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DETERMINANTS OF CONSUMERS' INTENTION TO USE MOBILE COMMERCE: DELONE AND MCLEAN PERSPECTIVE

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ABSTRACT

In the last few decades, substantial progress was seen in mobile commerce development. Although the Internet and smartphones have become more widely used in Malaysia, mobile commerce acceptance is still low. The current study investigates the determinants of intention to use mobile commerce among consumers in Malaysia. Additionally, this study aims at proposing a conceptual framework that emphasizes the impact of information quality, system quality, and service quality on consumer intentions to use mobile commerce in Malaysia. The DeLone and McLean Updated Information System Success Model (ISSM) Theory is the theoretical background of this study's proposed model. Mobile commerce providers must create user-friendly websites, applications, and platforms; they must also provide valuable information regarding their offerings, and provide high service quality to mobile commerce users to build a favourable intention to use mobile commerce in Malaysia. The primary contribution of this research is the conception of a model to examine the determinants of consumer intention to use mobile commerce in Malaysia. This research provides practical insights for mobile commerce service providers, enhancing their understanding of the determinants affecting consumer intention to use mobile commerce. This study will benefit academicians, scholars, students, providers, mobile marketing practitioners, and all industry stakeholders. Since this paper is conceptual, it necessitates empirical investigation to validate the proposed model of this study; thus, additional research is recommended.

JEL Classifications: M1, M150, M3

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1. INTRODUCTION

Innovation has been dramatically accelerated in recent years by the growth of mobile technology (Ghazali et al., 2018). Mobile devices are used for many different types of services nowadays, including mobile payments, mobile commerce, and mobile social networking, through the flexibility of communication networks unrestricted by location and time (Barry et al., 2024a; O'Dea, 2020). Mobile devices are quickly overtaking other access points for communication. The mobile network is more affordable than a landline phone and offers customers more freedom and accessibility (Asampana et al., 2022; Jahansahi et al., 2011). As they revolutionize businesses across all industries, mobile devices are accepted as the principal method of performing commercial transactions in emerging and developed nations. The widespread use of mobile devices for commercial transactions has disrupted established corporate procedures and made wireless telecommunication the primary method for modernizing established infrastructure using accepted standards (Jain et al., 2021). Mobile commerce has become a brand-new business phenomenon because of the quick uptake and adoption of mobile devices and the ongoing development of mobile technology (Sarkar et al., 2020). Access to wireless technologies and mobile devices has changed business communication and made it simpler and faster to engage with potential customers.

In terms of expanding access to wireless communication, which has impacted billions of people worldwide, advancement in wireless communications is astounding. Access to technology has changed communication speed and allows marketers to reach out to potential customers whenever and wherever they choose. A robust telecommunications service network has been determined to have a considerable positive impact on a country's economic growth, according to Barry et al. (2024a). According to World Bank study in 120 countries, a 10% increase in mobile commerce subscriptions results in a 0.8% increase in GDP (Barry and Jan, 2018). Customers now utilize mobile cellular extensively, and this trend is only growing. Regarding subscriptions and popularity, the mobile cellular market has experienced the fastest growth in the telecommunications sector (Mohamad and Sabri, 2022). According to a World Bank report in 2022, more than 8.27 billion people use mobile phones, while more than 6.5 billion use smartphones, predicted to expand quickly in the coming years (Statista, 2022). According to the International Telecommunication Union (ITU), 4.9 billion people, or

63% of the world's population, used the Internet in 2021, up from only 16% in 2005. According to Statista (2022), 63% of the world's population, or 5 billion people, were internet users as of April 2022. Social media users comprise 4.65 billion of the global population, or more than 93% (Statista, 2022).

Mobile commerce, the expansion of electronic commerce utilizing a wireless mobile device, has also been made possible by developing this mobile technology (Chan et al., 2022). By facilitating many business owners to start and run their businesses, mobile commerce, also known as m-commerce, has considerably contributed to world economic growth (Thevaranjan and Samantha, 2022). The new potential that mobile commerce technology has provided for business owners, customers, and marketers is already being studied by researchers (Laudon and Laudon, 2016). Several different types of mobile commerce services, such as mobile tickets, mobile travel, mobile shopping, mobile health, mobile agriculture, mobile advertising, mobile education, mobile wallet, and mobile purchase of films, songs, or games, have all seen significant increases arising from mobile commerce (Barry et al., 2024c; Septiani et al., 2017).

Mobile commerce, however, is viewed as the next step in the evolution of electronic commerce (e-commerce), as it employs wireless technology to meet customer needs conveniently and makes all elements of conventional e-commerce accessible via smartphones or other portable devices. Given the massive appeal of mobile devices and the ongoing development of wireless networks, mobile commerce is quickly becoming increasingly popular. Since mobile devices are used to conduct online transactions in a wireless environment, mobile commerce is considered a potential expansion of e-commerce (Vinerean et al., 2022). By 2021, mobile commerce accounted for 54% of all e-commerce sales (Misra et al., 2022). Mobile devices proliferation has been the primary catalyst for the significant growth of e-commerce in Malaysia. In 2022, over 70% of all e-commerce transactions were done using smartphones. The upward trajectory of this trend underscores the need to implement mobile-friendly solutions for organizations (Kaur, 2022).

Malaysia’s total population is around 32.78 million, with approximately 89.53% (29.35 million) using mobile Internet (Statista, 2022). Nearly 20 million Malaysians shop through mobile devices, and 62% of the 16.53 million online shoppers in the country complete transactions on mobile platforms (Embassies, 2019). Morgan (2019) reports that 47% of all e-commerce transactions in

Malaysia occur via mobile phones, contributing to an estimated $5.6 billion (RM23.9 billion) in consumer sales by 2021, with a compound annual growth rate of 31.4%. Hence, 90% of Malaysian are expected to use mobile commerce by 2024 (Tran, 2024). Despite high smartphone penetration, the adoption of mobile commerce in Malaysia is relatively low (Barry et al., 2024c; Yahaya et al., 2022).

In 2021, Malaysia experienced significant e-commerce adoption, fueled by a large internet user population (27.4 billion, or 80%) and a high mobile phone penetration rate (84.2%), according to ITA. Mordor Intelligence (2022) reported that 83% of Malaysians participated in e-commerce, with 68.4% using mobile devices for purchases (Ganbold, 2021; Yandamuri et al., 2020). GSMA intelligence data indicates that mobile commerce constitutes 55.9% of all e-commerce transactions in Malaysia (Commission Factory, 2022), which is expected to reach 70% by 2024 (Tran, 2024). Despite this, the country still has fewer mobile commerce transactions than overall e-commerce activity (Barry, Haque, and Jan, 2024a; Ganbold, 2021; Yandamuri et al., 2020). This study examines the determinants of consumers' intentions to use mobile commerce in Malaysia, employing the updated information system success model. In addition, after a review of previous studies, a research model is proposed in this study to examine the determinants of consumers' intentions to use mobile commerce in Malaysia.

2. LITERATURE REVIEW

2.1 MOBILE COMMERCE

Mobile commerce, despite being in its infancy, has already achieved significant success and has the potential to revolutionize any industry, thereby influencing modern human existence (Jahanshahi et al., 2011). This potential has been recognized in earlier studies, where mobile commerce has been described in various ways. According to Sadi and Noordin (2011) and Wei et al. (2009), mobile commerce is the use of a wireless device, such as a smartphone, cellular phone, or personal digital assistant (PDA), and a network to access information and transact for goods, services, or information. Furthermore, Sadi and Noordin (2011) and Barry and Jan (2016) stressed that mobile commerce is a natural extension of electronic commerce (e-commerce), enabling customers to seamlessly collaborate with businesses or one another whenever and wherever they desire. Any verbal or written transaction of money for

goods, services, or information over a wireless network is called mobile commerce (Hung et al., 2004; Skiba et al., 2000).

Yang (2005) and Barry, Haque, and Jan (2024b) however, agree that every transaction directly or indirectly via a cellular telecommunications network is included in m-commerce. According to Khalifa and Shen (2008), mobile commerce has officially begun when consumers use their smartphone or any other device, such as an iPhone, iPad, or Android device. Additionally, they assert that a subset of electronic commerce is mobile commerce. Wong and Hiew (2005) contend that m-commerce is separate from electronic commerce due to mobile devices' unique characteristics, limitations, and features. Feng et al. (2006) claim that mobile commerce differs from electronic commerce in terms of its style, interactions, usage patterns, and value chain. According to Feng et al. (2006), mobile commerce offers a creative and innovative business opportunity because of its unique characteristics, such as mobility and internet connectivity. Any money exchange for goods, services, or information over a smartphone or wireless device is called "mobile commerce" (Barry and Jan 2018).

2.2 INTENTION TO USE MOBILE COMMERCE

In general, a person's capacity to exercise purpose and observation towards anything is impacted by various circumstances. The aim will only be evident to someone if something naturally influences their interest in something and causes it to develop into an objective goal. However, the purpose is likely linked to a person's dedication to a course of action or linked to a person's component belief in an object. Therefore, Davis (1989) defined intention to use as "an individual's subjective probability that he or she will perform a specified behaviour." According to Venkatesh et al. (2012), a person's behavioral intention influences their willingness to use and continue their technology, which also influences how they use it. LaMorte (2019) and Ahmed and Barry (2023) agreed that "behavioural intention refers to the motivational factors that influence a given behaviour where the stronger the intention to perform the behaviour, the more likely the behaviour will be performed."

In mobile commerce context, intention to use mobile commerce refers to consumers' perceived likelihood of using a certain innovation such as mobile commerce (Vinerean et al., 2022). Wu and Wang (2005) define intention to use mobile commerce as the potential for a user of mobile commerce to complete online

transactions using mobile commerce. As a result, the researcher's definition of intention to use mobile commerce in this study refers to the possibility that a user will use mobile commerce to make online transactions. Additionally, according to Kitjaroenchai and Chaipoopiratana (2022), the likelihood that a buyer will keep purchasing from the same online vendor is known as online purchase intention. They emphasized once more that "online purchase intention" refers to customer intentions to make future purchases from the same online vendors of goods and services. According to Ha et al. (2010), customer willingness to use the exact online purchasing service counts as an intention to make an online purchase.

Literature review shows that information quality, service quality, and system quality have a positive impact on the intention to use mobile commerce among consumers (Walker et al., 2023; Vinerean et al., 2022; Kitjaroenchai and Chaipoopiratana, 2022; Mehedintu and Soava, 2022; Wang and Choi, 2022; Li et al., 2022). Furthermore, previous literature also revealed that information quality, service quality, and system quality were strong predictors of the consumer intention to use mobile commerce (Walker et al., 2023; Wang and Choi, 2022). The researchers carefully considered these elements as they emerged from the literature while compiling the proposed model for the intention to use mobile commerce. Information, service, and system quality are represented as exogenous variables in the model (see Figure 1), and intention is the endogenous variable in the study. According to the literature, all these exogenous factors significantly positively impact the intention to use mobile commerce.

2.3 INFORMATION QUALITY

DeLone and McLean (2003) concurred that, "Information quality is related to the semantic level and the information product characteristics such as accuracy, meaningfulness, and timeliness." The features and output characteristics of an IT application are referred to as the "information quality" of that application (Petter and McLean, 2009). Reicks (2001) asserts that the timeliness, consistency, relevance, appropriateness, format, and correctness of the information provided to end users by an IT application are also factors in information quality. Information should be accurate, timely, complete, and current in mobile commerce. Thus, the information offered to customers is impacted in several different

ways by information quality. Information quality refers to information that the users value (Gani et al., 2023).

According to Walker et al. (2023), the impact of low-quality information on user behavior cannot be overstated. They describe information quality as current, reasonable, valuable, and accurate information. Zheng et al. (2013) further highlight that consumers become more distracted and must work more to digest low-quality information. If the app's designer fails to deliver correct and up-to-date information, the end user will lose faith in it and stop using it. It is believed that the websites or apps for mobile commerce would be of high quality and provide users with accurate, up-to-date information. Users lose motivation when they must put in a lot of time and effort to find information, which reduces their propensity to use mobile commerce apps or websites (Zheng et al., 2013). This underscores the urgency of providing high-quality information in mobile commerce.

Barry et al. (2024a) discovered that system quality significantly impacts the intention to use mobile commerce, underscoring its influence. Liu and Forsythe (2011) opine that a successful system that provides clear information immediately attracts customers since it seems dependable and trustworthy. It is essential to comprehend what makes m-commerce information quality appealing to clients, just as m-commerce information affects customer ability to buy and sell things. As a result, consumer information may include things such as user-specific data, product data, supplier data, and more. Even when individuals can access sufficient information, reviewing and evaluating each product to make the best choice can be difficult and time-consuming. This highlights the significant role of system quality in mobile commerce adoption.

Information quality and the intention to utilize technology are significantly correlated, according to earlier studies (Zheng et al., 2013; Petter et al., 2008; Lin, 2007). For instance, Tarhini, Alalwan, Shammout, and Al-Badi (2019) researched the factors influencing mobile commerce adoption in developing nations. They discovered that, in developing nations, the quality of information influences consumer behavioral intention to adopt mobile commerce positively. They discovered that the most significant determinant of customer behavioral intention to adopt mobile commerce in developing nations is information quality combined with habit. Huwaida et al. (2024) found intention to be strongly predicted by information quality. Their findings support those of Saibaba (2024) and Liu (2024).

2.4 SYSTEM QUALITY

System quality evaluates the information processing system (Gai et al., 2024). Since the COVID-19 issue started, consumers' purchasing patterns have changed, and they now rely more frequently on mobile applications (Eger et al., 2021; Gao et al., 2020). As a result, companies now prioritise shifting to e-commerce mobile platforms and changing their websites accordingly (Sarkar et al., 2020). In addition to streamlining the shopping process, the emergence of mobile commerce websites has improved it by allowing customers to browse numerous stores, learn more about products, and make purchases whenever and wherever they like (Mehedintu and Soava, 2022). Commercial websites' and applications' quality needs to be guaranteed from the user's point of view, including the content, search, and navigation, to increase their credibility (Brush and Rappel, 2020). These websites and applications benefit users while also considering their ongoing improvement by increasing internet speed, expanding 5G and Wi-Fi networks, and increasing accessibility and trust in mobile devices and applications (Varzaru and Bocean, 2021). The foundational requirement for commercial applications must also be the starting point for developing successful mobile commerce websites (Varzaru and Bocean, 2021).

According to several researchers, system quality significantly affects consumers' intentions to use mobile commerce (Wang and Choi, 2022;; Kang et al., 2021; Tseng et al., 2021; Ghazali et al., 2018). Additionally, studies (Ivanova and Noh, 2022; Al-Naimat et al., 2020; Hossain et al., 2020; Dongmo et al., 2020; Ali andd Ju 2019; Alqatan and Alshirah, 2019;) showed that system quality strongly affects the intention to use of mobile commerce. For instance, Ali and Ju (2019) found that system quality is one of the primary factors influencing system use. They also found that service quality has a substantial impact on system use. Similarly, Al-Naimat et al. (2020) investigated the factors influencing the use of mobile commerce among Jordanian customers, and their findings suggested that system quality has a substantial impact on mobile commerce intention. They also discovered that system quality among Jordanian tourists is one of the most crucial factors influencing whether they use mobile commerce. Barry et al. (2024a) found that system quality significantly impacts the intention to use mobile commerce. Likewise, Gai et al. (2024) found that system quality significantly impacts repurchase intention of online shopping platforms through customers satisfaction. Additionally, Ng et al. (2024) found that

system quality, directly and indirectly, impacts continuance of intention to use mobile shopping apps through satisfaction. These findings support that of Barry et al. (2024b).

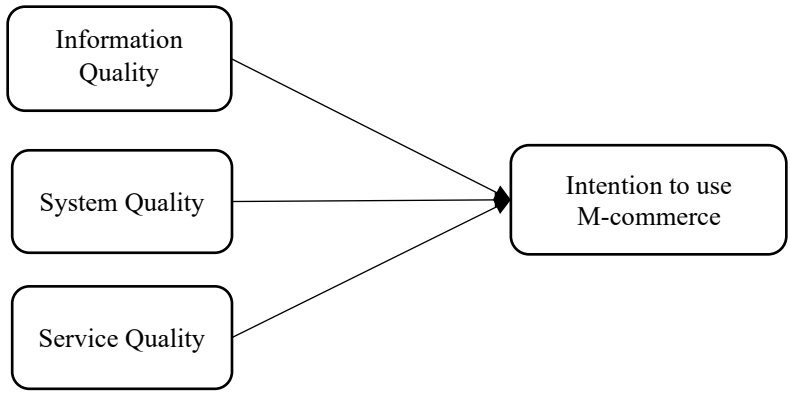
2.5 SERVICE QUALITY

Service quality refers to the extent to which a service meets the customer requirements or anticipations. It refers to the disparity between the level of service the client anticipates and the customer experience (Gai et al., 2024). Organizations have begun to prioritise service quality more heavily in today's customer-focused business environments (Blut, 2016). Zhao et al. (2012) assert that the quality of service customers receive influences their perception of a company. Their decision to make purchases will continue to be influenced by this in terms of frequency. However, to understand and enhance service quality, its components must be measured and identified (Blut, 2016). Customers frequently check the quality of a product before buying it. On occasion, consumers examine both price and quality before making a purchase. Customers look for quality to improve the products' longevity and safety (Abdullah, Prabhu, and Othman, 2022). According to Abdullah et al. (2022), managers must find ways to modernize or improve their service facilities and offer excellent or high-quality customer services if they want to maintain their competitive advantage in the highly competitive market economy. This is because the quality of the products and services customers receive determines whether they will make additional purchases.

Therefore, in this study, the researcher concurs that service quality in mobile commerce refers to the quality of the support provided to mobile commerce users by the technical staff of the mobile commerce provider, which will positively affect user satisfaction and use of mobile commerce. Ivanova and Noh (2022); Li et al. (2022); Al-Naimat et al. (2020); Wang and Teo (2020); Dongmo et al. (2020); Hossain et al. (2020), among others, found that service quality strongly affects actual use of m-commerce. According to researchers, service quality significantly affects consumers' intentions to use mobile commerce (Tseng et al. in 2021; Tseng et al. in 2021; Jain et al. in 2021; Wang et al. in 2019). For instance, a study conducted by Al-Naimat et al. (2020) revealed that service quality influences the intention of mobile commerce users in a positive way. Similarly, Barry et al. (2024a) found that system quality significantly impacts the intention to use mobile commerce.

Wang and Teo (2020) showed that service quality significantly impacts mobile commerce adoption among Chinese internet shoppers. According to Dongmo et al. (2020), service quality significantly impacts how well-liked mobile commerce is. According to Hossain et al. (2020), service excellence influences the adoption of mobile commerce in a favorable way. Lin et al. (2024) found that service quality significantly influences purchase intention. This finding supports that of Barry et al. (2024b). Similarly, Al-Naimi and Abu-Shanab (2024) found that service quality predicts the intention to use mobile banking apps firmly. Siyal et al. (2024) significantly found service quality to predict intention through customisation.

FIGURE 1
Conceptual Framework



3. THEORETICAL UNDERPINNINGS

3.1 INFORMATION SYSTEM SUCCESS MODEL

Several theories have been proposed to comprehend consumers' intention to use information system technology. However, DeLone and McLean (1992) proposed the information system success model, commonly known as the IS success model. This model was developed to assess the effectiveness of information systems (IS). The paradigm introduces six key constructs: individual impact, organizational impact, system quality, information quality, use, and user satisfaction. The model has received widespread acceptance and has been chosen as an adequate foundation for additional theoretical and empirical studies (DeLone and McLean, 1992). The concept,

however, is widely acknowledged and utilised in IS studies (Cho et al., 2011). Numerous research studies on mobile commerce employed the IS success model (Ivanova and Noh, 2022; Nani and Lina, 2022; Yoo, 2020; Al-Naimat et al., 2020; Ali and Ju, 2019; Njanga et al., 2016).

Therefore, this study attempts to study the relationships among factors such as service quality, system quality, and intention to use mobile commerce. However, this study proposed a research framework based on the updated information system success model (ISSM) theory to achieve this objective. Hence, the theoretical background of this study is the up dated information system success model theory (ISSM). The variables of this study were chosen after reviewing previous studies on the updated information system success model theory.

4. RESEARCH METHODOLOGY

Since this study is qualitative, it is advised that researchers should conduct an empirical study to examine the determinants of consumers' intention to use mobile commerce in Malaysia. The target population should be smartphone owners who engage in mobile commerce activities in Malaysia (Barry et al., 2024c). Non-probability convenience sampling technique should be used to collect data from the target respondents (Di Franco, 2024; Naseri et al., 2024; Akkaş and Meydan, 2024), as it is the best sampling technique and most widely used to collect data from the target respondents (Nyimbili and Nyimbili, 2024; Nasir et al., 2024; Michelucci, 2024). As a non-probability sampling technique, convenience sampling refers to choosing units for the sample based on the most convenient for the researcher to reach (Akkaş and Meydan, 2024). The researcher should administer Online survey questionnaires as it will be easier for the target respondents to open the link provided and answer the questions at their convenience (Khan, 2024; Ceccato et al., 2024; Barry, Barrie, and Kuyateh, 2024). The researcher should evaluate the instrument's validity to perform data analysis techniques such as regression, factor analysis, or other data analysis techniques. Finally, the causal relationships should be examined to see how the suggested variables affect mobile commerce users' intention to use mobile commerce activities in Malaysia.

5. PRACTICAL IMPLICATIONS

The present study is carried out to advance knowledge for scholars and professionals interested in mobile commerce, particularly in Malaysia. This study may be the first to address the relevant challenges of mobile commerce in Malaysia. This attempt may significantly advance our knowledge of how information, service, and system quality impact on Malaysian consumers' intention to use mobile commerce. The primary gap in the literature in the relevant field that this study was first able to identify was the impact of information quality, service quality, and system quality on the intention to use mobile commerce can be summed up by proposing a conceptual model based on a solid theoretical underpinning. The researcher achieves this by employing the information system success model (ISSM).

Businesses should build user-friendly applications or websites that regularly update information about their goods and services. Designers must also ensure that mobile commerce applications can assist and serve clients effectively and efficiently without flaws or faults. By putting forth a conceptual model built on a solid theoretical foundation, this may be summed up as increasing the level of adoption of mobile commerce among potential customers (Yoo, 2023; Lucas et al., 2023; Tarhini et al., 2019; Lai and Lai, 2014). Designers should focus more on maintaining mobile commerce services and growing the commercial activities established by using these applications or websites (Lucas et al., 2023; Yadav et al., 2016; Zhou et al., 2010).

Hence, marketers need to spread the notion that using mobile commerce is a natural extension of using other mobile applications such as social media or phone calls on smartphones. Regarding information quality, system quality, and service quality, a cutting-edge, high-quality interface created to meet users' preferences will enhance all areas of information quality, system quality, and service quality to increase mobile commerce uptake in Malaysia. Additionally, the data accessible through mobile commerce needs to be complete, accurate, and often updated. Initially, banks must focus on offering self-service technology channels compatible with other widely used technologies by customers while persuading them that using these channels is not significantly different from using other technologies (Mansour et al., 2016; Kuriakose and Paul, 2016; Koenig-Lewis et al., 2010).

6. CONCLUSIONS

Concerning how mobile commerce users perceive mobile commerce, it is clear from the thorough analysis of the literature that elements to consider consist of information quality, service quality, and system quality. As a significant contribution to the field, the current work conceptualized several crucial aspects and suggested a model for additional research and empirical testing. This paper emphasizes explicitly the determinants of intention to use mobile commerce to help mobile commerce providers address or ensure the quality of their information, systems, and services that will further increase mobile commerce usage. Customer intention to use mobile commerce, however, should be adequately scrutinized, considering information quality, system quality, and service quality concerns, as this may have a significant impact on their acceptance of mobile commerce.

It is crucial to note that this study has several limitations, mainly the methodology employed to develop it because it is conceptual and might not offer an empirical justification for its assertions. This paper does not cover other variables such as usefulness, ease of use, privacy, security, cost, or perceived trust that could also impact consumer intention to use mobile commerce. Other elements may also impact consumers' intention to use mobile commerce, such as religious or cultural issues. To improve mobile commerce, providers should promote and expand a positive intention among consumers to use mobile commerce in Malaysia. This paper calls for a more quantitative and empirical approach that can incorporate other constructs such as consumers' attitudes, their actual use of mobile commerce, and, more critically, the trust, privacy, and security issues that might be included in future studies to determine whether this might improve consumers intention to use mobile commerce in Malaysia. Future studies may also consider the proposed model of the present study for a different context or conduct a comparative study to determine the impact of information quality, system quality, and service quality on the intention to use mobile commerce among consumers. Since this paper is conceptual and necessitates empirical investigation to validate the proposed model of this study, additional research is advised.

Future researchers who intend to use the model described in this paper and start empirical testing should adhere to a few key steps. First, data from smartphone users who perform mobile commerce transactions of all ages should be collected online or

offline. Second, additional caution should be taken since the study primarily focuses on mobile commerce users. The researcher should also review the data for missing data, outliers, and normalcy to prepare it for further study. Reliability analysis should be carried out to examine the scale's consistency, and then exploratory factor analysis (EFA) should be employed to determine how many dimensions underlie the data. The researcher might compare the proposed and investigated dimensions at this step. Third, confirmatory factor analysis (CFA) should be used to verify the studied dimensions. The researcher can evaluate the instrument's validity at this point. Finally, the causal relationships may be examined to see how the suggested variables affect mobile commerce users' intention to use mobile commerce in Malaysia.

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