SRYAHWA PUBLICATIONS

Open Journal of Economics and Commerce
ISSN: 2638-549X | Volume 5, Issue 1, 2024
https://doi.org/10.22259/2638-549X.0501002

RESEARCH ARTICLE

# Mobile Commerce Adoption in Malaysia: A Conceptual Framework

**Moussa Barry*[1], AKM Ahasanul Haque[1], Muhammad Tahir Jan[1]**

[1]Department of Business Administration, International Islamic University Malaysia, 53100 Kuala Lumpur, Malaysia.

Received: 12 February 2024 Accepted: 23 February 2024 Published: 27 February 2024.

Corresponding Author: Moussa Barry, Department of Business Administration, International Islamic University Malaysia, 53100 Kuala Lumpur, Malaysia.

## Abstract

The high acceptance of mobile commerce transactions among Malaysian consumers has become a major obstacle for mobile commerce providers. This study examines the adoption of mobile commerce in Malaysia, focusing on the influence of information quality, system quality, and service quality on customers' intention to use it. It highlights literature on the relationship between intention and mobile commerce acceptance and the moderating effect of perceived cost. The DeLone and McLean updated IS Success Model is the basis of the proposed research model. The study suggests that mobile commerce providers should create user-friendly websites, provide comprehensive information, and deliver high-quality services to boost consumer acceptance. It is also proposed that perceived cost is moderating the acceptance of mobile commerce. This research contributes to the understanding of mobile commerce adoption and provides insights for mobile commerce providers. Further research is recommended due to its conceptual nature and the need for empirical investigation.

**Keywords:** Mobile Commerce, Acceptance, Intention, Cost, Malaysia.

## 1. Introduction

The rapid growth of mobile technology has led to widespread usage in various domains, such as mobile payments, commerce, and social networking (Ghazali et al., 2018). This is due to the advantages of communication networks, which offer unrestricted connectivity regardless of location or time(O'Dea, 2020). Mobile devices are becoming the primary means of conducting economic transactions in both emerging and developed nations, disrupting established corporate practices, and modernizing infrastructure (Asampana et al., 2022). The widespread use of mobile devices has also emergence of mobile commerce as a significant business trend, making communication more convenient and efficient for businesses (Jain et al., 2021), it has also transformed communication for businesses, making it more efficient to interact with potential clients (Sarkar et al., 2020).

Wireless communications have significantly impacted global communication and economic growth, with a strong telecommunications service network leading to a 0.8% GDP boost(Barry &Jan, 2018). The mobile cellular market has experienced rapid expansion, with the global mobile phone user count exceeding 8.27 billion, with over 6.5 billion people using smartphones(Statista, 2022). The ITU reported that in 2021, 63% of the global population used the Internet, a significant increase from 16% in 2005. As of April 2022, over 63% of the global population, or almost 5 billion people, were using the internet. Social media usage is also increasing, with 4.65 billion individuals actively using it, accounting for 93% of the total population(Statista, 2022).

Mobile technology has significantly boosted the growth of mobile commerce, enabling electronic transactions via wireless devices (Chan et al., 2022). Malaysia's population is 32.78 million, with an 89.53% mobile internet penetration rate (Satista, 2022). Around 20 million Malaysians engage in mobile commerce, with

**Citation:** Moussa Barry, AKM Ahasanul Haque, Muhammad Tahir Jan. Mobile Commerce Adoption in Malaysia: A Conceptual Framework. Open Journal of Economics and Commerce. 2024;5(1): 4-12.

62% of online buyers using mobile platforms (Satista, 2022). Nearly half of e-commerce transactions use mobile phones, generating $5.6 billion in consumer sales by 2021. Smartphone subscriptions remain low, with a compound annual growth rate of 31.4% (Yahaya et al., 2022).Malaysia has a significant e-commerce adoption, with a large internet user base and high mobile phone usage. In 2022, 83% of Malaysians engaged in e-commerce, with 68.4% using mobile devices (Yandamuri et al., 2020). The volume of mobile commerce transactions is lower than overall e-commerce activity (Ganbold, 2021). This study aims to investigate the factors affecting the adoption of mobile commerce in Malaysia by proposing a research framework based on prior studies.

## 2. Synthesis Literature Review

### 2.1. Mobile Commerce

Mobile commerce, a relatively recent concept, involves using wireless devices like smartphones or personal digital assistants (PDAs) and a network to exchange money for goods, services, or information (Mwilongo, 2024). Despite its success, mobile commerce is still in its early stages and can potentially impact various industries (Silitonga et al., 2024). It is a seamless expansion of electronic commerce, allowing customers to engage with businesses or each other wirelessly at their convenience and location (Pagano et al., 2024). Mobile commerce refers to transactions conducted using cellular telecommunications networks, including those conducted using smartphones or similar devices (Nguyen, 2024). It differs from electronic commerce due to its unique attributes, constraints, and functionalities (Lin et al., 2024). Mobile commerce differs from internet commerce in terms of aesthetics, interactions, usage patterns, and value chain (Alfansi, 2024). It presents unique economic prospects due to its unique features, including mobility and internet connectivity. Mobile commerce involves exchanging money for products, services, or information using a smartphone or other wireless device (Yapraklı, 2024).

### 2.2. Adoption of Mobile Commerce

Mobile commerce adoption has been studied by various researchers, focusing on various demographic segments. Puiu (2022) found a preference for m-commerce among Generation Z in Romania, while Sari (2022) analyzed existing literature. Kumari (2020) found elements influencing m-commerce adoption in India. Gharaibeh (2020) combined the UTAUT2 model with social media to forecast consumer intention. Asampana (2022) and Chau (2020) highlighted perceived utility, ease of use, and organizational readiness in m-commerce adoption. Internet reviews also boost perceived usefulness among street merchants (Pipitwanichakarn, 2020). Andronie (2021) examined the significance of neuro-management decision-making and cognitive algorithmic processes in adopting mobile commerce apps.

### 2.3 Intention to Use Mobile Commerce

An individual's intention and attentiveness to a matter are influenced by various conditions, with the desired goal often not apparent until interest is naturally sparked. The purpose is likely linked to an individual's commitment to a specific action based on their belief in an object. Davis (1989) defines intention to use as an individual's personal belief in the likelihood of performing a specific activity. Venkatesh et al. (2012) found that behavioral intention significantly impacts a person's actual use of technology.LaMorte (2019) concurred that "behavioural intention pertains to the motivational factors that impact a specific behaviour, with the strength of the intention directly influencing the likelihood of performing the behaviour."This study defines intention to use mobile commerce as the likelihood of a user conducting online transactions. Schiessl (2023) found that customers' intention to use the same online purchasing service indicates their intention to make an online purchase.Based on these findings, wepropose that:

P1: Intention will have a positive relationship with the acceptance of mobile commerce.

### 2.4. Information Quality

Information quality refers to the semantic level and characteristics of an information product, such as accuracy, meaningfulness, and timeliness. Criteria like timeliness, consistency, relevance, appropriateness, format, and correctness influence it. In mobile commerce, information must possess accuracy, timeliness, comprehensiveness, and currency(DeLone & McLean, 2003). The quality of information has various effects on the information provided to customers (Xu et al., 2024). The user also values it (Farooq et al., 2023).Information quality refers to the availability of current, accurate, and valuable information (Walker et al., 2023). Consumers may experience increased distraction and effort to process poor information, leading to loss of trust and discontinuation of mobile commerce apps

(Singh et al., 2024). Websites and applications should provide accurate and current information, as users' motivation decreases when they must invest time and effort in searching for information, reducing their intention to use these apps (Abbas et al., 2023).Prior research (Ghandvar et al., 2024; Xin et al., 2022) found information quality to be a strong predictor of intention. Based on these findings, we propose that:

P2: Information quality will have a positive relationship with the intention to use mobile commerce.

### 2.5 System Quality

The COVID-19 pandemic has led to a shift in customer buying behavior, with a greater reliance on mobile applications (Eger et al., 2021). Organizations are now prioritizing e-commerce mobile platforms and making necessary adjustments to their websites (Sarkar et al., 2020). Mobile commerce websites have made the shopping process more efficient and enhanced by allowing customers to explore multiple businesses, gather product information, and make purchases at their convenience (Mehedintu&Soava, 2022). Ensuring the quality of commercial websites and applications is crucial for consumers, including content credibility, search functionality, and navigation(Brush & Rappel, 2020). Continuous enhancements, such as internet speed and 5G networks, are essential for creating prosperous mobile commerce websites(Varzaru&Bocean, 2021). Previous studies found that system quality has a significant impact on customers' intention to utilise mobile commerce (Wang & Choi, 2022; Wang & Choi, 2022; Kang et al., 2021). For instance, Ivanova & Noh (2022) and Al-Naimat et al. (2020)demonstrate a significant correlation between system quality and the intention to utilise mobile commerce. They discovered that the quality of service significantly influences the intention to usea system. Based on these findings, we propose that:

P3: System quality will have a positive relationship with the intention to use mobile commerce.

### 2.6 Service Quality

Organizations are prioritizing service quality to enhance customer satisfaction and improve their perception of a company (Ebrahimi et al., 2024). This affects their purchasing decisions, both frequency and regularity. To improve service quality, it is essential to assess and identify its components. Prospective customers often evaluate product quality before making a purchase, and sometimes both price and quality are considered; this is because quality is sought to enhance item durability and ensure safety (Abdullah et al., 2022). This study argues that service quality in mobile commerce refers to the quality of assistance provided by the technical personnel of the mobile commerce provider. This quality significantly impacts users' contentment and usage of mobile commerce. Studies by various researchers have shown that service quality significantly influences consumers' intention to use mobile commerce (Ivanova & Noh, 2022); Li et al., 2022;and Al-Naimat et al., 2020). Based on these findings, we propose that:

P4: Service quality will have a positive relationship with the intention to use mobile commerce.

### 2.7 Perceived Cost

Studies have explored the factors influencing mobile commerce intention and acceptance, with a focus on cost. For instance, Kao (2022) and Bui (2020) found that cost doesn't significantly impact usage intentions. Both Anwar (2020) and Alrawi (2020) identified cost as a significant obstacle to implementation, especially in developing nations. Molina-Castillo (2020) and Dakduk (2020) found that learning costs are influenced by perceived functional value and facilitating conditions.Chopdar (2020) and Liu (2019) found that perceived value and incentives influence repurchase intention, while Khalifa (2012) highlighted the role of cost in moderating attitude and intention. Cost is not the only factor influencing the decision to adopt mobile commerce. Based on these findings, we propose that:

P5: Perceived cost will moderate the relationship between intention and the acceptance mobile commerce.

## 3. Proposed Research Model

Previous research has shown that the quality of information, service, and system significantly influences consumers' willingness to use mobile commerce. Various studies support this finding (Walker et al., 2023; Mehedintu&Soava, 2022; Wang & Choi, 2022; and Li et al., 2022). Therefore, the researchers proposed a model for mobile commerce adoption in Malaysia. The proposed model considers information quality, service quality, system quality, and intention as exogenous factors, perceived cost as a moderating variable, andadoption of mobile commerceas an endogenous variable. These external elements have a significant and favorable effect on the adoption of mobile commerce.

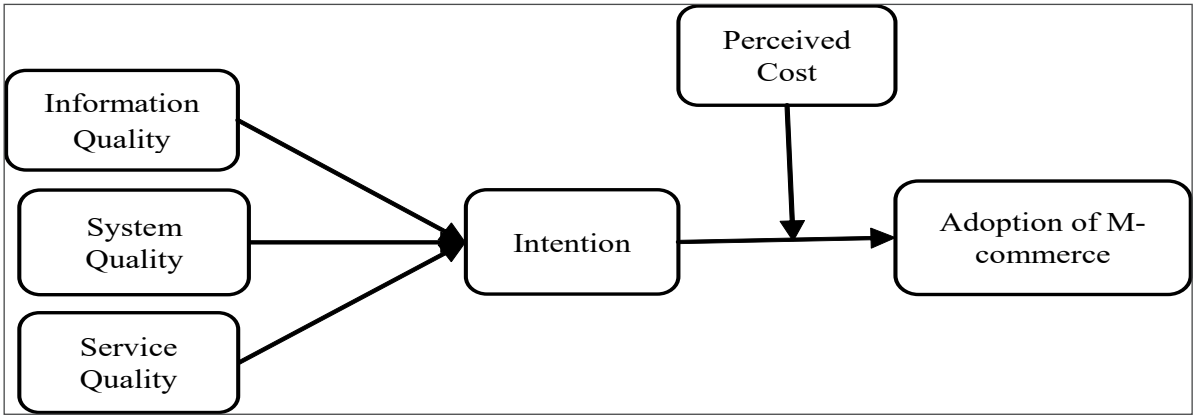


**Figure1.** Proposed Research Model

## 4. Theoretical Underpinning

### 4.1 Information System Success Model

The information system success model, introduced by DeLone and McLean (1992), evaluates the efficacy of information systems (IS) in mobile commerce. It consists of six constructs: individual impact, organizational impact, system quality, information quality, use, and user satisfaction. The model has been widely recognized and used in IS research, with studies in mobile commerce utilizing it, including those by Ivanova & Noh (2022), Nani & Lina (2022), Yoo (2020), Al-Naimat et al. (2020).The information system success model, introduced by DeLone and McLean (1992), evaluates the efficacy of information systems (IS) in mobile commerce. It consists of six constructs: individual impact, organizational impact, system quality, information quality, use, and user satisfaction. The model has been widely recognized and used in IS research, with studies in mobile commerce utilizing it, including those by Ivanova & Noh (2022), Nani & Lina (2022), Yoo (2020), Al-Naimat et al. (2020), Ali & Ju (2019), and Njanga, Litondo&Omwansa (2016).This study aims to propose a research framework to explore the factors affectingthe adoption of m-commerce based on the DeLone and McLean updated IS success model, and selecting variables based on existing research on the model.

## 5. Proposed Research Methodology

This study recommends that future researchers collect data from all age groups engaging in mobile commerce transactions using smartphones, both online and offline. Due to its focus on mobile commerce users, caution is advised. The data should be thoroughly examined for missing data, outliers, and deviations from normalcy to prepare it for further analysis. Given that the study primarily centers around mobile commerce users, it is advisable to use extra caution. In addition, the researcher should thoroughly examine the data for any instances of missing data, outliers, and deviations from normalcy to adequately prepare it for subsequent analysis.

Reliability analysis is crucial for assessing scale consistency. Evaluating the data using exploratory factor analysis (EFA) helps identify underlying dimensions. Confirmatory factor analysis (CFA) validates the dimensions, ensuring instrument validity. The studies then analyze the causal relationship among the variables to determine their effect on the adoption of mobile commerce in Malaysia and determine the moderating effect of perceived cost between intention and adoption of mobile commerce.

## 6. Practical Implications

This study aims to improve our understanding of mobile commerce in Malaysia by addressing the obstacles and enhancing our understanding of how information, service, and system quality affect consumers' intentions to engage. The main deficiency in existing literature is the lack of understanding about the influence of information, service, and system quality on mobile commerce intention. A conceptual model using the information system success model (ISSM) is proposed to bridge this gap.To boost mobile commerce adoption, companies should create user-friendly, consistently updated applications or websites. Designers should ensure these applications efficiently advise and serve clients without issues. The proposed paradigm aims to increase the adoption of mobile commerce among potential customers (Yoo, 2023; Lucas et al., 2023). They should also focus on maintaining services and expanding commercial activities usingapplications or websites. To maintain a competitive edge, managers must enhance service

facilities and provide exceptional services to clients, as the quality of items and services significantly influences their decision to make additional purchases (Abdullah et al., 2022).

Managers should maintain the privacy of users' financial information; this will help customers trust mobile commerce.Prioritizing the maintenance and growth of mobile commerce services, including enhancing user experience, and increasing commercial transactions, is crucial for businesses (Lucas et al., 2023).Marketers should promote mobile commerce as a seamless continuation of other mobile applications like social media and phone calls. A state-of-the-art interface tailored to user preferences can improve information, system, and service quality. Mobile commerce data should be comprehensive, precise, and frequent.

## 7. Conclusion

This paper explores the perception of mobile commerce by users, focusing on factors such as information quality, service quality, and system quality. It proposes a model for further research and empirical testing, aiming to help mobile commerce providers enhance their information, systems, services, and perceived cost to promote adoption. The paper emphasizes the importance of examining customers' adoption of mobile commerce, considering factors such as information quality, system quality, service quality, perceived cost, and intention.

This study has limitations, including a lack of empirical evidence and not considering factors like usefulness, ease of use, privacy, security,or perceived trust. It also overlooks religious or cultural considerations. The paper advocates for a quantitative and empirical approach to improve mobile commerce providers and encourage positive consumer behavior in Malaysia. Future studies should investigate trust, privacy, and security concerns, as well as consumer attitudes toward mobile commerce. This study investigates whether addressing issues could improve Malaysian consumers' acceptance of mobile commerce. Future research could explore the model's applicability in new settings or compare information, system, and service quality, perceived cost, and intention impact on consumers' adoptionof mobile commerce. Further empirical investigation is recommended due to its conceptual nature.

## 8. References


1. Abbas, S., Alnoor, A., Yin, T. S., Sadaa, A. M., Muhsen, Y. R., Khaw, K. W., & Ganesan, Y. (2023). Antecedents of trustworthiness of social commerce platforms: a case of rural communities using multi group SEM & MCDM methods. *Electronic commerce research and applications*, *62*. https://doi.org/10.1016/j.elerap.2023.101322
2. Abdullah, N. N., Prabhu, M., & Othman, M. B. "Analysing Driving Factors of Customer Satisfaction among Telecommunication Service Providers in Kurdistan Region". *International Journal of Engineering Business Management*, *14*, (2022), DOI:10.1177/18479790221111436
3. Abu-Taieh, E. M., AlHadid, I., Abu-Tayeh, S., Masa'deh, R. E., Alkhawaldeh, R. S., Khwaldeh, S., &Alrowwad, A. A. "Continued Intention to Use of M-Banking in Jordan by Integrating UTAUT, TPB, TAM and Service Quality with ML". *Journal of Open Innovation: Technology, Market, and Complexity*, *8,* no.3 (2022), 120.https://doi.org/10.3390/joitmc8030120
4. Akanferi, A. A., Asampana, I., Matey, A. H., & Tanye, H. A. "Adoption of Mobile Commerce and Mobile Payments in Ghana: An Examination of Factors Influencing Public Servants". *Interdisciplinary Journal of Information, Knowledge, and Management*, *17*, (2022), 287-313.https://doi.org/10.28945/4981
5. Alfansi, L. (2024). Play to Purchase: Exploring Gamification and Visual Design Impact on Impulse Buying in M-Commerce. *Formosa Journal of Multidisciplinary Research*, *3*(1). https://doi.org/10.55927/fjmr.v3i1.7925
6. Al-Naimat, A., Alnuaimi, M. A., Abdulaal, A. M., &Almuiet, M. Z. "Determinants of M-Commerce Usage in the Jordanian Hospitality Industry". *Journal of Theoretical and Applied Information Technology 98*, no. 23 (2020), 3834-3842.
7. Alrawi, M. A. S., Samy, G. N., Yusoff, R. C. M., Shanmugam, B., Lakshmiganthan, R., Maarop, N., & Kamaruddin, N. (2020). Examining factors that effect on the acceptance of mobile commerce in malaysia based on revised UTAUT. *Indonesian Journal of Electrical Engineering and Computer Science*, *20*(3), 1173-1184. DOI:10.11591/ijeecs.v20.i3.pp1173-1184
8. Andronie, M., Lăzăroiu, G., Ștefănescu, R., Ionescu, L., &Cocoșatu, M. (2021). Neuro-management decision-making and cognitive algorithmic processes in the technological adoption of mobile commerce apps. *OeconomiaCopernicana*, *12*(4), 1033-1062. DOI:10.24136/oc.2021.034
9. Anwar, A., Thongpapanl, N., & Ashraf, A. R. (2021). Strategic imperatives of mobile commerce in developing countries: the influence of consumer innovativeness, ubiquity, perceived value, risk, and cost on usage. *Journal of Strategic Marketing*, *29*(8),

722-742. DOI:10.1080/0965254X.2020.1786847

10. Asampana, I., Akanferi, A. A., Matey, A. H., & Tanye, H. A. (2022). Adoption of mobile commerce services among artisans in developing countries. *Interdisciplinary Journal of Information, Knowledge & Management*, *17*. DOI:10.28945/4921
11. Asampana, I., Akanferi, A. A., Matey, A. H., & Tanye, H. A. "Adoption of Mobile Commerce Services Among Artisans in Developing Countries". *Interdisciplinary Journal of Information, Knowledge, and Management*, *17*, (2022), 101-123. https://doi.org/10.28945/4921
12. Barry, M., & Jan, M. T. "Factors Influencing the Use of M-Commerce: An Extended Technology Acceptance Model Perspective". *International Journal of Economics, Management and Accounting*, *26* no.1 (2018), 157-183.https://journals.iium.edu.my/enmjournal/index.php/enmj/article/view/502
13. Bui, N., Pham, L., Williamson, S., Mohebbi, C., & Le, H. (2020). Intention to use mobile commerce: Evidence from emerging economies. *International Journal of Enterprise Information Systems (IJEIS)*, *16*(1), 1-30. DOI:10.4018/ijeis.2020010101
14. Chan, X. Y., Rahman, M. K., Mamun, A. A., A. Salameh, A., Wan Hussain, W. M. H., & Alam, S. S. "Predicting the Intention and Adoption of Mobile Shopping During the COVID-19 Lockdown in Malaysia". *SAGE Open*, *12* no.2 (2022), 1 – 17, DOI: 10.1177/21582440221095012.
15. Chau, N. T., Deng, H., & Tay, R. (2020). Critical determinants for mobile commerce adoption in Vietnamese small and medium-sized enterprises. *Journal of Marketing Management*, *36*(5-6), 456-487. DOI:10.1080/0267257X.2020.1719187
16. Cho, J., Park, I., & Michel, J. W. "How Does Leadership Affect Information Systems Success? The Role of Transformational Leadership". *Information & Management*, *48* no.7 (2011), 270-277.https://doi.org/10.1016/j.im.2011.07.003
17. Chong, A. Y.-L. "Predicting M-Commerce Adoption Determinants: A Neural Network Approach". *Expert Systems with Applications*, *40* no.2 (2013), 523–530. https://doi.org/10.1016/j.eswa.2012.07.068
18. Chopdar, P. K., & Balakrishnan, J. (2020). Consumers response towards mobile commerce applications: SOR approach. *International Journal of Information Management*, *53*. DOI:10.1016/j.ijinfomgt.2020.102106
19. Dakduk, S., Santalla-Banderali, Z., & Siqueira, J. R. (2020). Acceptance of mobile commerce in low-income consumers: evidence from an emerging economy. *Heliyon*, *6*(11). DOI:10.1016/j.heliyon.2020.e05451
20. Davis, F. D. "Perceived Usefulness, Perceived Ease of Use, and User Acceptance of Information Technology. *MIS Quarterly*, *13* no.3 (1989), 319–340. https://doi.org/10.2307/249008
21. DeLone, W. H., & McLean, E. R. "Information systems success: The Quest for the Dependent Variable". *Information systems research*, *3* no.1 (1992), 1-95.https://doi.org/10.1287/isre.3.1.60
22. DeLone, W. H., & McLean, E. R. "The DeLone and McLean Model of Information Systems Success: A Ten-year Update. *Journal of Management Information Systems*, *19* no.4 (2003): 9-30.https://www.jstor.org/stable/40398604
23. Ebrahimi, M., Daneshvar, A., &Valmohammadi, C. (2024). Using a comprehensive DEMATEL-ISM-MICMAC and importance–performance analysis to study sustainable service quality features. *Journal of Economic and Administrative Sciences*. https://doi.org/10.1108/JEAS-05-2023-0114
24. Eger, L., Komárková, L., Egerová, D., &Mičík, M. "The Effect of COVID-19 on Consumer Shopping Behaviour: Generational Cohort Perspective". *Journal of Retailing and Consumer Services*, *61* (2021), https://doi.org/10.1016/j.jretconser.2021.102542
25. Ganbold, S. "M-commerce Penetration APAC 2020 by Country or Region". Accessed on 24 August 2022 from https://www.statista.com/statistics/255214/mobile-commerce-penetration-in-asia-pacific-countries/
26. Gani, M. O., Faroque, A. R., Muzareba, A. M., Amin, S., & Rahman, M. "An Integrated Model to Decipher Online Food Delivery App Adoption Behavior in the COVID-19 Pandemic". *Journal of Foodservice Business Research*, *26* no.2 (2023), 123-163.https://doi.org/10.1080/15378020.2021.2006040
27. Ghandvar, P., Azad, N., Naami, A., &Meshkani, F. A. (2024). The Concept of M-Commerce Customer Experience: How Retail Mobile Apps Can Change the Game. *International Journal of Marketing, Communication and New Media*, *11*(21). https://doi.org/10.54663/2182-9306.2023.v11.n21.153-178
28. Gharaibeh, N., Gharaibeh, M. K., Gharaibeh, O., &Bdour, W. (2020). Exploring intention to adopt mobile commerce: Integrating UTAUT2 with social media. *International Journal of Scientific and Technology Research*, *9*(3), 3826-3833.
29. Ghazali, E. M., Mutum, D. S., Chong, J. H., & Nguyen, B. "Do Consumers Want Mobile Commerce? A Closer Look at M-Shopping and Technology Adoption in Malaysia". *Asia Pacific Journal of Marketing and Logistics*, *30* no.4 (2018), 1064-1086.DOI:10.1108/APJML-05-2017-0093
30. Ho, V. T. "Motivation Impulses Customers' Online

Shopping Intention Via Cashback and Rewards Mobile Applications". *Independent Journal of Management & Production13, no.*5 (2022): 1235-1255.https://doi.org/10.14807/ijmp.v13i5.1740

31. ITU Statistics. "International Telecommunication Union Statistics Report". Accessed on 20 August 2023 from https://www.itu.int/en/ITU-D/Statistics/Pages/stat/default.aspx
32. Ivanova, A., & Noh, G. "The Impact of Service Quality and Loyalty on Adoption and Use of Mobile Banking Services: Empirical Evidence from Central Asian Context". *The Journal of Asian Finance, Economics, and Business 9, no.* 5 (2022): 75 - 86. DOI: 10.13106/jafeb.2022.vol9.no5.0075.
33. Jain, N. K., Kaul, D., & Sanyal, P. "What Drives Customers towards Mobile Shopping? An Integrative Technology Continuance Theory Perspective". *Asia Pacific Journal of Marketing and Logistics34, no.* 5 (2021): 922 – 943.https://doi.org/10.1108/APJML-02-2021-0133
34. Jan, M. T., & Haque, A. "Antecedents of the Use of Online Banking by Students in Malaysia Extended TAM Validated through SEM". *International Business Management 8, no.* 5 (2014): 277-284.
35. Kao, W. K., & L'Huillier, E. A. (2022). The moderating role of social distancing in mobile commerce adoption. *Electronic Commerce Research and Applications*, *52*, DOI:10.1016/j.elerap.2021.101116
36. Kao, W. K., & L'Huillier, E. A. "The Moderating Role of Social Distancing in Mobile Commerce Adoption". *Electronic Commerce Research and Applications*, *52*, (2022): 101-116.https://doi.org/10.1016/j.elerap.2021.101116
37. Khalifa, M., Cheng, S. K., & Shen, K. N. (2012). Adoption of mobile commerce: A confidence model. *Journal of computer information Systems*, *53*(1), 14-22. DOI:10.1080/08874417.2012.11645592
38. Kumari, T., & Bhatt, D.S. (2020). Adoption of M-Commerce in India. *Business, Economics, Computer Science.* Corpus ID: 222218407
39. LaMorte, W. W. "Behavioral Change Models: The Theory of Planned Behavior." (2019). Accessed on 28 September 2022 from https://sphweb.bumc.bu.edu/otlt/MPH-Modules/SB/BehaviverbalChangeTheories/BehaviverbalChangeTheories3.html.
40. Lin, P. M., Au, W. C. W., & Baum, T. (2024). Service quality of online food delivery mobile application: an examination of the spillover effects of mobile app satisfaction. *International Journal of Contemporary Hospitality Management*, *36*(3), 906-926. https://doi.org/10.1108/IJCHM-09-2022-1103
41. Liu, C., & Forsythe, S. "Examining Drivers of Online Purchase Intensity: Moderating Role of Adoption Duration in Sustaining Post-Adoption Online Shopping." *Journal of Retailing and Consumer Services18,* no. 1 (2011): 101-109. https://doi.org/10.1016/j.jretconser.2010.10.004
42. Liu, Y., Wang, M., Huang, D., Huang, Q., Yang, H., & Li, Z. (2019). The impact of mobility, risk, and cost on the users' intention to adopt mobile payments. *Information Systems and e-Business Management*, *17*, 319-342. DOI:10.1007/s10257-019-00449-0
43. Lucas, G. A., Lunardi, G. L., & Dolci, D. B. "From E-Commerce to M-Commerce: An Analysis of the User's Experience With Different Access Platforms." *Electronic Commerce Research and Applications 58*, (2023). https://doi.org/10.1016/j.elerap.2023.101240
44. MCMC Report. "4Q 2021 Communications & Multimedia Facts & Figures. (2021)." Accessed from https://www.mcmc.gov.my/skmmgovmy/media/General/C-M-Q4_220331_BI_PDF_1.pdf
45. MCMC. "Hand Phone Users Survey Report." (2021). Accessed from https://www.mcmc.gov.my/skmmgovmy/media/General/pdf2/FULL-REPORT-HPUS-2021.pdf
46. Mehedintu, A., &Soava, G. "A Hybrid SEM-Neural Network Modeling of Quality of M-Commerce Services under the Impact of the COVID-19 Pandemic." *Electronics 11*, no. 16 (2022), https://doi.org/10.3390/electronics11162499
47. Molina-Castillo, F. J., Lopez-Nicolas, C., & de Reuver, M. (2020). Mobile payment: The hiding impact of learning costs on user intentions. *Journal of theoretical and applied electronic commerce research*, *15*(1), 1-12. DOI:10.4067/S0718-18762020000100102
48. Mordor Intelligence. "Malaysia E-commerce Market Growth, Trends, Covide-19 Impact, and Forecasts 2022 – 2027." (2022). Accessed from https://www.mordorintelligence.com/industry-reports/malaysia-e-commerce-market.
49. Morgan, J. "E-commerce payments trends: Malaysia." (2019). Accessed from https://www.jpmorgan.com/europe/merchant-services/insights/reports/malaysia.
50. Muller, J. "Smartphone Penetration in Malaysia 2010 – 2025." (2022) Accessed from https://www.statista.com/statistics/625418/smartphone-user-penetration-in-malaysia/
51. Mwilongo, K. J. (2024). Systematic review on mobile technology in marketing academic libraries in developing countries. *Journal of Library Administration*, 1-18. https://doi.org/10.1080/01930826.2023.2287941
52. Nguyen, L. T. (2024). Factors affecting service quality and satisfaction customers use of mobile commerce

in Ho Chi Minh. *Forthcoming in: Conference on Economics and Business in the Digital Era – CEBD 2024 (10 February 2024)*.

53. O'Dea, S. "Number of Smartphone Users from 2016 to 2021 (in billions)." (2020). Accessed from https://www.statista.com/statistics/330695/number-of-smartphone-users-worldwide/
54. Ong, J. S. "*The Precursors Affecting the Online Spending Behaviour of Malaysians during Covid-19*" (Doctoral dissertation, Tunku Abdul Rahman University College), 2022
55. Pagano, C., Pipino, C., Squillante, D., Rocco, G., &Carrubbo, L. (2024). Preserve local commerce in the global e-commerce era: The case of CiShoppo. In *ITM Web of Conferences* (Vol. 62, p. 03003). EDP Sciences. https://doi.org/10.1051/itmconf/20246203003
56. Pipitwanichakarn, T., &Wongtada, N. (2020). The role online review on mobile commerce adoption: an inclusive growth context. *Journal of Asia Business Studies*, *14*(5), 759-778. DOI:10.1108/jabs-02-2019-0060
57. Puiu, S., Demyen, S., Tănase, A. C., Vărzaru, A. A., &Bocean, C. G. (2022). Assessing the Adoption of Mobile Technology for Commerce by Generation Z. *Electronics*, *11*(6), 866. DOI:10.3390/electronics11060866
58. Sari, E. N., &Subriadi, A. P. (2022, January). Consumer Behavior in Mobile Commerce Adoption: A Systematic Literature Review. In *2022 2nd International Conference on Information Technology and Education (ICIT&E)* (pp. 287-292). IEEE. DOI:10.1109/ICITE54466.2022.9759543
59. Sarkar, S., Chauhan, S., & Khare, A. "A Meta-Analysis of Antecedents and Consequences of Trust in Mobile Commerce. *International Journal of Information Management 50,* (2020): 286 – 301 https://doi.org/10.1016/j.ijinfomgt.2019.08.008.
60. Schiessl, D., Korelo, J., & Dias, H. B. A. (2023). How online shopping experiences shape consumer webrooming behavior. *Marketing Intelligence & Planning*, *41*(1), 16-30. https://doi.org/10.1108/MIP-08-2021-0254
61. Silitonga, D., Rohmayanti, S. A. A., Aripin, Z., Kuswandi, D., &Sulistyo, A. B. (2024). Edge computing in e-commerce business: Economic impacts and advantages of scalable information systems. *EAI Endorsed Transactions on Scalable Information Systems*, *11*(1). https://doi.org/10.4108/eetsis.4375
62. Singh, V., Vishvakarma, N. K., Mal, H., & Kumar, V. (2024). Prioritizing dark patterns in the e-commerce industry: An empirical investigation using analytic hierarchy process. *Measuring Business Excellence*. https://doi.org/10.1108/MBE-08-2023-0114
63. Statista. "Worldwide digital population April 2022." (2022). Accessed from https://www.statista.com/statistics/617136/digital-population-worldwide/
64. Varzaru, A. A., &Bocean, C. G. "A Two-Stage SEM–Artificial Neural Network Analysis of Mobile Commerce and its Drivers." *Journal of Theoretical and Applied Electronic Commerce Research 16, no. 6* (2021): 2304-2318. DOI:10.3390/jtaer16060127
65. Venkatesh, V., Thong, J. Y., & Xu, X. "Consumer Acceptance and Use of Information Technology: Extending the Unified Theory of Acceptance and Use of Technology." *MIS quarterly36,* no. 1, (2012): 157-178. https://doi.org/10.2307/41410412
66. Walker, H. L., Ghani, S., Kuemmerli, C., Nebiker, C. A., Muller, B. P., Raptis, D. A., &Staubli, S. M. "Reliability of Medical Information Provided by ChatGPT: Assessment Against Clinical Guidelines and Patient Information Quality Instrument." *Journal of Medical Internet Research*, *25*, (2023). doi:10.2196/47479
67. Wang, K., & Lin, C. L. "The Adoption of Mobile Value-Added Services: Investigating the Influence of IS Quality and Perceived Playfulness." *Managing Service Quality: An International Journal 22*, no. 2 (2012): 184 – 208. https://doi.org/10.1108/09604521211219007
68. Wang, M., & Choi, J. "How Web Content Types Improve Consumer Engagement through Scarcity and Interactivity of Mobile Commerce?" *Sustainability 14,* no. 9 (2022). https://doi.org/10.3390/su14094898
69. Wei, T.T., Marthandan, G., Chong, Y.L.A., Ooi, K.B., and Arumugam, S. "What Drives Malaysian M-Commerce Adoption? An Empirical Analysis." *Industrial Management and Data Systems 109, no. 3* (2009): 370-88. https://doi.org/10.1108/02635570910939399
70. World Bank. "Mobile Cellular Subscription." (2022). Accessed from https://data.worldbank.org/indicator/IT.CEL.SETS
71. World Health Organisation. "Weekly operational update on COVIDE-19 - 21 September 2022. Emergency Situational Updates, WHO website." (2022). Accessed from https://www.who.int/publications/m/item/weekly-epidemiological-update-on-covid-19---21-september-2022.
72. Xin, X., Wu, J., Huang, L., Shang, S., & Chen, P. (2022). Effect of multi-channel integration on customer purchase intention. *Journal of Computer Information Systems*, *62*(5), 1036-1047. DOI:10.5859/KAIS.2008.17.3.153
73. Xu, X. Y., Jia, Q. D., & Tayyab, S. M. U. (2024). Exploring the stimulating role of augmented reality features in E-commerce: A three-staged hybrid

approach. *Journal of Retailing and Consumer Services*, *77*. https://doi.org/10.1016/j.jretconser.2023.103682

74. Yadav, R., Sharma, S. K., &Tarhini, A. "A Multi-Analytical Approach to Understand and Predict the Mobile Commerce Adoption." *Journal of Enterprise Information Management 29,* no. 2, (2016): 222-237https://doi.org/10.1108/JEIM-04-2015-0034
75. Yahaya, S., Hamid, S. N. A., & Nafi, S. N. M. "Determinants for M-Commerce Adoption in Malaysian SMEs: A Conceptual Framework." *International Journal of Business and Economy 4,* no. 1 (2022): 138-149.
76. Yandamuri, P. Lim, G. Keswakaroon, D. "Digital Consumers of Tomorrow, Here Today." (2020). Accessed on 28 August 2022, from https://www.bain.com/insights/digital-consumers-of-tomorrow-here-today/
77. Yang, K. "Consumer Technology Traits in Determining Mobile Shopping Adoption: An Application of the Extended Theory of Planned Behavior." *Journal of Retailing and Consumer Services19,* no. 5 (2012): 484–491.https://doi.org/10.1016/j.jretconser.2012.06.003
78. Yapraklı, T. Ş. (2024). The relationship among u-constructs, trust and satisfaction: Evidence from mobile banking users. *International Journal of Management Studies*, *31*(1), 171-208. https://doi.org/10.32890/ijms2024.31.1.7
79. Yoo, J. "The Effects of Augmented Reality on Consumer Responses in Mobile Shopping: The Moderating Role of Task Complexity." *Heliyon 9,* no. 3 (2023). https://doi.org/10.1016/j.heliyon.2023.e13775
80. Yoo, J. "The Effects of Perceived Quality of Augmented Reality in Mobile Commerce: An Application of the Information Systems Success Model." *Informatics 7,* no. 2 (2020): 1-14.https://doi.org/10.3390/informatics7020014
81. Zhou, T., Lu, Y., & Wang, B. "Integrating TTF and UTAUT to Explain Mobile Banking User Adoption." *Computers In Human Behavior*, *26*, no. 4 (2010): 760-767.https://doi.org/10.1016/j.chb.2010.01.013