Article

Determinants of Mobile Shopping Apps Continuance Intention: A Review and Proposed Conceptual Model

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Abstract – Mobile shopping apps have experienced significant global growth due to the widespread adoption of mobile devices in everyday life. The exponential expansion of mobile shopping app usage has brought up both opportunities and challenges for service providers. For online businesses, maintaining their current users is a vital means of gaining a competitive edge. Hence, the primary objective of this research is to develop a conceptual model to examine the factors that influence users' intention to continue using mobile shopping apps. The Expectation-Confirmation Model (ECM) and the Theory of Network Externalities offer initial foundations for developing a unified conceptual model. This research has the potential to make a substantial contribution to the understanding of factors that influence continuance intention to use mobile shopping apps. It can benefit academicians, online businesses, service providers and mobile marketing practitioners.

Keywords: "mobile shopping apps", "continuance intention", "Expectation-Confirmation Model (ECM)", "Theory of Network Externalities".

1. Introduction

Customers now frequently use their mobile devices to search and purchase things, thanks to the rise of mobile shopping in recent years. The recent mobile statistics point to a substantial reliance on mobile shopping. Currently, more than half (50.9%) of online buyers worldwide use their mobile devices to make at least one weekly purchase (Kemp, 2023a). Furthermore, mobile channels accounted for approximately 65.7% of all retail e-commerce sales globally (Statista, 2022). From the global context, the same is true in Malaysia, where mobile devices are an essential purchasing tool for researching products, comparing pricing, improving shopping choices, and eventually making purchases. In Malaysia, at least 54.7% of the consumer goods e-commerce spend was attributable to purchases made via mobile phone in 2022 (Kemp, 2023b). Furthermore, it was stated that 62% of mobile commerce transactions are completed in mobile apps as compared to 38% completed on browsers (JP Morgan,

2020). This is consistent with global statistics, which predict that mobile commerce will surpass those of other forms of e-commerce.

Similarly, the utilization of mobile shopping applications has experienced a recent surge in tandem with the growth of the mobile commerce sector and the inclination towards mobile shopping. In the most recent quarter of 2023, consumers worldwide spent a total of USD33.7 billion on mobile apps, up 2% from the corresponding quarter in 2022, according to recent statistics on mobile apps usage (Statista, 2023a). According to another recent report by MarkWide Research (2023), the size of the global market for shopping applications is anticipated to reach USD48.8 billion by 2025. Furthermore, the number of mobile app downloads by customers to their connected devices increased to 255 billion in 2022 from 140.7 billion in 2016 (Statista, 2023b), an increase of more than 80%. The global installation of e-commerce apps in 2023, on the other hand, are now heading upward, with the average install in January 2023 being 4% higher than in 2022 (Adjust GmbH, 2023). Remarkably, people used shopping apps for 108 billion hours in 2022, up 71% from 63.2 billion hours in 2019 (Data.ai, 2023). Due to the COVID-19 pandemic, mobile sales from shopping apps grew quickly in 2020, especially for businesses who had to keep up with demand as customers avoided brick-and-mortar stores. Subsequently, mobile apps became crucial tools for cost-conscious consumers to save money, when in-person shopping made a comeback in 2022 and high inflation strained shoppers' wallets.

However, despite the high downloads of mobile apps, the average mobile retention rate across 31 categories of mobile apps was only 25.3% on the day of installation, according to Statista's (2023c) analysis on the global retention rate of mobile app installs. By day 30, this percentage drops to only 5.7%, which is a cause of concern for many mobile app marketers. Specifically, the retention rate of mobile shopping apps was only 5% on day 30 after app installs in 2022, which is lower than the average retention rate across all categories (Statista, 2023c). This indicates that after 30 days from installation, only 5% of mobile shopping app users will still be using the app. Moreover, it was noted that while more people installed shopping apps globally, retention rates remained unchanged (Muhammad, 2023). Therefore, based on the above practical issue on low user retention rate in using mobile shopping app, examining the factors that influence the intention of customers to continue using mobile shopping apps is essential in order to maintain customer loyalty with business-to-consumer enterprises.

Nevertheless, the exponential growths in the mobile shopping market have resulted in the soaring interest of mobile shopping in the academic sphere. As such, many studies in mobile shopping have been conducted (De Canio et al., 2022; Garrouch & Ghali, 2023; Omar et al., 2021). In addition, Luceri et al. (2022) in her meta-analysis of mobile shopping research found that there was a vast array of literature readily available in countless journals on this research area since 2002. However, many studies in mobile shopping tend to focus on consumer adoption. In other words, research on mobile shopping have been disproportionately dedicated to consumer adoption instead of continuance intention. Therefore, the primary goal of this article is to develop a conceptual model that investigates

how consumers' intention to continue using mobile shopping apps is formed. The Expectation-Confirmation Model (ECM) and the Theory of Network Externalities offer initial insights for developing a unified conceptual model. The study examines the links between referent network size, perceived complementarity, confirmation, perceived usefulness, satisfaction, and continuance intention in a systematic manner. In addition, price savings is included in the conceptual model to better understand the monetary value effects on satisfaction and continuance intention.

2. Literature Review

Technology continuance intention refers to a user's inclination to persist in utilizing a specific technology following their first acceptance of it (Bhattacherjee, 2001). The continuance intention to use IT/IS has become a topic of study over the past 20 years. Mobile food delivery apps (Ramos, 2022), mobile social apps (Akdim et al., 2022), mobile health apps (Lu et al., 2023) and mobile branded apps (Lim et al., 2021) are just a few examples of technology contexts in which research have been done on mobile apps continuance intention. Additionally, continuance intention was described as a deliberate or conscious action that is in accordance with the users' conscious or deliberate decision to act in a particular way. This is because decisions must take into consideration cumulative judgements of the effects of past usage as well as expectations of benefits from future usage (Bhattacherjee, 2001). However, it was discovered in a number of recent studies on mobile apps that continuance is subject to other influencing variables. These include variables from the utilitarian (Akel & Armağan, 2021) and hedonic (Akdim et al., 2022) dimensions. Moreover, there is a suggestion that repurchase intention and continuance intention can be considered similar because they both stem from previous actions (such as acceptance or purchase), are influenced by the user's experiences with IT/IS or the product, and have the ability to influence future decisions (Bhattacherjee, 2001). Additionally, according to various studies, continuance intention and loyalty are interchangeable in scenarios involving mobile devices (Hsieh et al., 2021; Poromatikul et al., 2020).

2.1. Expectation-Confirmation Model (ECM)

Bhattacherjee (2001) developed the Expectation-Confirmation Model (ECM) on the foundation of Oliver's (1980) Expectation-Confirmation Theory (ECT). The original purpose of the ECT was to investigate consumer repurchase intentions based on expectations, perceived performance, confirmation, and satisfaction. Bhattacherjee (2001) proposed that customers' intentions to repurchase are comparable to those of IT/IS users in that both come from previous actions (buy or acceptance) and are influenced by the first time using a particular technology or service. Due to the intrinsic differences between the two, the ECT was modified through a variety of theoretical advancements to examine IT/IS continuance intention. The concept of expectancy in the pre-consumption stage was eliminated since it was believed that the concepts of confirmation and satisfaction in the post-acceptance stage had already encompassed it. The post-consumption expectation was then changed to be defined by post-consumption perceived usefulness because it is important

for future IT/IS use. The core idea reflected Bhattacherjee's (2001) goal to theorise a new model, known as the ECM.

The ECM was selected as the foundational model for this investigation owing to its distinct advantages. Fundamentally, ECT provided a solid theoretical foundation for the model. Over a wide range of circumstances, the ECM's predictive power has been demonstrated. Additionally, an increasing number of empirical investigations in the field of IT/IS continuance have supported the ECM's validity. For example, a number of earlier studies in mobile apps continuance intention (Aydınlıyurt et al., 2021; Liu et al., 2020; Maduku & Thusi, 2023; Rahi et al., 2022) discovered that the interrelationships of ECM factors were significant with one another. Generally, it has been confirmed that the model's applicability is robust.

Notwithstanding its advantages, the ECM was shown to be sparse in describing the dynamics of continuance behaviours (Gupta et al., 2020). This is not entirely unexpected because the model only has four variables, one of which is the dependent variable, i.e., continuance intention. Having said that, the study of continuance intention only takes into consideration three independent variables, i.e., confirmation, perceived usefulness, and satisfaction. In addition, Bhattacherjee (2001) also suggested that the ECM's extensions can help to comprehend better the continuance behaviour. In agreement with the above suggestion, Mishra et al. (2023) stated that modification, revision and expansion of a single model would be necessary in some IT/IS applications. As a result, the ECM has been expanded upon in a number of recent research conducted in various contexts. For example, in an effort to better contextualise their study on continuance intention, extensions were made in relation to enjoyment in social apps (Akdim et al., 2022), perceived risk in travel apps (Liu et al., 2020) and flow experience in health apps (Yan et al., 2021). These studies also discovered that the ECM's explanatory power increases by extending the ECM.

2.2. Theory of Network Externalities

According to Katz & Shapiro (1985), network effects pertain to the increase in advantages or benefits derived from using a product or service as its user base expands. In other words, as the user base grows, current users will gain additional benefits. Network externalities variables of network size and perceived complementarity are what cause network effects (Cheng et al., 2019). Therefore, network externalities can be used to capture the positive benefits of technology service utilisation that are felt by present and potential user groups. The users in the social circle would also be included in these groups. Considering this, it has been suggested that it reflects the phenomenon of social influence (Pal et al., 2020). When an individual chooses to purchase a product or utilize a service, they will unavoidably be subjected to the impact of others. Thus, according on this idea, such a situation may arise when an individual takes into account the number of individuals currently utilizing the same product or service (Cen & Li, 2020).

As stated by Lin & Bhattacherjee (2008), network externalities can be classified into two distinct categories: direct and indirect. Direct network externalities refer to the immediate

impact that the utilization of a certain product or service has. The broad use of the specific service directly leads to this effect (Li et el., 2018). Prior research has considered network size to be a vital factor in determining the impact of direct network externalities (Kuo, 2020; Tseng et al., 2018). Furthermore, indirect network externalities refer to the additional advantages that users may receive as an indirect consequence of the extension of the network (Li et al., 2018). These supplementary advantages may encompass the availability of related goods and services. Typically, it refers to an increase in the value or advantages that a consumer receives from a service due to the provision of other complementary services resulting from the development of the user base (Cen & Li, 2020). Several prior studies have incorporated indirect network externalities into their investigation of technology services, recognizing the importance of this factor (Zhang et al., 2017).

According to the current study, the referent network size and perceived complementarity—direct and indirect network effects—have a big influence on users' motivation to keep using mobile shopping apps. This is because, as network externalities illustrate, there is a close relationship between value and the ecosystem of mobile shopping app users (Song et al., 2018). The utilization of mobile shopping apps will experience a rise in value, particularly in terms of social and technological factors, through the expansion of referent network size and the addition of complementarity services.

2.3. Hypotheses Development

Confirmation. Confirmation pertains to the cognitive perception of consumers, indicating the extent to which their expectations of mobile shopping app usage align with its actual performance (Rahi et al., 2022). Satisfaction arises when the actual usage experience meets or surpasses the initial expectations, leading to the realization of perceived benefits (Oghuma et al., 2016). In addition, the extent of confirmation would be adjusted to the degree of perceived benefits felt by users. The study examines the perceived usefulness, which encompass the perceived benefits. Within the context of mobile shopping apps, perceived usefulness might be defined in terms of convenience. This is because, as smartphones have become an indispensable part of users' daily life, mobile shopping apps can reduce or eliminate the need to visit a physical store. Several past studies have also found confirmation as a significant antecedent of perceived usefulness in mobile commerce (Luqman et al., 2019; Oloveze et al., 2022) and mobile shopping (Maduku & Thusi, 2023; Nguyen & Ha, 2021). As such, the following hypotheses are formulated:

H1: Confirmation has a positive impact on satisfaction.
H2: Confirmation has a positive impact on perceived usefulness.

Perceived Usefulness. Perceived usefulness has been contextualised to refer to the degree of performance enhancement perceived by users from the usage of mobile shopping apps (Bhattacherjee, 2001). When compared to traditional physical shopping, mobile shopping apps offer increased usefulness which users will consider when it comes to determining their continuance intention. These benefits include increased speed and convenience during the checkout stage when purchasing a product or service. Multiple research on mobile apps have

since confirmed the two-fold impact of perceived usefulness on both satisfaction and intention to continue using the apps. These include those in the contexts of social apps in Spain by (Akdim et al., 2022) as well as health apps in China by (Yan et al., 2021). Moreover, the results are aligned with (Tam et al., 2020) as well as (Li & Fang, 2019) with regard to a general mobile application in Portugal and a specific mobile application of Starbucks in Taiwan respectively. A separate investigation on mobile commerce carried out in Malaysia by (Luqman et al., 2019) shown that the impact of perceived usefulness on both satisfaction and continuance intention was identified as one of the most robust correlations among all major connections. Furthermore, the correlation between perceived usefulness and both satisfaction and continuance intention has been confirmed in various studies conducted in different countries, including South Africa (Maduku & Thusi, 2023), Vietnam (Nguyen & Ha, 2021), Turkey (Bölen & Özen, 2020) South Korea (Kim et al., 2020) and Taiwan (Chen & Demirci, 2019). These studies have demonstrated that perceived usefulness has a substantial impact on both satisfaction and continuance intention. Given the above-mentioned, it is hypothesized that:

H3: Perceived usefulness has a positive impact on continuance intention.
H4: Perceived usefulness has a positive impact on satisfaction.

Satisfaction. Satisfaction pertains to the users' favourable emotional state resulting from the comprehensive assessment of the capabilities of products or services (Lim et al., 2019). The degree of satisfaction with a product or service is regarded as a pivotal determinant in its continued usage (Ifinedo, 2018). Hence, the likelihood of persistently using a certain product or service is significantly impacted by the level of satisfaction derived from previous usage (Bhattacherjee, 2001). Moreover, in the context of continuance intention to use mobile apps, many studies have established satisfaction as an important determinant. These studies were carried out in several different contexts and geographical locations in Asia including mobile health apps in Indonesia (Lu et al., 2023), mobile social apps in Spain (Akdim et al., 2022), and location-based apps in Turkey (Akel & Armağan, 2021). Additional research has also identified a noteworthy correlation between satisfaction and the intention to continue using mobile health apps (Chiu et al., 2021; Yan et al., 2021) as well as mobile food ordering and delivery apps (Al Amin et al., 2020; Zhao & Bacao, 2020). Moreover, when focusing specifically on mobile shopping apps, two separate studies conducted in Taiwan (Tseng et al., 2022) and Pakistan (Rahi et al., 2022) have shown satisfaction as a vital factor influencing the intention of users to continue using these apps. Therefore, the following hypothesis was formulated:

H5: Satisfaction has a positive impact on continuance intention.

'Price Savings. The phrase "price savings" has been used to describe the users' perception of the monetary savings or value-for-money benefits they will receive from utilizing mobile shopping apps (Tomacruz & Flor, 2018). Price savings is hypothesized to be a major factor in influencing customers' satisfaction and their inclination to continue using mobile shopping apps. This refers to the use of money to buy a product or service via a mobile device. In

addition, customers can derive several financial advantages from the utilization of mobile shopping apps. These encompass more affordable prices through various means such as discounts, cashbacks, rebates, and similar incentives. Since a mobile shopping app is a platform for purchasing items, achieving price savings might result in a feeling of satisfaction. Ultimately, this will lead to the ongoing utilization of the service on a regular basis. An example of a study that illustrates the aforementioned situation was conducted by (Shang & Wu, 2017). This study incorporated the value-for-money aspect in order to comprehend the continuance intention of consumers engaged in mobile shopping. Based on their findings, the component that had the greatest impact on satisfaction and intention to continue using the product or service was the value-for-money aspect. The impact of value-for-money was notable among all three categories: non-food mobile shoppers, food mobile shoppers, and those who purchased both. A parallel study was conducted by Lin & Wang (2006) to examine the determinants of customer loyalty in the context of mobile commerce. Their findings indicated that value-for-money exerted the greatest influence on satisfaction and loyalty among all the important variables examined in the study. Based on the information provided above, the following hypotheses were generated:

H6: Price savings has a positive impact on continuance intention.
H7: Price savings has a positive impact on satisfaction.

Referent Network Size. Referent network size pertains to the number of individuals, encompassing family members, friends, peers, and other acquaintances, who are part of the users' social circles and utilize mobile shopping apps (Cheng et al., 2019). The size of the referent network is believed to have a major impact on the intention to continue using mobile purchasing apps. The influence of a referent group on an individual's life is particularly significant when the group has a large number of members, is geographically proximate, and holds high social status and persuasive influence (Chang et al., 2018). Put simply, when the majority of the reference group approves of a certain behaviour, the individual is more inclined to be influenced to adopt the same behaviour (Wang et al., 2019) Furthermore, the interaction between a large number of peers amplifies the users' feeling of enjoyment and advantage derived from the utilization of technology (Lin & Bhattacherjee, 2008). Therefore, the subsequent hypotheses are derived:

H8: Referent network size has a positive impact on continuance intention.

Perceived Complementarity. Perceived complementarity pertains to the existence of services that enhance a network and provide additional value or benefits to its consumers (Sarkar & Khare, 209). As the network grows, it becomes increasingly attractive for third-party service providers to offer additional services that may be of interest to network consumers (Lin & Bhattacherjee, 2008). Users find a service more appealing when they consider it to be combined with other highly complementary services. The reason for this is that the utilization of interconnected services provides customers with a greater level of value compared to the value obtained from using each service individually (Wan et al., 2017). To simplify, the bundled service improves the overall functionality and usefulness of the entire

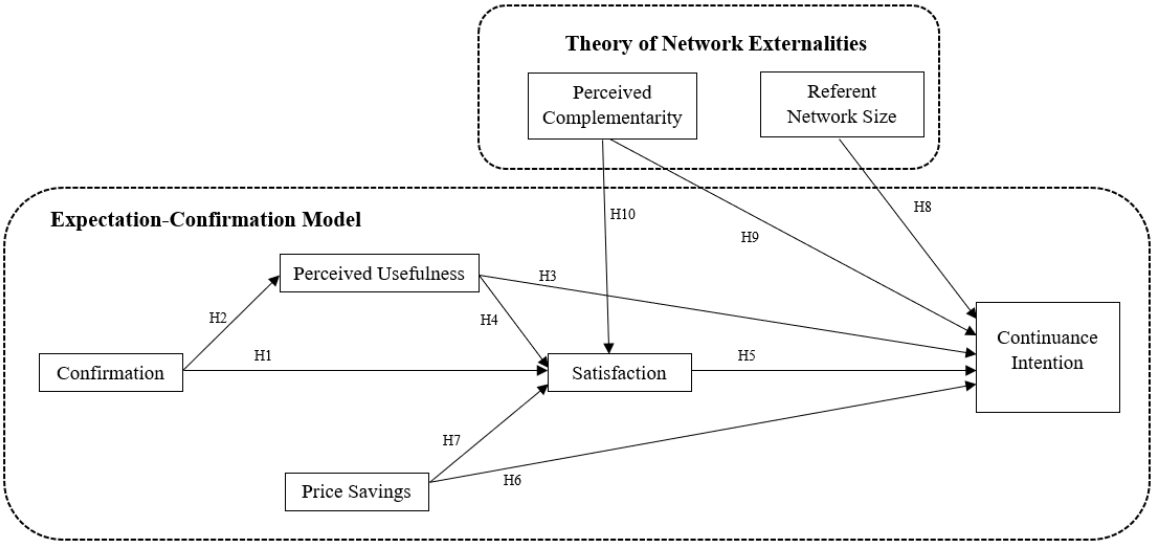
service (Gu et al., 2016). Therefore, the way consumers perceive the complementary nature of the bundled services is believed to have a substantial impact on their positive impression of the entire service bundle. In the context of mobile shopping apps, perceived complementarity refers to customers' perception of the presence of complementary services while using mobile shopping apps. Mobile shopping app users can take use of supplementary services including bill payments, pre-paid top-ups, cinema tickets, trip tickets, and hotel bookings (Sarkar & Khare, 2019). In addition, Shopee app provides insurance (motor insurance and product protection) and entertainment services such as games credits and online subscriptions. In this setting, mobile shopping apps providers will widen the range of services available by developing additional services on their own or cooperating with other companies. As such, the following hypotheses are formulated:

H9: Perceived complementarity has a positive impact on continuance intention.
H10: Perceived complementarity has a positive impact on satisfaction.

2.4. Proposed Conceptual Model

The conceptual model for this paper was derived by combining the ECM and Theory of Network Externalities and incorporating a variable for price savings into the model (refer to Figure 1). The integrated model consists of six independent variables that interact with the primary dependent variable in a variety of ways. Overall, it is hypothesised that the integrated research model can determine users' continuance intention to use mobile shopping apps.

Figure 1: Proposed Conceptual Model



3. Methodology

Quantitative research would be used to quantify the data and conclude the support in this research. The empirical data would be collected through questionnaires distributed to the mobile shopping app users in Malaysia. To ensure the relevance of the data collected, judgmental sampling is chosen as it facilitates the collection of data from participants who have the relevant information or experience with the subject matter of the research through the use of a strategic method rather than on a random basis. Under this sampling technique, the screening question "I am currently using or have recently used mobile shopping apps" is asked at the very start of the survey. This is done to ensure that only responses from mobile shopping apps users are obtained. An analysis will be conducted on a sample size of 400 respondents to examine the factors that impact the intention to continue using mobile shopping apps in Malaysia. The acquired quantitative data will be analysed using partial least squares structural equation modelling (PLS-SEM) with the use of SmartPLS. This is because it has the ability to evaluate causal frameworks that are supported by theory and are linear in nature. In addition, the conceptual model has multiple constructs with various structural path linkages, resulting in its complexity. Thus, PLS-SEM is the optimal analysis method for assessing the magnitude of the relationships in the suggested conceptual model.

4. Discussion

This study presents a comprehensive model to investigate the intention to continue using mobile shopping apps, as there is a lack of research on this topic in Malaysia. Based on the literature review, this study used the ECM and its variables, namely confirmation, perceived usefulness, satisfaction, and continuance intention, into its research model. The ECM has demonstrated its reliability in assessing continuance intention, albeit with a limited set of four variables in the model. Consequently, it is believed that the current understanding of the desire of Malaysian consumers to continue using mobile shopping apps is inadequate and incomplete. This is because there are other aspects from other dimensions that could significantly impact customers' choice to continue using mobile shopping apps.

Consequently, the Theory of Network Externalities was incorporated into the ECM framework to analyse the effects of the social aspect of mobile shopping applications. The model incorporates the referent network size due to the impact of social influence on mobile commerce usage. This will examine how referent groups directly affect the benefits that users derive from using mobile shopping apps. Users will behave more consistently with their in-group members and exhibit higher intention to continue using it if they believe that the majority of their referent group members acknowledge, accept, and utilise mobile shopping apps. In addition, since the quantity of complementary services contributes to the value development of a technology, perceived complementarity is added. Value creation for mobile shopping applications comes from the apps' perceived usefulness, whereas value capture comes from the satisfaction users have as a result of utilising the apps. Therefore, this situation will impact the desire to persist in using mobile shopping applications.

Furthermore, this study expanded the existing ECM by include a variable for price savings. Although price is of great importance, it seems that academics and researchers have not devoted much attention to it. Furthermore, as the price is undeniably a crucial aspect of shopping, the variable of price savings can more accurately represent the particular circumstances of mobile shopping. This is because utilizing mobile shopping applications typically entails the act of purchasing a product or service. Furthermore, it is assumed that price reductions would be a significant antecedent for mobile shopping apps continuance intention because Malaysians are price sensitive.

5. Conclusion

Ultimately, this paper developed a conceptual model to examine the factors that influence users' desire to continue using mobile shopping applications. The ECM and the Theory of Network Externalities offered initial insights to develop a unified conceptual model. This study offered a fundamental framework for developing an enhanced and updated model to further the existing body of literature on the continued use of mobile applications. This research has the potential to make a substantial contribution to academics, online retailers, service providers, and mobile marketing practitioners by enhancing their understanding of the elements that influence the continued use of mobile shopping apps.

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References

Adjust GmbH. (2023). Mobile app trends: 2023 edition. https://www.adjust.com/resources/ebooks/mobile-app-trends-2023/

Akdim, K., Casaló, L. V, & Flavián, C. (2022). The role of utilitarian and hedonic aspects in the continuance intention to use social mobile apps. *Journal of Retailing and Consumer Services*, *66*, 102888.

Akel, G., & Armağan, E. (2021). Hedonic and utilitarian benefits as determinants of the application continuance intention in location-based applications: The mediating role of satisfaction. *Multimedia Tools and Applications*, *80*(5), 7103–7124.

Al Amin, M., Arefin, M. S., Sultana, N., Islam, M. R., Jahan, I., & Akhtar, A. (2020). Evaluating the customers' dining attitudes, e-satisfaction and continuance intention toward mobile food ordering apps (MFOAs): evidence from Bangladesh. *European Journal of Management and Business Economics*, *30*(2), 211–229.

Aydınlıyurt, E. T., Taşkın, N., Scahill, S., & Toker, A. (2021). Continuance intention in gamified mobile applications: A study of behavioral inhibition and activation systems. *International*

Journal of Information Management, *61*, 102414.
Bhattacherjee, A. (2001). Understanding information systems continuance: An expectation-confirmation model. *MIS Quarterly*, 351–370.
Bölen, M. C., & Özen, Ü. (2020). Understanding the factors affecting consumers' continuance intention in mobile shopping: the case of private shopping clubs. *International Journal of Mobile Communications*, *18*(1), 101-129.
Cen, Y., & Li, L. (2020). Effects of network externalities on user loyalty to online B2B platforms: an empirical study. *Journal of Enterprise Information Management*, *33*(2), 309–334.
Chang, J.H., Zhu, Y.Q., Wang, S.-H., & Li, Y.-J. (2018). Would you change your mind? An empirical study of social impact theory on Facebook. *Telematics and Informatics*, *35*(1), 282–292.
Chen, C.W., & Demirci, S. (2019). Factors affecting mobile shoppers' continuation intention of coffee shop online store: A perspective on consumer tolerance. *International Journal of Electronic Commerce Studies*, *10*(2), 203–238.
Cheng, S., Lee, S.J., & Choi, B. (2019). An empirical investigation of users' voluntary switching intention for mobile personal cloud storage services based on the push-pull-mooring framework. *Computers in Human Behavior*, *92*, 198–215.
Chiu, W., Cho, H., & Chi, C. G. (2021). Consumers' continuance intention to use fitness and health apps: an integration of the expectation–confirmation model and investment model. *Information Technology & People*, *34*(3), 978–998.
Data.ai. (2023). State of Mobile 2023. https://www.data.ai/en/go/state-of-mobile-2023/
De Canio, F., Fuentes-Blasco, M., & Martinelli, E. (2022). Extrinsic motivations behind mobile shopping: what drives regular and occasional shoppers? *International Journal of Retail & Distribution Management*, *50*(8/9), 962-980.
Garrouch, K., & Ghali, Z. (2023). On linking the perceived values of mobile shopping apps, customer well-being, and customer citizenship behavior: Moderating role of customer intimacy. *Journal of Retailing and Consumer Services*, *74*, 103396.
Gu, R., Oh, L.B., & Wang, K. (2016). Multi-homing on SNSs: the role of optimum stimulation level and perceived complementarity in need gratification. *Information & Management*, *53*(6), 752–766.
Gupta, A., Yousaf, A., & Mishra, A. (2020). How pre-adoption expectancies shape post-adoption continuance intentions: An extended expectation-confirmation model. *International Journal of Information Management*, *52*, 102094.
Hsieh, S. H., Lee, C. T., & Tseng, T. H. (2021). Branded app atmospherics: Examining the effect of pleasure–arousal–dominance in brand relationship building. *Journal of Retailing and Consumer Services*, *60*, 102482.
Ifinedo, P. (2018). Determinants of students' continuance intention to use blogs to learn: An empirical investigation. *Behaviour & Information Technology*, *37*(4), 381–392.
JP Morgan. (2020). 2020 E-commerce Payments Trends Report: Malaysia. https://www.jpmorgan.com/merchant-services/insights/reports/malaysia-2020
Katz, M. L., & Shapiro, C. (1985). Network externalities, competition, and compatibility. *The American Economic Review*, *75*(3), 424–440.
Kemp, S. (2023a, January 26). Digital 2023: Global Overview Report. Datareportal. https://datareportal.com/reports/digital-2023-global-overview-report
Kemp, S. (2023b, February 13). Digital 2023: Malaysia. Datareportal. https://datareportal.com/reports/digital-2023-malaysia
Kim, D. W., Lee, S., & Li, W. (2020). Factors influencing continued use intentions in mobile shopping: the case of South Korea. *International Journal of Business and Emerging Markets*, *12*(1), 66–93.

Kuo, R.Z. (2020). Why do people switch mobile payment service platforms? An empirical study in Taiwan. *Technology in Society*, *62*, 101312.

Li, B., Wang, X., & Tan, S. C. (2018). What makes MOOC users persist in completing MOOCs? A perspective from network externalities and human factors. *Computers in Human Behavior*, *85*, 385–395.

Li, C.Y., & Fang, Y.H. (2019). Predicting continuance intention toward mobile branded apps through satisfaction and attachment. *Telematics and Informatics*, *43*, 101248.

Lim, S. H., Kim, D. J., Hur, Y., & Park, K. (2019). An empirical study of the impacts of perceived security and knowledge on continuous intention to use mobile fintech payment services. *International Journal of Human–Computer Interaction*, *35*(10), 886–898.

Lim, X. J., Cheah, J. H., Ng, S. I., Kamal Basha, N., & Liu, Y. (2021). Are men from Mars, women from Venus? Examining gender differences towards continuous use intention of branded apps. *Journal of Retailing and Consumer Services*, *60*, 102422

Lin, C.P., & Bhattacherjee, A. (2008). Elucidating individual intention to use interactive information technologies: The role of network externalities. *International Journal of Electronic Commerce*, *13*(1), 85–108.

Lin, H.H., & Wang, Y.S. (2006). An examination of the determinants of customer loyalty in mobile commerce contexts. *Information & Management*, *43*(3), 271–282.

Liu, Y., Li, Q., Edu, T., & Negricea, I. C. (2020). Exploring the Continuance Usage Intention of Travel Applications In the Case of Chinese Tourists. *Journal of Hospitality and Tourism Research*, *47*(1), 6-32.

Lu, H.H., Lin, W.S., Raphael, C., & Wen, M.J. (2023). A study investigating user adoptive behavior and the continuance intention to use mobile health applications during the COVID-19 pandemic era: Evidence from the telemedicine applications utilized in Indonesia. *Asia Pacific Management Review*, *28*(1), 52–59.

Luceri, B., Bijmolt, T. T., Bellini, S., & Aiolfi, S. (2022). What drives consumers to shop on mobile devices? Insights from a Meta-Analysis. *Journal of Retailing*, *98*(1), 178–196.

Luqman, A., Razak, R. C., Ismail, M., Alwi, M. A. M., & Li, C. C. (2019). Continuance Intention in Mobile Commerce Usage Activities among Young Malaysian Consumers. *Malaysian Journal of Consumer and Family Economics*, *22*, 152–166.

Maduku, D. K., & Thusi, P. (2023). Understanding consumers' mobile shopping continuance intention: New perspectives from South Africa. *Journal of Retailing and Consumer Services*, *70*, 103185.

MarkWide Research. (2023). Shopping Application Market Analysis- Industry Size, Share, Research Report, Insights, Covid-19 Impact, Statistics, Trends, Growth and Forecast 2023-2030. https://markwideresearch.com/shopping-application-market/

Mishra, A., Shukla, A., Rana, N. P., Currie, W. L., & Dwivedi, Y. K. (2023). Re-examining post-acceptance model of information systems continuance: A revised theoretical model using MASEM approach. *International Journal of Information Management*, *68*, 102571.

Muhammad, Z. (2023, April 7). Ecommerce App Installs Go Up but Retention Remains Stagnant. Digital Information World.https://www.digitalinformationworld.com/2023/04/ecommerce-app-installs-go-up.html

Nguyen, G.D., & Ha, M.T. (2021). The role of user adaptation and trust in understanding continuance intention towards mobile shopping: An extended expectation-confirmation model. *Cogent Business & Management*, *8*(1), 1980248.

Oghuma, A. P., Libaque-Saenz, C. F., Wong, S. F., & Chang, Y. (2016). An expectation-confirmation model of continuance intention to use mobile instant messaging. *Telematics and Informatics*, *33*(1), 34–47.

Oliver, R. L. (1980). A cognitive model of the antecedents and consequences of satisfaction decisions. *Journal of Marketing Research*, *17*(4), 460–469.

Oloveze, A. O., Okonkwo, R. V. O., Nwachukwu, C. P., Ogbonna, C., & Chukwuoyims, K. (2022). User behaviour on continuance intention to use M-commerce in African context: mediating effect of perceived value. *LBS Journal of Management & Research*, *20*(1/2), 21-33.

Omar, S., Mohsen, K., Tsimonis, G., Oozeerally, A., & Hsu, J.H. (2021). M-commerce: The nexus between mobile shopping service quality and loyalty. *Journal of Retailing and Consumer Services*, *60*, 102468.

Pal, A., Herath, T., De', R., & Rao, H. R. (2020). Contextual facilitators and barriers influencing the continued use of mobile payment services in a developing country: insights from adopters in India. *Information Technology for Development*, *26*(2), 394–420.

Poromatikul, C., De Maeyer, P., Leelapanyalert, K., & Zaby, S. (2020). Drivers of continuance intention with mobile banking apps. *International Journal of Bank Marketing*, *38*(1), 242–262.

Rahi, S., Alghizzawi, M., Ishtiaq, M., Ngah, A., & Mehta, A. M. (2022). Examining consumer behaviour towards continuance use of mobile shopping apps with the integration of expectation confirmation theory and flow theory. *International Journal of Business Information Systems*, 2–24.

Ramos, K. (2022). Factors influencing customers' continuance usage intention of food delivery apps during COVID-19 quarantine in Mexico. *British Food Journal*, *124*(3), 833–852.

Sarkar, S., & Khare, A. (2019). Influence of expectation confirmation, network externalities, and flow on use of mobile shopping apps. *International Journal of Human–Computer Interaction*, *35*(16), 1449–1460.

Shang, D., & Wu, W. (2017). Understanding mobile shopping consumers' continuance intention. *Industrial Management & Data Systems*, *117*(1), 213–227.

Song, P., Xue, L., Rai, A., & Zhang, C. (2018). The ecosystem of software platform: A study of asymmetric cross-side network effects and platform governance. *MIS Quarterly*, *42*(1), 121–142.

Statista. (2022). M-commerce share of total retail online sales worldwide 2022, by region. https://www.statista.com/statistics/806323/mobile-commerce-share-total-worldwide-region/

Statista. (2023a). Quarterly mobile app consumer spend on mobile apps Q1 2023. Statista. https://www.statista.com/statistics/266275/mobile-app-consumer-spend-on-mobile-apps-quarter/

Statista. (2023b). Annual number of global mobile app downloads 2016-2022. https://www.statista.com/statistics/271644/worldwide-free-and-paid-mobile-app-store-downloads/

Statista. (2023c). Mobile app user retention rate worldwide Q3 2022, by category. https://www.statista.com/statistics/259329/ios-and-android-app-user-retention-rate/

Tam, C., Santos, D., & Oliveira, T. (2020). Exploring the influential factors of continuance intention to use mobile Apps: Extending the expectation confirmation model. *Information Systems Frontiers*, *22*(1), 243–257.

Tomacruz, M. D. G., & Flor, N. T. (2018). Family perception and their buying behavior for home-delivered food. *International Journal of Tourism Sciences*, *18*(4), 237–246.

Tseng, F.C., Pham, T. T. L., Cheng, T. C. E., & Teng, C.I. (2018). Enhancing customer loyalty to mobile instant messaging: Perspectives of network effect and self-determination theories. *Telematics and Informatics*, *35*(5), 1133–1143.

Tseng, T. H., Lee, C. T., Huang, H. T., & Yang, W. H. (2022). Success factors driving consumer

reuse intention of mobile shopping application channel. *International Journal of Retail and Distribution Management*, *50*(1), 76–99.

Wan, J., Zhao, L., Lu, Y., & Gupta, S. (2017). Evaluating app bundling strategy for selling mobile apps: an ambivalent perspective. *Information Technology & People*, *30*(1), 2–23.

Wang, W.T., Ou, W.M., & Chen, W.Y. (2019). The impact of inertia and user satisfaction on the continuance intentions to use mobile communication applications: A mobile service quality perspective. *International Journal of Information Management*, *44*, 178–193.

Yan, M., Filieri, R., Raguseo, E., & Gorton, M. (2021). Mobile apps for healthy living: Factors influencing continuance intention for health apps. *Technological Forecasting and Social Change*, *166*, 120644.

Zhang, C.B., Li, Y.N., Wu, B., & Li, D.J. (2017). How WeChat can retain users: Roles of network externalities, social interaction ties, and perceived values in building continuance intention. *Computers in Human Behavior*, *69*, 284–293.

Zhao, Y., & Bacao, F. (2020). What factors determining customer continuingly using food delivery apps during 2019 novel coronavirus pandemic period? *International Journal of Hospitality Management*, *91*, 1026.