Quest Journals
Journal of Research in Business and Management
Volume 11 ~ Issue 4 (2023) pp: 38-44
ISSN(Online):2347-3002
www.questjournals.org

Research Paper

Determinants of Mobile Commerce Usage Among Microenterprises in Malaysia: A Conceptual Framework

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ABSTRACT: *The objective of this study is to determine the factors that influence the use of m-commerce in the business activities of microenterprises in Malaysia. Extensive research was conducted based on document analysis/academic literature. The findings indicate that several factors, namely relative advantage, ease of use, compatibility, trialability, and observability, influence the use of m-commerce by Malaysian microenterprises and led to the proposal of a conceptual framework. The findings collected in this study are useful and can guide microenterprises and new entrepreneurs in using m-commerce in the future.*
KEYWORDS: *Diffusion of innovation, mobile commerce, microenterprises*

Received 01 Apr., 2023; Revised 09 Apr., 2023; Accepted 11 Apr., 2023

I. INTRODUCTION

Digitization is important to drive economic growth and business sustainability. The 12th Malaysia Plan focuses on developing an economy based on high technology, known as the digital economy. The digital economy has been identified as a Key Economic Growth Activity (KEGA) to achieve the vision of Shared Prosperity 2030 [1]. It contributed up to 22.6% of the country's GDP in 2020 [2]. This means that digital skills and digital innovation are important factors in today's era of digital economy [3].

Recently, the government has suggested businesses to move from a traditional business model to a digital business model to ensure that a business remains flexible and innovative. Doing business in digital form or online business is easier and more suitable, especially for microenterprises to ensure business continuity [4]. In addition, the development of a sustainable business can be achieved through the use of technological innovation [5][6]. However, there are barriers for microenterprises to use digital technology, such as relatively high cost of digitization, unsustainable digital infrastructure, and lack of skills and expertise. This is considered a barrier for microenterprises to apply new technologies in their business [7][8].

This study focuses on mobile commerce (m-commerce). M-commerce is a digital platform that uses wireless devices such as cell phones or tablets to perform commercial activities such as selling and buying products/services, online transactions, online banking, and bill payments [9][10]. The choice of m-commerce as the focus of this study is due to the increasing penetration of mobile devices and mobile internet usage, which has also led to a global increase in transactions conducted via smartphones or tablets. In Malaysia, the percentage of smartphone users has increased to 98.2 percent in 2020 [2]. The popularity of mobile devices and the proliferation of smartphones create new opportunities for the use of m-commerce by microenterprises [11]. Moreover, m-commerce is a relevant platform that can be used by microenterprises as it offers many benefits, is easy to use and cost-effective, and can improve business performance in various ways, such as increasing sales, customer satisfaction, reducing costs, and brand promotion of products or services [12][13][14][15].

Therefore, this study used the Diffusion of Innovations (DOI) theory [16], a theory that examines the determinants of m-commerce use in the context of microenterprises in Malaysia. Unfortunately, research on m-commerce using DOI theory is still limited, and additional efforts are needed to clarify the concept and distinguish it from e-commerce [17]. The same is true for studies on m-commerce that focus on microenterprises. Most previous studies tend to focus on micro, small, and medium-sized enterprises (MSMEs) [18] and consumers [19]. To address this gap, this article proposes a conceptual framework for determining Malaysian microenterprises' m-commerce usage. The rest of this article is organized as follows. The following section presents the literature review and the research methodology used in this study. In the next section, the results and discussion are explained. Finally, general conclusions are drawn for this study.

II. LITERATURE REVIEW

2.1 Mobile Commerce

The mobile environment has created a new path that drives innovation [20]. The development of smartphones, tablets, and other mobile devices with high-speed Internet access has opened many business opportunities in the m-commerce context [7]. To take advantage of these market opportunities, existing and potential businesses may seek to leverage mobile devices to grow in their respective industries. The m-commerce platform is a subset of e-commerce that uses wireless devices such as cell phones or tablets to perform commercial activities such as product sales and purchases, online transactions, online banking, and bill payments [21][10]. Many types of m-commerce services such as mobile shopping, mobile wallet, grocery purchase, mobile banking, m-travel, m-tickets, mobile advertising, mobile education, purchase of movies, songs, or games, and mobile health are currently offered by the companies. Users can use their smart mobile devices to access m-commerce applications more easily and comprehensively anytime and anywhere [22].

In general, m-commerce offers businesses, especially MSMEs, various advantages and opportunities to reach target customers directly through mobile applications, reduce advertising and marketing costs, easily spread the brand, have no reach limitations, and flexibly respond to customers [21][23][24]. Despite the great potential of the technology, the actual penetration of m-commerce is still low worldwide, especially in developing countries. The main reason for this is the lack of understanding of the importance of m-commerce and the barriers to developing an effective strategy [7]. In this study, m-commerce refers to digital platforms through which microenterprises can conduct commercial activities such as product sales and purchases, online transactions, online banking, and bill payments via wireless devices such as cell phones or tablets. The commonly used m-commerce platforms today are virtual marketplaces (Amazon, Ebay, Shopee, Lazada), digital wallets (e-wallet, Grab Pay, QR Pay, Shopee Pay, Apple Pay), mobile banking, etc. [9]. Through m-commerce, microenterprises can conduct business transactions through Internet networks that include online advertising, ordering, payment, and distribution of goods to improve customer service [25]. Some of the benefits of m-commerce include facilitating business-to-business, business-to-customer, customer-to-customer, and government-to-business processes [26].

2.2 Microenterprises

SME Corporation Malaysia [4] defines a microenterprise as an enterprise with an annual turnover of less than RM300,000 or full-time employment of less than 5 persons. This definition applies to all microenterprises in various sectors of the economy, including manufacturing, services, construction, agriculture, and mining and quarrying. This study focuses on microenterprises because micro, small, and medium-sized enterprises (MSMEs) dominate most of the microenterprises in Malaysia. The number of microenterprises is very high compared to small and medium MSMEs. Overall, 77 percent or 693,670 MSMEs out of the total number of MSMEs are micro-sized. Small MSMEs account for 21 percent or 192,783, followed by medium MSMEs with 2 percent or 20,612 [27]. MSMEs are recognized as an engine of economic growth in all countries around the world, contributing to job creation, economic stability, export growth, and driving innovation [28]. Currently, MSMEs face the challenge of competing with large enterprises. In general, larger companies are more competitive because they have more capital to grow their business. This allows them to use higher technologies in their production lines and more aggressive online marketing for product promotion and branding [29].

2.3 Diffusion of Innovations

The theory of diffusion of innovation (DOI) is the most appropriate theory to study m-commerce usage, which is often used to explain innovation diffusion in technology development [16]. This theory aims to predict the acceptance and adoption of innovations or technologies in a social system [30]. In general, DOI explains why people adopt new ideas, products, and technologies. DOI was originally proposed in the communication literature. It is considered one of the most classic social science theories [16]. Rogers [16] defined that diffusion is the process by which innovations are communicated through specific channels over time among members of a social system. In this context, innovation is defined as an idea, practice, or object that is perceived as new by an individual or other entity that adopts it. Rogers [16] often uses the terms innovation and technology as synonyms. The theory has been used in more than a thousand studies related to technological innovation at the individual and organizational levels in developed and developing countries [31]. DOI theory has been used in many different fields such as entrepreneurship, marketing, management, education, sociology, and others [32]. According to Rogers [16], there are five determinants that could influence adoption rate, namely relative advantage, compatibility, complexity, trialability, and observability. However, in this study, the

researcher uses the term "ease of use" instead of "complexity". The reason is that the term "ease of use" suits the purpose of the study, which is to evaluate the use of m-commerce that is easy to apply in enterprises.

III. RESEARCH METHODOLOGY

The purpose of this study is to identify the factors that influence the use of m-commerce in companies. In order to achieve the objective of this study, a document analysis of previous studies was conducted. Therefore, this study will be a guide for microenterprises and new entrepreneurs to use m-commerce in the future. All documents of previous studies on m-commerce, microenterprises, and DOI were analyzed.

IV. RESULT AND DISCUSSIONS

The following section discusses the findings from the document analysis conducted. The findings from the literature review showed that DOI is relevant to the study of innovation and technology use. The use of five constructs; relative advantage, ease of use, compatibility, trialability, and observability in previous studies contributes to the development of the research framework.

4.1 Relative Advantage

Rogers [16] defined relative advantage as the extent to which an innovation is perceived as better than the idea it replaces. This means the willingness to adopt an innovation because of its advantages over existing ideas [33]. According to Rogers [16], sub-dimensions of relative advantage include economic gain, low initial cost, reduction in inconvenience, social prestige, time and labor savings, and immediate reward. What matters, however, is whether a person perceives the innovation as beneficial. The greater the perceived relative advantage of the innovation, the faster it will be adopted. Relative advantage is one of the strongest predictors of innovation acceptance and adoption.

Previous research has found that there is a positive relationship between relative advantage and attitude toward the application travel shopping. Malaysian users are more likely to be attracted to a technology application if it offers multiple benefits [34]. In a study on the use of open educational resources (OER) in higher education in Saudi Arabia. The study showed that the relative benefits have a positive impact on the adoption of OER by higher education teachers in Saudi Arabia [31]. Similarly, another study in India related to the mobile based payment system known as Unified Payment Interface (UPI). The results showed that the intention of most users in India to use UPI is influenced by the relative benefits factor. The relative advantages of UPI payment system were found to be efficiency, convenience, and timely payment [30]. Moreover, the relative advantage is positively related to the intention of young adult smartphone users to use mobile wallets (M-wallets). This is likely due to the fact that young adult smartphone users clearly perceive the advantages (e.g., convenience, efficiency, and others) that M-wallets offer compared to other payment methods [35]. In contrast to the results of a study in Indonesia that examined artificial intelligence in mobile banking, the relative advantage was found to have no impact on consumer loyalty to mobile banking [36].

4.2 Ease of Use

According to Davis [37], ease of use is defined as the extent to which a person believes that using a particular system is possible without effort. In the context of this study, micro-businesses do not require much effort or time to understand the elements of m-commerce. Through the m-commerce platform, business tasks such as marketing activities, communicating with customers, and paying suppliers can be easily accomplished at any time, regardless of location or time. Davis et al. [38] found that ease of use is significantly related to intention to use the system, which in turn leads to actual use. Previous researchers are still debating the relationship between usability and technology use. A study on e-business conducted among manufacturing MSMEs in Jordan shows that there is a positive relationship between ease of use and e-business adoption. E-business refers to the integration of online business including procedures, services, items, and processes [39].

However, another study conducted in Spain showed that ease of use does not have a positive impact on customers' intention to purchase products online through Instagram Commerce. Shoppers have difficulty buying through Instagram because the purchase cannot be made directly through Instagram. The buyer has to go to the link provided on the Instagram profile to get to the website, or they have to send a message directly to the seller if they are interested in making a purchase [40]. This is confirmed by another study on commerce on Instagram conducted with users in Palestine. The study shows that ease of use does not influence Palestinian consumers' attitudes towards online purchasing through Instagram commerce [41]. A study in Thailand found that ease of use does not influence Thai consumers' intention to use social commerce. A possible explanation for this could be that the use of social commerce does not pose any additional requirements for Thai consumers, as they have already had experience with web browsers for several years [42].

4.3 Compatibility

According to Rogers [16], compatibility is the extent to which an innovation is perceived to match the existing values, experiences, and needs of potential users. Ideas that do not fit the values and norms of the social system are not adopted as quickly as compatible innovations. Adopting incompatible innovations often requires adopting a new value system first, which is a relatively slow process. It is most ideal when the new technology is compatible with current technological infrastructure and work practices. In businesses, it is important that any changes to work practices are compatible with the company culture to avoid employee resistance. Although an online business has great potential, MSMEs need to find technology that is compatible with their organization. If it is not, there is a risk that the implementation will fail. The old system of working practices can be an obstacle to the adoption of new technologies in companies [43].

The issue of the importance of compatibility in the adoption of new technologies has been discussed in previous literature studies. Although there is a lack of results directly related to m-commerce usage, previous researchers have found that compatibility positively influences app travel shopping attitudes [34]. Another study examined the factors that influence exporters' adoption of a halal meat supply chain using DOI in Pakistan. The results of the study suggest that compatibility is one of the driving factors for the adoption of halal supply chain among the exporting meat associations in Pakistan [33]. Similarly, Kaur et al. [35] showed in their study that compatibility is positively related to users' intention to use m-wallets. This can also be explained by the fact that high intention to use is more likely when M-Wallets are compatible with users' lifestyle, choices, and current needs. However, since the system is still in its early stages in India, it is not compatible with all aspects of users in the study of mobile payment systems. In India, the majority of small payments are still made directly in cash. A study found that compatibility has no relationship with users' intention to use mobile-based payment systems [30].

4.4 Trialability

Rogers [16] explained that trialability is the extent to which an innovation can be tested to a limited extent. If an innovation is designed to be more easily trialed, then it will be adopted more quickly. Thus, an innovation can actually be changed during its trial process. In addition, trialability can reduce fears among potential users, making it an important feature in the emergence of new technologies. For MSMEs, trialability is important because resources for deploying new technologies may be quite limited and they need to know immediately whether the new technology will be beneficial or not [44]. The sooner the benefits are known and can be communicated to users, the sooner the new technology will be adopted [45]. It is good to conduct trials first because they reassure potential users and show that the technology is less complex than it may first appear [30]. Trialability can solve problems that make it difficult for MSMEs to adopt technologies and reduce MSMEs' resistance to adopting new technologies. In addition, trialability can improve the sustainability performance of firms by reducing the possibility of human error in the use of smart technologies [43].

Previous literature clearly shows that the ability to test a new technology can increase adoption. The use of m-commerce has been studied in Central Asia, and it was found that the opportunity to try a new technology is one of the characteristics of innovation that influences consumers' intention to use m-commerce in online shopping [46]. In a study by Jayashree et al. [43], a significant positive relationship was found between trialability and Industry 4.0 implementation. In contrast, a study on the adoption of Open Educational Resources (OER) in higher education in Saudi Arabia found that trialability did not have a positive impact on the adoption of OER among higher education teachers. This is probably due to the fact that users do not need a trial version due to the limited time for all types or formats of open source [31]. The results of Fahad's [30] study also show that trialability has no relationship with consumers' intention to use mobile based payment systems in India. This is also consistent with the study on the use of m-wallet by young adults aged 19 to 26. The results show that trialability has no significant relationship with users' intention to use m-wallet for payment matters [35].

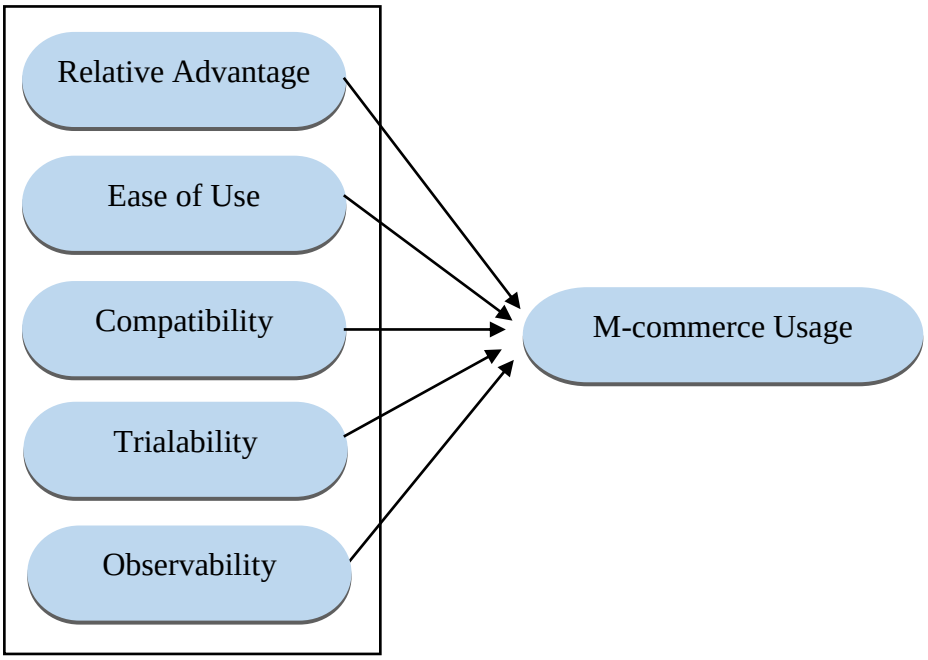
4.5 Observability

Rogers [16] defined that observability is the extent to which the results of innovation are visible to others. The easier it is for individuals to see the results of an innovation, the more likely they are to adopt it. Such urgency stimulates discussion in society about new ideas. Some ideas are easy to recognize and communicate to others, while innovations are difficult to recognize or explain to others. As with other DOI measures, few researchers have studied the relationship between observability and technology use. Jayashree et al.'s [43] study found that observability is one of the predictors of Industry 4.0 adoption. Chung [46] found a positive relationship between observability and consumer use of m-commerce in online shopping. If there are fewer m-commerce websites of local retailers in Central Asia, it indicates that the observability of mobile platforms as an alternative channel for shopping is weak. In addition, Menzli et al. [31] found that the adoption of Open Educational Resources in higher education in Saudi Arabia had a significant impact on observability.

The results of this study are also consistent with another study on the use of mobile based payment systems in India that included the observability factor [30].

4.6 Conceptual Framework

The study found that there are some factors that influence the use of m-commerce by microenterprises. These factors were identified as relative advantage, ease of use, compatibility, trialability, and observability. Figure 1.1 below shows the research framework based on the document analysis conducted in this study.



V. CONCLUSION

The conceptual framework proposed in this study enables the researchers to determine the key factors that influence the use of m-commerce by Malaysian microenterprises in their business activities. The document analysis conducted in this study covered many areas and is not limited to microenterprises. Through this study, we provide an understanding of the m-commerce literature in general, which is interesting and useful for academics, entrepreneurs, online business practitioners, and m-commerce businesses. In addition, this study also contributes to the improvement of knowledge about the m-commerce environment among microenterprises. In conclusion, Malaysian microenterprises should start using m-commerce platforms to be more competitive in global markets. By using m-commerce, Malaysian microenterprises can improve their business practices in line with current trends.

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