of Growth of The Firm' published in 1959 (Wernerfelt, 1984). Then, Wernerfelt (1984) introduced the RBV theory, which focuses on a firm's competitive advantage by analyzing its use of resources. It states that resources in a firm are the primary source of competitiveness to enhance performance (Barney, 1991) and are critical to business growth and profitability (Eller et al., 2020; Galbreath, 2005). In other words, the RBV theory is known for utilising limited resources to achieve competitive advantage and organisational performance (Hanifah et al., 2021). Generally, RBV defines resources broadly, including assets, infrastructure, and skills (Popa et al., 2018). Putra & Santoso (2020) and Maroufkhani et al. (2020) supported that the RBV theory is suitable for analyzing the capability of technology adoption in value creation, effectiveness, and performance. An SME may enhance its efficiency and seize economic opportunities by combining its capacities to integrate, assemble, and deploy e-business adoption resources with a broader range of management skills (Alam et al., 2022). The research context must be appropriate and the variables adapted must relate to technology adoption (Teng & Tsinopoulos, 2021). Hence, the RBV theory is appropriate for this research context, as it posits e-business adoption as a resource that can improve WOSMEs' performance in terms of productivity, efficiency, and innovation (Abbad et al., 2021; Abebe, 2014; Maroufkhani et al., 2020; Qalati et al., 2021). Moreover, Thottoli & Ahmed (2021) opined that e-business adoption can enhance resource efficiency. Hence, SMEs must embrace suitable technologies for digital transformation in this era to avoid being left behind (Mahakittikun et al., 2020).

3. Literature Review

3.1 Technology Factors

Malaysia is driving towards digital transformation to remain competitive in the digital world. Technology has become an important indicator of business success in this digital arena. Technology innovation is the ability to transfer knowledge into new products, designs, processes and information to improve firm performance (Wang et al., 2006). Malaysian WOSMEs need to speed up their adoption process and increase digital capabilities to compete in the global market. In this regard, the SME Digital Guidebook launched by MDEC intends to guide SMEs in their digital adoption journey (MDEC, 2021). Technology adoption and innovation have indeed become the primary focus for SMEs in Malaysia with the establishment of e-commerce adoption, technology commercialization platforms, and inclusive innovation under the SME Masterplan 2012-2020. Furthermore, the launch of the Fourth Industrial Revolution (National 4IR Policy) indicates that Malaysia is moving towards a digital innovation journey.

According to the Department of Statistics Malaysia (2017), women-owned businesses contribute to the value of gross output and value added by less than five percent. This contribution is relatively lower than male-owned enterprises. Generally, women-owned businesses contribute lower profits and less quality than male-owned businesses (Ghouse et al., 2021). The limited access to information, including on funding, networking, or mentorship programs, has restricted women-owned businesses' opportunity to expand their enterprises and impact their performance (Gupta & Mirchandani, 2018). Malaysia's high ranking in digital readiness is not reflected in its business digitalization status, as the majority of traditional Malaysian WOSMEs suffer from a lack of technological awareness, readiness, and know-how. Therefore, WOSMEs are reluctant to adopt e-business. Additionally, the low adoption rate among WOSMEs is due to the cost and risks associated with e-business adoption, such as software, hardware, network facilities, and telecommunication access (Mkansi, 2021). In truth, the compatible characteristic of e-business reduces WOSMEs' risk and cost barriers when it is a good fit with the current conditions of firms (Bhatiasevi & Naglis, 2018).

3.2 E-Business Adoption

The terms e-business and digital business can be used interchangeably based on research perspectives, such as in distinguishing between finance and operation and whether transacted activities are electronic or digital (Wall et al., 2007). Generally, e-business can be defined as internet activities that support business processes (Ukaj et al., 2020; Wang & Cheung, 2004) or the conversion of non-digital or manual processes into electronic procedures (AlMulhim, 2021). According to Zhu et al. (2020), WOSMEs should deploy e-business adoption at various process levels to form the requisite capability to enhance competitive advantage.

Raymond & Bergeron (2008) classified e-business capabilities into e-communication, e-commerce, e-collaboration, and e-intelligence. E-communication refers to the basic capabilities of e-business, such as communication using the internet or intranet (Raymond & Bergeron, 2008). This is consistent with Huawei's (2018) finding that most SMEs in Malaysia adopt e-business to improve administrative work. The activities in e-communication include e-mails, data entry, websites, and responses to internal and external inquiries. In addition, e-businesses can maintain SME information in a secure environment by restricting access to confidential information to organisational personnel (Thottoli & Ahmed, 2021).

Additionally, platform such as Lazada and Shopee become primary selection for WOSMEs to exchange products, services, or information. The virtual platform that mirrors the brick-and-mortar shopping experience, enabling customers to select, view, transmit, and pay online (Depaoli et al., 2020). Notably, the importance of e-business has increased since the pandemic.

3.3 WOSME Performance

AlMulhim (2021) explained that performance can be employed to evaluate the success of SMEs. Therefore, the primary focus of this study is WOSMEs' performance. Performance indicators comprise financial and non-financial methods. In most cases, performance is measured using a financial indicator. To enhance the assessment of performance, both indicators are used in this study's framework to measure WOSME performance in Malaysia. From the financial perspective, according to Popa et al. (2018), e-business adoption affects operational costs and improves return on assets. From the non-financial aspect, Wu et al. (2003) opined that performance improvement includes customer satisfaction and relationship management. For instance, Khayer et al. (2020) found that Bangladesh SMEs can boost both their financial and non-financial performance with the effective adoption of cloud computing to improve revenue, profit margin, sales, return on assets (ROA), return on equity (ROE), return on investment (ROI), market share, product/service quality, and corporate growth. Cost reduction, sales increase, operational improvement, and customer relationship enhancement have also been shown as firm performance outcomes from mobile payment adoption (Mahakittikun et al., 2020). Besides that, operational performance in the form of flexibility, responsiveness, and reliability have been utilised to measure performance (Alsheyadi, 2020). In this study, the indicators used to measure e-business adoption performance include efficiency, sales performance, customer satisfaction, and relationship management (Migdadi et al., 2016; Wu et al., 2003).

4. Hypotheses Development

4.1 The Relationship Between Technology and E-Business Adoption

Based on extant research, relative advantage, compatibility, and complexity are the most consistent drivers of technology adoption (Putra & Santoso, 2020; Mahakittikun et al., 2020; Maroufkhani et al., 2020). **Relative advantage** has been defined "as the degree to which an innovation is perceived as being better than the idea it supersedes" (Rogers, 1983, p.213). This term is similar to "perceived benefits" in the Iacovou adoption model of technology (Iacovou et al., 1995). Relative advantage is known as a significant driver of technology adoption, including e-business (Zhu et al., 2006), e-commerce (Alam, 2009; Kurnia et al., 2015), e-payment (Mahakittikun et al., 2020), social media (Qalati et al., 2021), e-market (Deng et al., 2020), and enterprise application (Ramdani et al., 2013). According to Deng et al. (2020), SMEs consider adopting e-business to achieve quick gains, such as improvement in operational efficiency, reduced expenses, and a large customer base. In addition, Lin et al. (2020) pointed out that agricultural firms' choice to adopt e-business is heavily influenced by relative advantage. Similarly, WOSMEs are likely to adopt e-business if they perceive benefits in terms of cost, efficiency, or performance compared to current practices (Kurnia et al., 2015). The relative advantage of e-business has been more significant since the Covid-19 outbreak, when e-payment, e-commerce, and e-grocery became alternative business models during the lockdown period to minimise physical transactions (Mombeuil & Uhde, 2021).

Compatibility is defined as "the degree to which an innovation is perceived as consistent with the existing values, past experiences, and needs of potential adopters" (Rogers, 1983, p.223). E-business adoption must be consistent with SMEs' business values and beliefs (Badi et al., 2021; Maroufkhani et al., 2020), and compatible with SMEs' nature of business, risk, cost, infrastructure, process, and current support system (Bhatiasevi & Naglis, 2018; Mkansi, 2021; Ramdani et al., 2013). According to Zhu et al. (2006), compatibility is one of the strongest elements of the DOI theory in driving e-business adoption. However, incompatibility, such as internet connectivity issues, may occur during the e-

business adoption process, which would negatively influence the adoption. Due to the Covid-19 pandemic, the acceleration of e-business adoption among SMEs to survive may increase its compatibility.

Complexity is defined as "the degree to which an innovation is perceived as relatively difficult to understand and use" (Rogers, 1983, p.230). A new technology's complexity determines the firm's intention to adopt it (Shi & Yan, 2016). Complexity refers to the user's technique in implementing new technology (Yadegaridehkordi et al., 2020) and its difficult or complicated set-up in SMEs. SMEs tend to withdraw from the adoption of e-business if it challenges their current process or demands major organisational changes (Prause, 2019). SMEs also perceive higher risk if the adoption of e-business is complex (Maroufkhani et al., 2020). Since complex e-business adoption is frequently associated with uncertainty, it can make successful adoption more challenging to execute (Badi et al., 2021). According to Thong (1998), complexity is an important determinant even though it is negatively associated with technology adoption. The complexity of new technology adoption can be overcome with a proper timeline, communication, and training.

Therefore, for them to adopt e-business, WOSMEs must perceive that e-business has a comparative advantage over competing technologies, is compatible with existing business processes, and is simple to use. Based on the above, the following hypotheses are proposed:

H_1: Relative advantage has a positive impact on e-business adoption.
H_2: Compatibility has a positive impact on e-business adoption.
H_3: Complexity has a negative impact on e-business adoption.

4.2 The Relationship Between E-Business Adoption and WOSME Performance

SME performance is a pillar of economic development, especially for developing countries like Malaysia. The performance of WOSMEs is an important indicator to help Malaysia achieve high-income status by 2030. Traditionally, performance is measured by ROA or ROI (Chen et al., 2016), but recent studies (Alsheyadi, 2020; Chandak & Kumar, 2020) have included non-financial elements in performance assessments. Additionally, SMEs that embrace e-business to a greater extent are better positioned to take advantage of its benefits and, as a result, to achieve superior e-business functioning (Kartiwi et al., 2018). According to AlMulhim (2021), e-business not only increases productivity but also strengthens stakeholder relationships. SMEs that adopt e-business perform better in terms of efficiency, sales performance, customer satisfaction, and relationship management (Migdadi et al., 2016; Wu et al., 2003). Additionally, e-businesses are able to improve their sustainable performance by controlling cost, quality, and sustainability in order to enhance customer satisfaction (Chandak & Kumar, 2020). As per Maroufkhani et al. (2020), a firm's ability to process information efficiently with the support of big data analytics improves the financial and non-financial performance of the firm. Thus, the following hypothesis is proposed:

H_4: E-business adoption has a positive impact on WOSME performance.

4.3 The Relationship Between Technology Factors, E-Business Adoption, and WOSME Performance

In this study, e-business adoption is proposed to play a mediating role in WOSMEs' performance in the technology context. According to Qalati et al. (2021), technology adoption is significant in mediating between technology constructs and SME performance. Eid et al. (2006) also pointed out that e-business success is dependent on the communication and collaboration of relationships facilitated by technology. Generally, technology adoption has positive impacts on the organisation (e.g., cost reduction, improved customer service, increased data accessibility, supportive partnerships, time savings, and competitive advantage), which possess mediator criteria (Abdullah et al., 2018; Migdadi et al., 2016). Moreover, SME performance can be improved through innovation, such as the ability to create new knowledge with e-business applications. E-business adoption that aligns with SMEs is less vulnerable to changes in the business process (Raymond & Bergeron, 2008). For this reason, the efficiencies of SMEs improve as integration of e-business with existing hardware, software, and strategy is compatible. Apart from that, e-business adoption is able to manage, automate and analyze data (Cruz-Jesus et al., 2019; Lucia-Palacios et al., 2014). This process can reduce complexity as data can be generated across departments to integrate front-end and back-end organisation activities (Lucia-Palacios et al., 2014). Most studies thus far have focused on the performance outcomes of e-business adoption for SMEs. Meanwhile, few studies have examined how e-business adoption mediates the effect of technology factors on firm performance (Qalati et al., 2021). This study thus proposes that the relationship between each technology driver and WOSME performance is mediated by e-business adoption. Accordingly, the following hypotheses are postulated:

H_5: E-business adoption mediates the relationship between relative advantage and WOSME performance.
H_6: E-business adoption mediates the relationship between compatibility and WOSME performance.

H_7: E-business adoption mediates the relationship between complexity and WOSME performance.

Based on the above propositions, figure 1 exhibits the conceptual framework of this study. This study mainly puts forth the relationships among technology factors, e-business adoption, and WOSME performance.

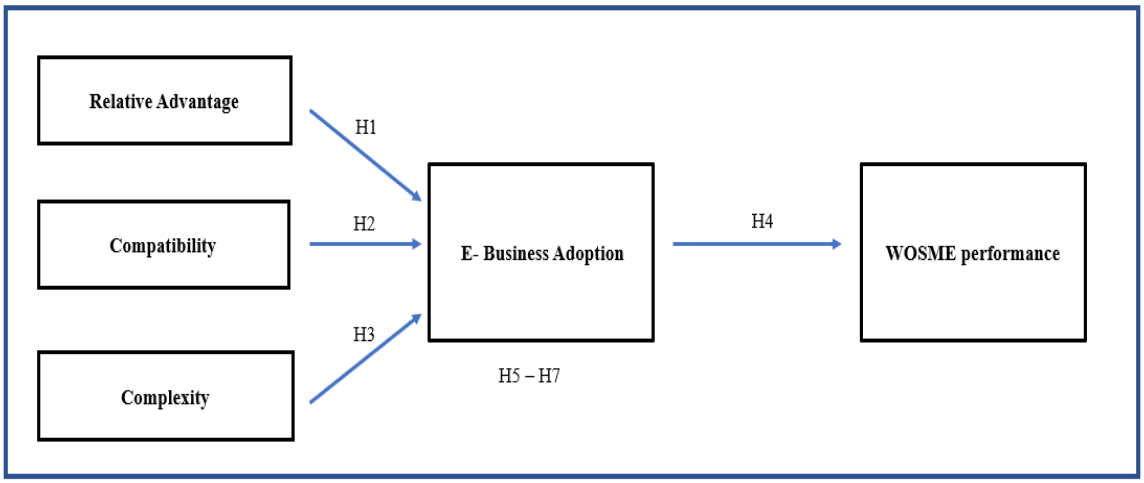

Fig. 1 - Conceptual framework

5. Research Method

The triangulation research methodology, which involves the use of more than one method (Kumar et al., 2022), will be undertaken for this study. This method enhances research findings by providing a range of datasets to explain various aspects of a phenomenon (Noble & Heale, 2019). A structured set of questionnaires will be distributed to WOSMEs across Malaysia. The WOSMEs will be selected using purposive sampling based on a sampling frame of WOSMEs in Malaysia compiled from the MATRADE directory. The subjects in this study will consist of active, current, and registered WOSMEs who fulfil either one of the two definitions of WOSME below:

a. More than 51 percent of equity is held by a woman/women
b. Chief Executive Officer (CEO) or Managing Director (MD) is a woman who owns at least 10 percent of equity.

If the criteria are met, the online method will be adopted to distribute the questionnaire to the respondents via e-mail. After two weeks, a reminder will be sent to those who did not respond. The initial e-mail will include an extensive cover letter explaining the study's objectives and for assuring data confidentiality.

5.1 Preliminary On-Site Interview

In order to gain a new viewpoint on their management experiences, particularly with regard to the issues of technology, e-business, and performance, preliminary interviews with five female SME owners will be conducted as part of a pilot study and qualitative data collection. This supports the assertion of Richards & Morse (2002) that a qualitative approach is appropriate if the objective is to learn from the participants in a setting or process in terms of how they experience a phenomenon, what significance they assign to it, and how they interpret what they feel. The information from the preliminary on-site interviews will be utilised to adjust the framework on the importance of the technological variables in influencing performance through e-business in the Malaysian context.

5.2 Ethics in Data Collection

Researcher ethics in data collection encompass the collection, storing, and sharing process. According to Sekaran & Bougie (2016), the data provided by the respondent must be treated as confidential. To ensure the privacy of the respondent is protected, the report or any related publication will strictly maintain their anonymity. Additionally, participants are allowed to refuse to answer any questions or withdraw from the questionnaire. Data must be processed according to the consent form of the proposed research (Saunders et al., 2019). Apart from this, data must be stored in a secure location with limited access to ensure confidentiality (Sekaran & Bougie, 2016).

6. Discussion and Future Works

The propositions of this study are consistent with the previous research indicating the relationship between technology adoption and business performance. Therefore, WOSMEs must accept the reality of economic transformation toward e-business adoption, especially since it impacts their performance. However, as the technology context is broad and complex, this study has several limitations.

First, this study focuses on the technology factors in WOSMEs in Malaysia by combining the DOI and RBV theories. Other technology adoption models, such as the Theory of Planned Behavior (TPB), Technology Acceptance Model (TAM), Task-Technology Fit (TTF) model, and Unified Theory of Acceptance and Use of Technology (UTAUT) are recommended to be tested in future research to gain an in-depth understanding of e-business adoption. Additionally, the extension of the technology drivers is suggested to better examine WOSMEs.

Second, comparative analysis of women- and male-owned SMEs' performance can be contemplated in future research as well. Meanwhile, the analysis of e-business adoption can extend to the industry level, commodity level, country level, and global international level. In addition, scholars can consider focusing on generational differences across WOSME owners in technology adoption, as they comprise baby boomers, generation X, generation Y, and generation Z.

This study adopts quantitative analysis and thus provides limited outcomes due to its structured questionnaire that lacks personalisation. Therefore, future research is recommended to adopt qualitative or mixed mode analysis. Longitudinal studies are also needed to broaden the literature and better understand long-term e-business entrepreneurship. Finally, a non-digital skillset should be incorporated for e-business adoption in future research.

7. Conclusion

This study adds to the body of knowledge on women entrepreneurs by emphasising the importance of e-business adoption in promoting women's success. Malaysia's goal of becoming a high-income country by 2030 is within reach if WOSMEs can grow in e-business adoption. The findings of this study may be used by practitioners and policymakers to gain better knowledge of the impact of e-business adoption on WOSME performance. This study also helps the government determine the best practices and efficacy of government involvement in supporting WOSMEs' performance. Specifically, the Ministry of Women, Family and Community Development (MWFCD), the Ministry of Entrepreneur Development and Cooperative (MEDAC), the Malaysian External Trade Development Corporation (MATRADE), and SME Corp Malaysia are expected to benefit from this research in developing targeted assistance and support programs for WOSMEs to boost their performance.

The growth of e-business adoption among WOSMEs ensures a more equitable distribution of wealth, thereby reducing gender inequality in Malaysia as pledged in the 2030 Sustainable Development Goals (SDGs). Moreover, the Jalinan Digital Negara (Jendela) initiative aims to improve the coverage of information and communication technology (ICT) infrastructure and highlights the importance of e-business adoption in Malaysia (Koya, 2020). The National Digital Transformation Program also aligns with the strategies of the Shared Prosperity Vision (SPV) 2030, Fourth Industrial Master Plan (IMP4), New SME Master Plan (2021-2030) and Malaysia Digital Economy Blueprint, all of which seek to encourage technology adoption for digital business (Economic Unit Planning, 2021). Therefore, WOSMEs need to embrace e-business adoption to realize productivity gains.

In conclusion, underpinned by the DOI and RBV, this conceptual paper succeeds in integrating technology drivers, e-business adoption, and WOSME performance in Malaysia. Considering the current debate on WOSMEs' lack of technology adoption, this study hopes to encourage more discussion and theoretical development related to e-business in entrepreneurship and firm performance, specifically among women entrepreneurs.

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