### Mobile Commerce in Vietnam: Literature Review

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#### Abstract:

The paper has conducted an overview of studies related to e-commerce and mobile commerce. From the theoretical basis reviewed, we conduct a current situation analysis of mobile commerce application in Vietnamese enterprises. The statistics inherited from the research and aggregation of organizations show that the growth of mobile commerce is very fast

Keywords: Mobile commerce, Vietnam

### **1. Introduction**

Previous studies have considered the significant evolvement of mobile devices and mobile internet technologies in recent year (Hanafizadeh, Behboudi, Koshksaray and Tabar, 2014, Malaquias and Hwang, 2016) as an important facilitator of the development and proliferation of mobile applications and mobile business (Celik, 2016, Lu, 2014). As a result, mobile commerce has emerged as an alternative and modern type of shopping among consumers (Khoi et al., 2018, Phong, Khoi and Le, 2018, Shao, Zhang, Li and Guo, 2019). Because mobile commerce use mobile devices and wireless internet connection, the key benefits of this modern type of commerces are ubiquity, accessibility, convenience, localization, instant connectivity, time sensitivity and security (Anil, Ting, Moe and Jonathan, 2003, Nassuora, 2013, Sanakulov and Karjaluoto, 2015, Zhang, Zhu and Liu, 2012). Also, mobile commerce is faster, more powerful and more effective than computer-based ecommerce (Hsieh, 2014).

With no exception, the development of mobile commerce depends on the attraction of new consumers (Ovčjak, Heričko and Polančič, 2015, Sanakulov and Karjaluoto, 2015, Zhang et al., 2012). This issue also attracts the interest of academia all over the world. Indeed, previous studies have revealed that one of the main topics is what determinants of customer intention to use this modern type of shopping. Previous studies have categorized online shopping into mobile commerce, electronic commerce, social commerce and Facebook commerce (Khoi et al., 2018, Lam, Yeung, Lo and Cheng, 2019, Wu, Shen and Chang, 2015). While mobile commerce refers to conducting transactions on mobile devices, electronic commerce is defined as conducting an online transaction via the Internet in a computer-mediated environment (Vladimir, 1996), social commerce can be seen as a subset of electronic commerce that includes conducting various types of commercial activities on social media (Lam et al., 2019) such as Facebook, Twitter. As such Facebook commerce is social commerce that is conducted in a specific social network of Facebook (Chen, Su and Widjaja, 2016). With the increasing competition between mobile commerce and other types of commerce, maintaining existing consumers seems to be more effective and efficient (Yuan, Liu, Yao and Liu, 2014, Zhou, 2013c, Zhou, 2013e, Zhou, 2014).

In other words, nurturing and fostering continuance intention of mobile commerce use also is a significant issue to discover (Bhattacherjee, Perols and Sanford, 2015, Yuan et al., 2014, Zhou, 2014). However, previous studies in a mobile commerce context mainly focus on initial adoption while continuance adoption or repurchase loyalty receives less attention and interest (Shao et al., 2019, Zhou, 2014). Also, prior studies have largely adopted technology's characteristics driving factors that are derived from well-established models such as the technology acceptance model (TAM; Davis, 1989), innovation diffusion theory (IDT; Rogers, 1995) and the unified theory of acceptance and usage of technology (UATUT; Venkatesh, Morris, Davis and Davis, 2003) to increase the predictive power of models explaining and predicting consumer continuance intention to use mobile commerce (Shao et al., 2019, Zhou, 2013b, Zhou, 2013e, Zhou, 2014). Most of prior research focus on either promotion or barrier factors, for example, Chong (2015) adopts two constructs of technology acceptance

model, which are perceived usefulness and perceived ease of use, to explain an increase in continuance intention to use mobile commerce while Zhou (2014) uses two variables (i.e., Information quality and system quality) derived from the model of information system success to explain a decrease in continuance usage of mobile payment. However, there still a lack of studies that simultaneously investigates both promotion and barrier factors, for example risk and security to form a more comprehensive pictures of if and how opposite determinants are related to continuance intention to use mobile commerce (Hanafizadeh et al., 2014, Malaquias and Hwang, 2016, Phong et al., 2018). From the practical perspective, those understanding provide policy makers and companies with insights into the development of appropriate marketing strategies to promote the mobile commerce services use (Hsieh, 2014).

Furthermore, previous studies have documented that consumer behavior is affected by individual differences (Hong, Lin and Hsieh, 2017, Mohamed, Hussein, Hidayah Ahmad Zamzuri and Haghshenas, 2014, Wang, Ngai and Wei, 2012). In general, individual difference factors have been extensively divided into personality, cognitive style, and demographic/situational variables (Hirschberg, 1978). Among them, personality traits are stable characteristics that have important roles in explaining behavior (Liu, Zhao, Chau and Tang, 2015). Personality traits such as Big Five and personal values, perceived values, risk-taking propensity, personal innovativeness are adopted to explain continuance to use innovative products and services (Hong et al., 2017, Mohamed et al., 2014, Wang et al., 2012). However, time perspective - one personality traits factor that have potential to explain behavioral continuance intention – is largely ignored in a mobile commerce context (Joireman and King, 2016). From the academic perspective, the investigating of if and how time perspective is related to continuance intention to use mobile commerce contributes to the understanding of the relationship between personality traits and behavioral intention while from the practical aspect, this understanding would provide managers with more insights into consumer segmenting and targeting (Olsen and Tuu, 2017, Pozolotina and Olsen, 2019).

Nghiên cứu này tiến hành tổng quan các nghiên cứu trước đây về thương mại di động để đề xuất mô hình nghiên cứu trong tương lai.

### 2. Literature review

### 2.1. Mobile commerce and its advantages

Mobile commerce is considered as conducting transactions on mobile devices (smartphones, tablets) via wireless connections such as mobile internet (e.g., 3G, 4G) or wireless internet (Khoi et al., 2018). Mobile commerce allows consumers to conduct monetary transactions anywhere via mobile devices and mobile internet (Hsieh, 2014, Khoi et al., 2018). Compared to traditional electronic commerce, which is defined as conducting online transactions via the Internet in a computer-mediated environment (Vladimir, 1996), mobile commerce could be considered as a natural extension of traditional e-commerce (Chong, Chan and Ooi, 2012, Kourouthanassis and Giaglis, 2012). Previous studies have also mentioned social commerce, which refers to utilizing Web 2.0 features such as user-generated content and sharing of content in e-commerce or the use of social network(s) such as Facebook, Twitter in the context of e-commerce transactions (Lam et al., 2019, Wu et al., 2015). Thus, social commerce is a subset of traditional commerce and Facebook commerce but also social and Facebook commerce. One of the key advantages of social commerce and Facebook commerce is that they consumers may consult their social community to seek advice in their purchasing decisions, share product information with their friends or sell products or services via social media (Lam et al., 2019, Wu et al., 2015).

These unique advantages, together with the number of smartphone users is rapidly increasing, it is expected that mobile commerce would benefit consumers much more than e-commerce (Chong et al., 2012). Mobile commerce services offer innovative and advanced features that provide a new way of application and data presentation, process, and interaction compared to a PC or laptop computer that has generated a whole new set of services such as location-based services, context sensing services and push delivery. Furthermore, the

development of mobile devices and mobile Internet technologies have fostered the development of super apps, which bring consumer with more additional benefits such as epistemic and conditional value. This has sparked wholly new service categories that do not exist in electronic commerce (Hsieh, 2014, Kourouthanassis and Giaglis, 2012), attracting the interest of both scholars and practitioners to deeply explore and investigate more about mobile commerce (Kourouthanassis and Giaglis, 2012).

It is worthy to note that mobile commerce also has several disadvantages. More specifically, the conduct of online shopping on mobile devices may contain more risks than traditional and electronic commerce due to the various issues, for example, hidden and unconscious computing, location awareness services, and instant activities as well as small screens and limited computing capability of mobile devices (Yang and Zhang, 2009). Furthermore, since mobile services are considered as self-service technologies (Cunningham, Gerlach, Harper and Young, 2005), consumers expected to have responsibilities on their behaviors and actions, thus generating a psychological burden on them. For example, before making an online purchase on mobile devices, consumers need to ensure that their decisions are proper by conducting an extensive search for product information, sellers and intermediaries in order to compare prices and product quality (Law and Leung, 2000). Finally, the development of mobile devices' viruses and malware has put privacy and financial information on danger (Hartono et al., 2014). For example, hackers can steal credit card information and conducting fraudulent transactions without consumers' awareness. Hackers can also sell consumers' personal information such as email to an advertising company to send spam. As such, perceived security and perceived risk are becoming a major research topic among information systems professionals and academics (Hartono et al., 2014, Luo et al., 2010, Park and Tussyadiah, 2016). This generates a call for investigating both perceived risk and perceived security in explaining consumers' intention and behavior on a mobile commerce context (Phong et al., 2018).

#### 2.2. Continuance intention to use mobile commerce

Mobile service adoption includes initial adoption which is concerned with first-time usage and post-adoption which is concerned with continuance usage (Bhattacherjee et al., 2015, Zhou, 2014). In an increasingly competitive market such as mobile commerce, it is critical for mobile commerce service providers to retain users and facilitate consumer continuance usage (Yuan et al., 2014, Zhou, 2013e, Zhou, 2014). However, compared to the abundant research on initial adoption, post-adoption (i.e., continuance intention and usage) has received relatively less attention from researchers (Yuan et al., 2014, Zhou, 2013c, Zhou, 2014), especially in the domain of mobile commerce. In this study, continuance intention refers to individuals' intention to continue mobile commerce use (Bhattacherjee, 2001a, Bhattacherjee, 2001b, Bhattacherjee et al., 2015).

Previous studies have adopted a wide range of theory to explain and predict continuance intention to use MC, including theory of reasoned action (Ajzen and Fishbein, 1980, Fishbein and Ajzen, 1977), Theory of Planned Behavior (Ajzen, 1991), technology acceptance model (Davis, 1989), information systems success (DeLone and McLean, 1992, Delone and McLean, 2003), innovation diffusion theory (Rogers, 1995), the unified theory of acceptance and use of technology (Venkatesh et al., 2003), and extended models based on these theories (e.g., Khalifa, Cheng and Shen, 2012, Khalifa and Shen, 2008b). Recent studies on continuance intention to use mobile commerce (Shao et al., 2019, Yuan et al., 2014, Zhou, 2013b, Zhou, 2013d, Zhou, 2013e, Zhou, 2014) have shifted the focus from classical models to personality traits as well as novelty structure of well-know variables. For example, Zhou (2013c) investigates how the trait of resistence to change affect continuance to use mobile internet service, and Hartono et al. (2014) repecify and validate a new reflective - formative measurement of perceived security in electronic commerce context while Park and Tussyadiah (2016) review different dimensions of perceived risk and validate that a multi-dimensional operationalization provides better understanding of risk. As such, personality traits and multi-dimensional structure of well-established variables may have important roles in explaining continuance intention to use mobile commerce. This study focuses on CFC, a personality trait has been largely ignored in a MC context, and investigate how CFC is related to highorder constructs of risk and security to influence continuance intention to use MC.

### 3. Mobile commerce adoption in Vietnamese enterprises

According to the Vietnam Ministry of Industry and Trade (2015), the development and application of mobile applications in business are becoming a new trend being adopted by many enterprises. Overall, it can be seen that the application of the mobile platform seems to be limited to enterprises that have large size, long-term strategies, and plentiful resources. This implies that the majority of enterprises such as SMEs seem to be not ready for this change (Vietnam E-Commerce Association, 2019). More specifically, according to Vietnam E-Commerce Association (2019), a survey indicated that in 2018, the percentage of enterprises that have mobilebased websites was 17% and this figure is not different in the last 3 years. Among enterprises with mobilebased websites or applications, 43% allowed consumers to conduct the entire shopping process on mobile devices, 31% specially launched promotion program and 45% received orders through mobile websites or applications. These figures have not changed much over the past 3 years. Also, the rate of enterprises possessing mobile sales applications accounted for only 14% in 2018 and witnessed no change compared to previous years. Finally, the report also indicated that the average amount of time that customers stayed when accessing to mobile-based e-commerce websites or applications in 2018 was not really remarkable. However, mobile commerce in Vietnam is still in its early stage and so far, have failed to attract potential consumers because of many barriers, for example, high risk as well as lacking trust. To win customer' trust, electronic commerce exchange platforms such as Lazada and Shopee have continuously improved their privacy policies. These pravacy policies cover a wide range of topics, including personal information, financial information, transaction history and refund policies. Recently, Vietnamese customers put more focus on risk when conducting online transaction such as delivering wrong products, products with unidentified originality, wrong specification and refund policies among others, even with well-established brand such as Lazada or Shopee (Nhur Binh, 2018). Taking Lazada for example, many customers have complained about its new delivery and inspection policies. Accordingly, the buyer is entitled to open the package only after payment has been made to the shipper. This new policy undoubtedly increases the risk perception by customers and thus, many customers have abandon this brand (Mai Phương, 2019).

More specifically, according to the Vietnam E-Commerce Association (2018), the year 2015 witnessed the boom of the mobile commerce trend. Enterprises have not only invested in mobile infrastructure but also have further developed business operations on this new platform. Vietnamese companies have recognized the importance of the new business channel and therefore conducting websites upgrade compatible with mobile devices and developing mobile applications for doing business. This trend, however, seemed to promote in developed cities such as Hanoi and Ho Chi Minh city while appeared to slow down in other regions. It looks like many companies are not seeing the benefits of mobile commerce, and the demand to shop on mobile platforms seems to be significant only in urban. In Vietnam overall, the development levels are not high and unstable.



### **Figure 1: Websites with a mobile version** (Source: Vietnam E-Commerce Association, 2018)

Similarly, the proportion of enterprises having a mobile application for conducting transactions in 2017 was 15%, which was the same as the one in 2016.



Figure Error! No text of specified style in document.: Enterprises with a mobile application for doing business

(Source: Vietnam E-Commerce Association, 2018)

The average time-on-site of customers on mobile e-commerce websites or applications was not high, ranging from 14% (over 20 minutes) to 41% (5 to 10 minutes).

Regarding enterprises with a mobile website or mobile application, 42% allowed consumers to conduct buying process from pre-purchase to post-purchase, 29% provided promotion programs for customers buying products with mobile devices, and 47% accepted orders via mobile applications. These figures were mostly unchanged in comparing with the ones in 2016.



Figure 3: Average time-on-site of customers on the mobile versions of websites (Source: Vietnam E-Commerce Association, 2018)



Figure 4: Percentage of enterprises with a mobile application to support (Source: Vietnam E-Commerce Association, 2018)

In 2017, social networks were the most widely used platform for advertising (43%). Advertising via search tools was 31%, which was considerably lower than in 2016. The adoption of mobile applications as an advertising platform had a slight increment from 8% (2015) to 11% (2017).



Figure 5: Forms of advertising on websites/mobile applications (Source: Vietnam E-Commerce Association, 2018)

Regarding the cost for website/mobile application advertising, 56% of enterprises revealed that they have paid less than 10 million VND for the service, while 36% paid from 10 to 50 million VND and only 8% paid more than 50 million VND for advertising. Ho Chi Minh city and Hanoi were the two regions with the highest proportion of enterprises paying more than 50 million VND for online advertising, which are 14% and 12% respectively.



# Figure 6: Advertising expenditure of the five cities

(Source: Vietnam E-Commerce Association, 2018)

Social networks and search tools were the two-advertising platforms that had the highest perception of effectiveness for enterprises, 46% and 39% respectively.



Figure 7: Evaluation of the effectiveness of online advertising forms (Source: Vietnam E-Commerce Association, 2018)

## 4. Conclusion

Vietnam is an interesting context for investigating continuance intention to use mobile commerce since it is considered as a promising mobile commerce market. This is because the use of smartphones in Vietnam is rapidly increasing and consumers/users gradually form the habit of conducting research and purchases on their mobile phones (eMarketer, 2016). More specifically, among mobile phone users, the proportion of smartphone users has rapidly increased from 78% to 84% in the period 2016 - 2017 in the key cities of Vietnam. Also, among individuals under the age of 35, there exists up to 75 percent use smartphones for a wide range of purposes, including entertainment, seeking information, listening to music, watching videos, joining social networks and doing shopping (Nielsen, 2017). Thus, the increase of smartphone users and the development of mobile internet (3G, 4G, and 5G in near future) is expected to create a solid background for mobile commerce to flourish and expand in Vietnam. In addition, Vietnam is considered as a promising country for developing mobile advertising with about 35% per year (Appota, 2017). Furthermore, the application of mobile commerce into business to increase productivity is becoming a trend in Vietnam. As demonstrated in a report by Vietnam

E-Commerce Association (2018), there is over 49 percent of Vietnam's enterprises adopt mobile apps and websites to received orders from customers. More interestingly, it is expected that this proportion will increase rapidly in the future. Thus, adopting mobile commerce in business activities is a trend that must be adopted among e-commerce enterprises in Vietnam, especially when mobile commerce is a new, innovative and trendy among consumers all over the world. As such, Vietnam emerges as an interesting case for scholars to investigate the determinants of adoption behavior (Le, Koo and Sargent, 2013, Lin, Wu and Tran, 2014) such as continuance intention to use mobile commerce. Thus, this study selects Vietnam as a research context for investigating how CFCs and perceived risk and security are related to continuance intention to use mobile commerce.

Furthermore, previous studies have emphasized the differences in consumers' perception of online shopping between developed and developing countries, due to the differences in cultural, social, political, economic, and technological aspects. For example, Slade, Dwivedi, Piercy and Williams (2015) state that developed countries have highly developed infrastructure technologies for online shopping which in turn, drastically reduce the perceived risk and highly increase perceived security. Also, Hanafizadeh et al. (2014) content that in developed countries, electronic shopping in general and mobile shopping in specific have integrated deeply into consumers' lives, leading to high levels of perceived security in contrast to a low level of perceived risk. There is evidence suggesting that consumers have a different perception of promotion such as security and barrier factors such as risk between developed and developing countries (Hanafizadeh et al., 2014, Malaquias and Hwang, 2016). However, most of the previous studies have been conducted in developed countries while developing countries have received less attention from scholars (Khoi et al., 2018, Phong et al., 2018). This generates a call for investigating factors affecting consumers' behavior in a mobile commerce context in a developing country. Thus, this study selects Vietnam as an emerging research context to examine determinants of continuance intention of mobile commerce use (Hsieh, 2014).

Finally, scholars have a consensus that consumers' loyalty is essential to the sustainable development of online shopping (Chang and Chen, 2009). In other words, the ultimate success of mobile commerce is based on the background of consumers' perceptions and whether they are willing to continue using this innovative commerce. Therefore, it is crucial to understand how and why Vietnamese consumers decide to continue using mobile commerce from the perspective of, for example, consumers' personality traits and perception, and thus, a study is needed to explain continuance intention to use mobile commerce in a Vietnam context. The current study not only contributes by providing scholars and practitioners with some insights into how to promote mobile commerce in Vietnam but also has a potential to extend and enhance the current knowledge regarding how and why consumers' personality traits and perceptions are associated with continuance intention to use mobile commerce.

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