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FACTORS INFLUENCE CUSTOMER SATISFACTION IN MOBILE COMMERCE

– **A research on Vietnamese mobile users**



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Mobile commerce – a relative new commerce mode, has become a major topic for many researchers. Along with it, measuring customer satisfaction in m-commerce is important for a wide range of firms, for it is a key element to ensure firms' success.

This thesis seeks to elucidate mobile customer's perceptions regarding mobile commerce in Vietnam. The thesis provides an explanation on whether these customers are satisfied with m-commerce. In addition, features and challenges of m-commerce are identified, as well as the factors influencing customer satisfaction in m-commerce presented. In order to achieve these objectives, the research was carried out with quantitative methodology with primary data collected from mobile customers in many regions in Vietnam, especially in Hanoi and Ho Chi Minh City. The thesis was based on trustworthy sources to develop a theoretical framework, which was a fundamental foundation. Likewise, in order to provide empirical analysis, a questionnaire targeting actual Vietnamese mobile users was conducted.

The findings of this thesis reveal that the quality of the service, trust and mobile technology are the main factors that affect Vietnamese customer satisfaction in m-commerce. As to customer satisfaction, Vietnamese mobile users are slightly satisfied with mobile service in the country. The thesis can help the firms and other researchers to understand more the customers and service in a potential Vietnamese m-commerce market.

KEYWORDS:

Mobile commerce, Vietnam, mobile users, customer satisfaction, consumer behavior, service quality, mobile technology, trustworthiness

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1. INTRODUCTION

1.1 Research background

M-commerce, which stands for mobile commerce, is a key positive development for businesses and organizations (Anckar & D’Incau, 2002). It has increasingly expanded and plays a prominent role in our life. M-commerce is a fairly new term referring to “*any transaction with a monetary value that is conducted via a mobile telecommunications network*” (Durlacher, 2000). In another words, it is the action of selling and buying products, ordering or booking a service and/or transferring money via mobile phone or mobile Internet.

In this new decade, people are witnessing a rapid growth in technology along with an explosion in mobile devices penetration across the world. A study by Llamas (2015) depicts that the worldwide smartphone market is believed to rise in the near future; the smartphones shipment volumes is predicted to raise to at least 1.5 billion units in 2015 compared with 1.3 billion units in 2014; and by 2019, the total smartphones shipped could climb up to 2 billion units. Moreover, mobile penetration is broadening access and influencing the way consumers perform, interact, search information, and form purchase decisions (Mennecke and Strader, 2003; Niazi, Siddiqui, Shah and Hunjra, 2012). M-commerce also has the “unique value proposition of providing easily personalized, local goods and services anytime and anywhere” (Durlacher, 2000). As a consequence, the tremendous rise in the m-commerce revolution will pressure current e-commerce business models (Clarke, 2008).

Conversely, there are many limiting resources related to mobile service and devices, such as software and interface of mobile devices varying among different providers, screen space, or limited capability and power (Islam, Khan, Ramayah and Hossain, 2011; Zhang and Adipat, 2005). Notwithstanding, these limitations are gradually being addressed and, hence, m-commerce has a bright prospect as the age of wireless and mobility has become a trend in the twenty-one century (Islam et al., 2011). In addition, in line with the rise of m-commerce and its benefits, many companies have realized that ensuring customer

satisfaction is no easy task, yet it is of vital importance, for its role in building a long-term growth of a business (Nguyen, 2014).

In Vietnam, e-commerce and its effects have been a prominent topic for many researches (i.e. Chong, Keng-Boon Ooi, Lin & Tan, 2010; Tran, 2012; Pham, Pham, & Nguyen, 2011). On the contrary, few researches and studies have been conducted on Vietnam's m-commerce environment, especially on the Vietnamese customer satisfaction on this subject. Although, m-commerce in general is somewhat a new phenomenon in compared to other markets, such as Europe or the U.S, Vietnamese m-commerce market is an exciting and challenging field for research and study. Thus, this thesis' objective is to develop a research aiming to achieve thorough knowledge on this subject. In addition, the research is conducted to identify factors influencing the Vietnamese customer satisfaction in m-commerce and measuring it.

1.2 Research questions

In order to achieve the mentioned objectives, this research aims at answering the following questions:

1. Which factors affect customer satisfaction in m-commerce in Vietnam?
2. Are Vietnamese customers satisfied with m-commerce services in Vietnam?
(The case mainly focuses on Hanoi and Ho Chi Minh City)

1.3 Outline of the thesis

The second chapter is the literature review, which provides a number of theories and previous studies in similar fields. A brief comparison between e-commerce and m-commerce is also made. The definitions of terms, such as consumer behavior or customer satisfaction are brought out to discussion. Besides, this chapter shows some features and challenges of m-commerce, as well as underlines factors that affect customer satisfaction in this major.

An overview of m-commerce in Vietnam's mobile commerce, then, is provided in the following third chapter. In addition, Vietnamese customers' characteristics are presented to the readers.

Next, the fourth chapter deals with research methodology. This section aims to present the research methodology employed to meet the aims and objectives of the thesis, and shows how the method is designed and constructed. Moreover the chapter also explains the way research data are collected.

Then, the data findings, results and discussion in the fifth chapter depict the data that are collected from a survey questionnaire. Likewise, the data are interpreted and a discussion of the outcomes from the research fieldwork is presented.

Lastly, conclusion chapter – the sixth chapter, summarizes the research findings and provides research conclusion. In addition, the chapter indicates the answer for those questions mentioned in Introduction part as well as offering researcher's suggestions.

2. LITERATURE REVIEW

Until now, there are several researches, which have been conducted in customer satisfaction in mobile commerce, and various literature sources are available to study (e.g. Amin, Rezaei, & Abolghasemi, 2014; Choi, Seol, Lee, Cho, & Park, 2008; Lin, 2003). In order to understand about similar fields thoroughly, it is of importance to review related previous studies and to develop a theoretical background for the research. Consequently, this chapter presents some/a definition/s of m-commerce, along with its features and challenges, as well as definition of customer satisfaction. Moreover, how consumer behavior is shaped by m-commerce will be presented. Eventually, the chapter comes to an end with identifying several underlying drivers that have an impact on customer satisfaction.

2.1 Mobile commerce compared to electronic commerce

Electronic commerce, or e-commerce, is the term used to describe any economic activity, such as selling products and services, which occur over the Internet (Chen and Dhillon, 2003; Niranjnamurthy, Kavyashree, Jagannath and Chahar, 2013;). Accordingly, m-commerce can be defined as an extension of e-commerce, since the two terms are similar to each other. They both share fundamental business principles. (Zhang, Chen and Lee, 2013). More specifically, m-commerce is a new type of e-commerce in which all the transactions are connected via handheld devices, and are interacted in a wireless mode (Siau, Lim and Shen, 2001). “M-commerce is not a “better” e-commerce” (Swilley, 2007); however, m-commerce itself exceeds e-commerce in terms of interaction styles, usage patterns, and value chain (Chan and Chong, 2013). Plus, it gives users unlimited access at any location and at any time, meaning there is no constraint on time or geographical location when searching products via mobile devices. With m-commerce, data are transmitted wirelessly between mobiles and computing devices, which enables users to use services flexibly without wired connection requirement (Coursaris, Hassanein and Head, 2003).

2.2 Attributes of m-commerce

As one can see from Figure 1, there are five main attributes of m-commerce highlighted in this research paper, comprising ubiquity (Clarke 2008; Siau, Lim and Shen, 2003;), convenience (Panneerselvam, 2013; Clarke 2008), personalization (Mark, 2000), localization (Clarke, 2008; Junglas and Watson, 2006), and accessibility (Ding, Iijima and Ho, 2004).

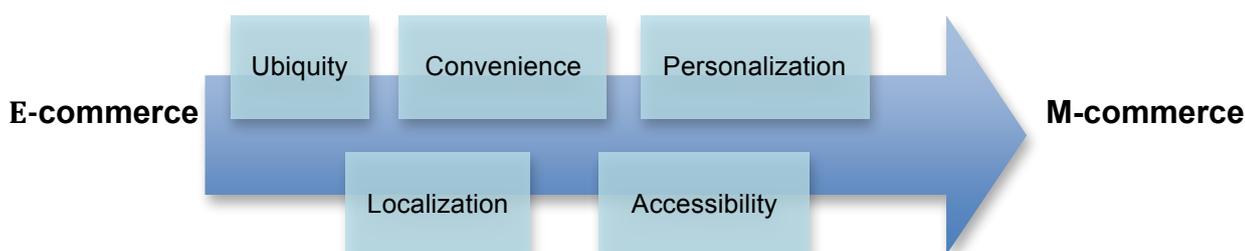


Figure 1. E-commerce transforms to M-commerce

Firstly, ubiquity is a primary advantage of m-commerce (Siau, Lim and Shen, 2003). It is defined as “being invisible or seamless” (Okazaki, Molina and Hirose, 2012). In another words, ubiquity, or omnipresence, is everywhere at the same time that we no longer notice it’s existence (Watson, Pitt, Berthon and Zinkhan, 2002). Indeed, this ubiquity feature allows mobile users to easily receive information, buy a product or require a service from virtually any place independently of the users’ current geographic location. In addition, these devices allow users to access Internet without the need to find a place to plug in; m-commerce users therefore can be present everywhere simultaneously. (Clarke, 2008)

Ubiquity feature allows customers to save time or take less time to complete a particular task, and it helps to increase customer satisfaction (Okazaki, Molina and Hirose, 2012; Nayebi, Abran and Desharnais, 2012). Truly, m-commerce applications enable users to engage in a variety of activities; for example, quickly communicating with friends and family via several mobile messaging apps (Whatsapp, Viber, Messenger, etc.), easily monitoring their stocks (Stocks and Real-time stocks, etc.), conveniently shopping online with several apps and

so on. In addition, those applications provide alert notifications that help users to know about their friends, clients, team members, prospects or any valuable and relevant updates in time. As such, in some careers in which time and location are sensitive, taking advantage of exploiting the omnipresent m-commerce will boost the development of businesses (Clarke, 2008).

Secondly, convenience is a term related to factors that create the agility and accessibility provided by wireless handheld devices (Clarke, 2008). The attribute of convenience allows users to utilize these devices without any obstacles of time and location. Besides, as mentioned by Clulow and Reimers (2009), convenience refers to easy to use, favorable to the comfort or savings of issues.

With the current transmission technologies, i.e., 2G – second generation, 3G – third generation, or 4G – fourth generation wireless telecommunication technologies, m-commerce enables its consumers to be always in touch and connected as well as offer considerable convenience in comparison with the traditional e-commerce (Panneerselvam, 2013). M-commerce users can continue to surf the Internet, to place an order or to operate transactions through many applications while waiting in line or stuck in a traffic jam during rush hours. Also, users can handle more than one device at the same time. For instance, a tablet with bigger screen can be used for shopping online and then a smartphone is to finish the purchasing activity.

Thanks to the convenience of m-commerce, investors avail themselves of various and tremendous opportunities to offer more convenient services, such as sending and receiving emails, instant messaging, faxing and so on. In fact, the service, which is more and more convenient, will increase customer satisfaction and foster customer loyalty. (Clarke, 2008)

Thirdly, as Vic Sasan (n.d.) indicated: *“A wireless device is a very personal device”*. Personalization, thus, is used in the context of supporting individual-based target marketing based on one’s preferences. Personalization involves a procedure of gathering consumers’ information during interactions with them;

then, consumers are taken individually and targeted by “*tailored products*”, “*customer service*” and “*other interactions*” exclusively for each specific consumer. Further, personalization includes several practices of addressing consumers by their own name, memorizing their preferences, allowing them to customize a product for their particular purposes or targeting advertisement based on consumer information. (Wattal, 2007)

Mobile devices, which integrate both communication and multimedia functionality, are typically devices that a sole individual can carry in a pocket or bag. Therefore, mobile devices are somewhat personal devices. People can use their handheld devices to capture pictures, immediately share their personal or eye-witnessed experience to others via social networking applications, or use the devices to store personal information, such as daily reminders or bank accounts information, and so on. In other words, mobile commerce offers opportunities to personalize information and bring appropriate services to a specific customer (Siau, Ee-Peng, 2003).

On a different matter, the evolution of SIM (Subscriber Identity Module) card for mobile devices has also contributed to the growth of wireless applications (Guthery and Cronin, 2002). The SIM is designed for identification and authentication of subscribers to its network providers. It does not only contain a user’s name, phone number and contacts, but also allows users to run applications and make any secure transactions. Such personalization and transaction feeds, through wireless mobile devices, are of importance for increasing customer satisfaction and contributing to long-term success. (Clarke, 2008; Lee and Lehto, 2010)

Fourthly, the Cambridge dictionary online (2015) defines localization as “*the process of making a product or service more suitable for a particular country, area, etc*”. In m-commerce, localization refers to the ability of locating a user’s physical position. Location is one of the most significant advantages and most distinctive characteristic of m-commerce in comparison with e-commerce. Through GPS system, users can receive alert when their friend or colleague is

nearby; likewise, the service providers can quickly track the location of the users. (Clarke, 2008)

With this feature, mobile users can receive information relevant to their current geographic position (Barnes, 2007), for example, nearest restaurants, bus stops or banks. As one might expect, service providers can approach their potential customers easily by offering them appropriate localization services with suitable languages. Location based services, hence, help to meet the customers' requirements (Singh, 2014).

Fifthly, accessibility is the ability to easily access, enter or approach (Perlow, 2006). Accessibility is an attribute that combines convenience and ease of use, because it is easily both to approach and enter, and being reached or obtained. M-commerce provides its consumers with real-time instant messaging or services. Accessibility feature allows users to receive information in a timely manner that could not prove to be useless. Due to the introduction of GPRS, customers now can always in touch, connected, and can have an "*always online*" service (Moshtaghi, 2002). In addition, timeliness in mobile systems guarantees the execution of a number of tasks or requested services will be performed within requested deadlines (Papadopoulos, 2005).

Overall, m-commerce combines the five attributes, including ubiquity, convenience, personalization, localization and accessibility, which make it an advantage over e-commerce. These attributes give mobile users the ability to access Internet and information any time, anywhere, and the ability to know their location or others' position. In addition, these unique attributes of m-commerce are beneficial for businesses; such as it helps to reach customers, suppliers or employees regardless of the location and time (Siau and Ee-Peng, 2003). In a rapidly evolving technology environment, it is somewhat important to conduct further research on m-commerce attributes. In such way, it helps to gain an overall in-depth strength of m-commerce, and to increase competitiveness in the mobile marketplace.

2.3 Challenges of mobile devices

In spite of unique attributes of m-commerce, there are several major obstacles for users using mobile devices, such as “*connectivity, screen size, different display resolutions, and limited processing capability and power*” (Keengwe, 2014; Zhang and Adipat, 2005). These obstacles are illustrated in Figure 2 and will be reviewed below.

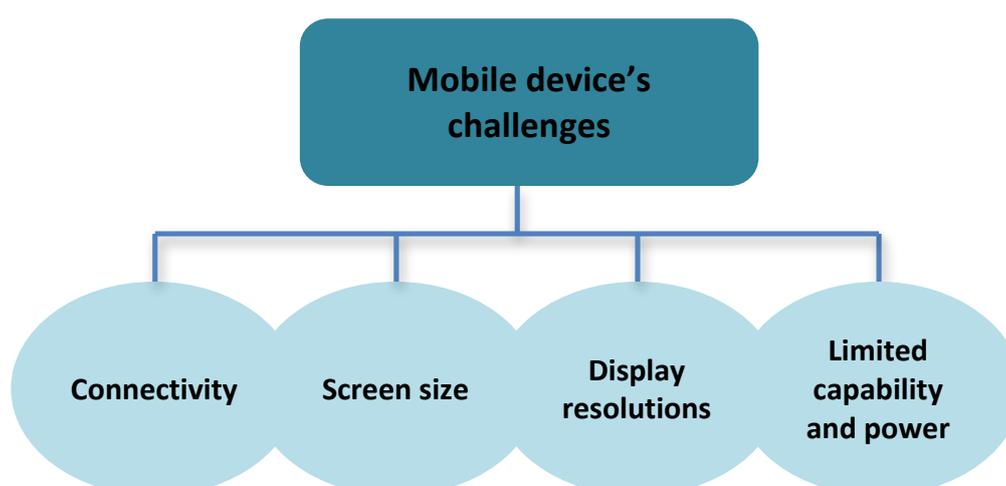


Figure 2. Challenges of mobile devices (Content adopted from Zhang and Adipat, 2005; and Keengwe, 2014)

Firstly, the wireless network connection can vary depending on different factors, including time, day of the week or year, geographical locations, document size, latency and bandwidth. These factors may cause delays to users when they attempt to distribute or access information via their wireless handheld devices. The long delays are, then, associated with “*increased feelings of lost*” and “*negative impression*” for the end users. (Sears and Jacko, 2000).

Secondly, as indicated by Chae and Kim (2004), screen size has a strong impact on the navigation behavior, perception and satisfaction of the mobile’s participants. For example, mobile users who interact with a screen smaller than 4.3 inches screen are said to be less efficient while seeking information (Raptis, Tselios, Kjeldskov and Skov, 2013).

Thirdly, according to Bi (2011), there are a number of advantages of using a large-high resolution display (3840 × 3072, 3840 × 3072 or 3840 × 3072 pixels) that a desktop can bring to its users. These advantages are showing a large amount of information, being viewed by many people simultaneously, reading a large document or paper, increasing users' collaboration abilities, and enhancing the awareness. On the contrary, a mobile device allows much less display resolution (2560 x 1440 pixels or below) that can cause bad impacts on the quality of an image or information that displayed on the screen (Zhang and Adipat, 2005; Bi, 2011; and Kangwee, 2014).

Last but not least, we cannot deny that the memory capacity and power of a wireless handheld device lags behind a traditional desktop computer. Some apps consume much power while they are optimized for performance, or require a large amount of memory, or consume much power that somehow may not be practical for mobile devices. (Keengwe, 2014)

In fact, there are some other challenges of mobile devices also. However, this thesis only focuses on the five challenges (connectivity, screen size, display resolutions, and limited capacity and power). Such challenges can result in prevent the people to utilize mobile devices.

2.4 Consumer behaviour

2.4.1 Consumer behavior: Customer decision-making

An individual's behaviour is not independent from other's thoughts. Indeed, people are influenced by many opinions as well as attitude of people around them. (Eroglu, 2014). Solomon et al. (2013) defines the term *consumer behavior* as a study of individuals or groups and products that help to shape their identities. Another definition of consumer behavior is "*the dynamic interaction of affect and cognition, behaviour, and environmental events by which human beings conduct the exchange aspects of their lives*". (Bennett 1995).

Consumer decision-making goes through three stages, including the pre-purchase stage, the service encounter stage, and post-purchase stage

(Lovelock, Wirtz and Chew, 2008; Tsiotsou and Wirtz, 2014). This thesis's section adopts a three-stage model of consumer behaviour. Figure 3 shows each stage of the model.

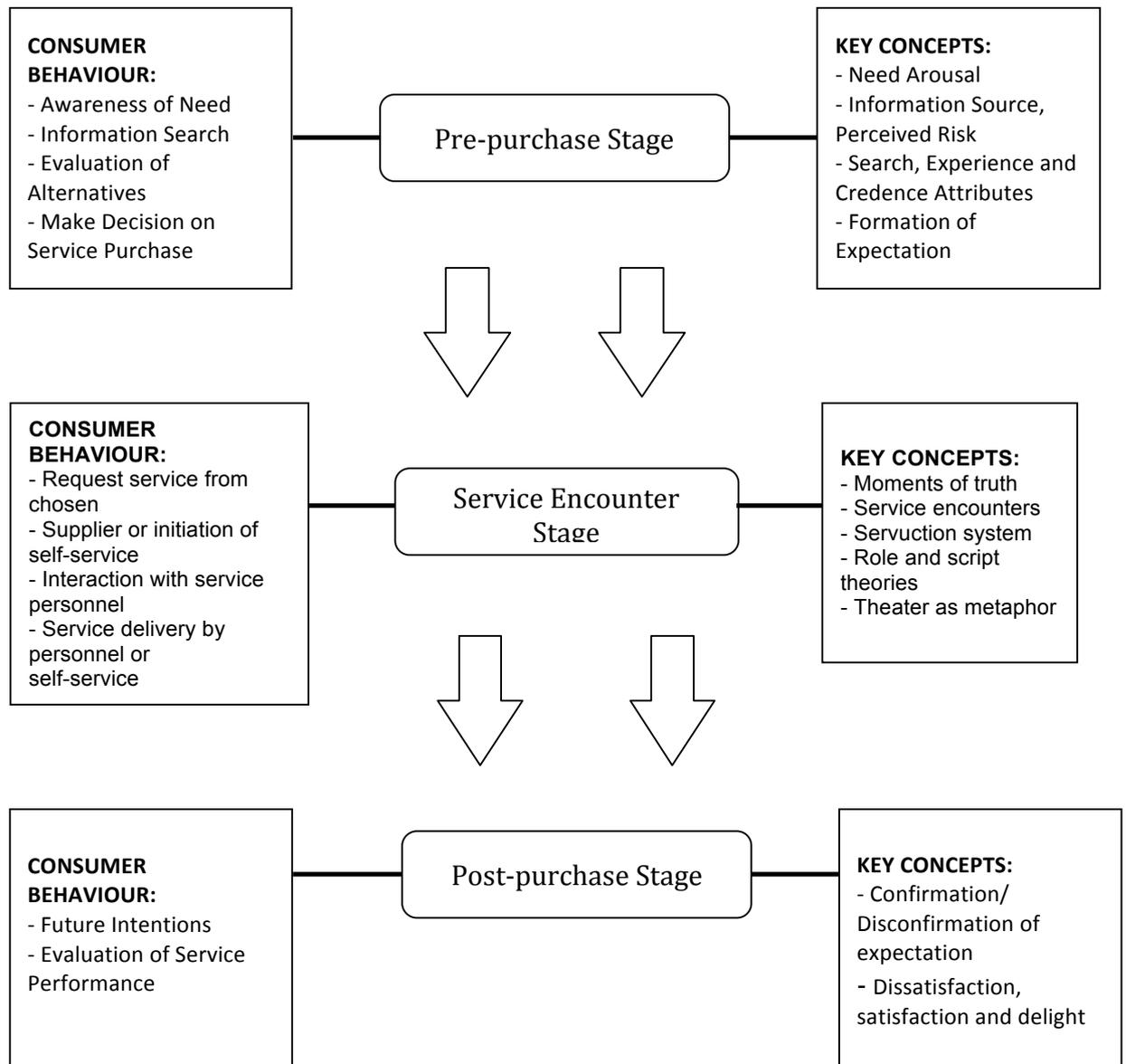


Figure 3. The Three-Stage Model of Service Consumption (Content adopted from Lovelock, Wirtz and Chew, 2008; and Tsiotsou and Wirtz, 2014)

The pre-purchase phase comprises a set of factors and activities (Tsiotsou and Wirtz, 2014). In this phase, the four steps of behaviour are listed, beginning with awareness of need, information search, evaluation of alternatives, to make a decision on whether to buy a service. Consumers are triggered by a need

arousal. They are then motivated to start searching information to find solutions for the need. There are several ways for consumers to gather information, such as seeking information from friends, family or using the Internet to compare services, reading reviews and ratings from trusted or good reputation websites, etc. (Boshoff, 2002; Bitner and Zeithaml, 2003; Lovelock and Wirtz, 2008; Tsiotsou and Wirtz, 2014). Several alternatives may come to consumers mind and they evaluate these alternatives. After the process of evaluating, customers ready to make a final purchase decision and move on to the next phase: the service encounter.

The service encounter stage is a period of time when consumers interacts directly with a service company (Lovelock and Wirtz, 2008). As stated by Tsiotsou and Wirtz (2014), “service encounters are complex process” that can shape customers’ expectations (Coye, 2004), satisfaction, loyalty, repurchase intentions and word-of-mouth behavior (Bitner, Brown and Meuter, 2000).

After service encounter stage, the next stage is post-purchase, or the post-encounter stage. In this stage of the service consumption process, customers evaluate the service performance they have experienced and compare it with their prior expectations. On one hand, if their expectations are not met or exceed, the customers are likely to be dissatisfied with the service. On the other hand, they are likely to be satisfied when the expectations are met. In addition, customers’ behavioural responses of a satisfied customer are different from a dissatisfied one. When customers are satisfied, they may purchase the service again, remain loyal or make recommendations to their friends, etc. Conversely, when customers are less satisfied, they may complain about poor service quality, lose trust, exhibit negative word-of-mouth, switch service provider, etc. (Lovelock and Wirtz, 2008)

2.4.2 Consumer behavior in M-commerce: Impact of Internet advertising

A mobile device - that can access the Internet, impacts an individual’s behaviour. It either directly or indirectly affects human physical actions, and the impacts can happen in a significant way. It has influenced the way a customer

searches and purchases products, conducts any transactions, plans or carries out activities, communicates and interacts with others; and entertains (Mennecke and Strader, 2003). Indeed, for example, on one hand, customers would have to be present physically at a particular store to order, buy or pay for anything in a traditional way. Besides, mobile commerce allows its users to shop or pay at their discretion, regardless of time and geographical location. Thus, mobile users only need to install mobile applications that can access to numerous services, such as mobile banking, shopping, or communicating, and so on.

Understanding consumer behavior is a crucial factor for all marketing activities. It goes without saying that if marketers understand consumers' behavior patterns, including how consumers make decisions to buy a product as well as utilize it, etc., they might better know who to target at. The marketer can provide relevant information about a precise product at a precise time accordingly. Furthermore, marketers are able to influence consumer emotions and thoughts by taking advantages of appealing communication and sparkling images for a pleasant shopping experience. Therefore, consumer behavior helps to make marketing activities more and more successful. (Swarbrooke and Horner, 2007)

Among variety of marketing tools, advertising is considered as a major tool for creating product awareness in the mind of a potential customer (Niazi, Siddiqui, Shah, & Hunjra, 2012). According to Niazi, Siddiqui, Shah, & Hunjra (2012), advertising is "a way of communication to convince an audience for taking purchase decision about a product or service and deliver information to viewers". Besides, the use of the Internet as an advertising tool is very useful, since it helps to reach customers without any limitation of time and space. Eroglu (2014) stated that Internet eliminates any geographic boundary as well as "ensure users have more information with much less time and cost".

Nowadays, the world is witnessing profound alterations under the influence of m-commerce (Fong and Wong, 2015). Likewise, advertising can influence the customers' mind, attitude and purchasing behavior, in order to gain and keep customers' interest in the products or services and take an eventual purchase

decision. (Niazi, Siddiqui, Shah and Hunjra, 2012). The marketers, then, take advantages of this tool of marketing by serving online advertisings for any mobile users while these users are surfing the Internet. In addition, Mendelson and Bolls (2002), as summarized by Abideen and Saleem (2011) also argued that advertisings exposure can lead to cognitions; this means *“memory about the advertisement, the brand; which in turn leads to attitudes, i.e. Product liking and attitude toward purchase; which in the end leads to behaviors, like buying the advertised product”*.

2.5 Customer satisfaction

Customer satisfaction, as noted by Tahir, Waggett and Hoffman (2013), is *“a customer’s perspective based on expectation and then subsequent post purchase experience”*. In other words, it is an evaluation of products or services’ quality level that meets or exceeds the customer expectations. The term *customer satisfaction* has been on the markets for a long time. In fact, many researchers and academicians emphasized that it is a key element for a company’s success in the market as well as a crucial factor for company’s survival as it has a positive effect on company’s profitability. (Novikova, 2009; Angelova and Zekiri, 2011)

It cannot be denied that a satisfied consumer has a tendency to buy more than a less satisfied one. In a highly competitive market, customer satisfaction is, indeed, a crucial key that builds strong and long-term relationships between the customers and the firm. The measure of customer satisfaction, therefore, has become a vital concern for many companies and services providers to achieve such success. (Mohammad, 2012)

2.6 Drivers affecting customer satisfaction in m-commerce

2.6.1 Service quality

Quality has become a part of our daily lives. It has received high attention by many firms and customers. While customers keep looking and expressing their desires for quality products or services, firms consider quality as a key strategy

to develop products and services in order to gain competitive advantages (Ali, 2013).

Customers' perceived service quality varies from one to another due to different aspects of service quality. Service quality is judged by the customers, and it depends on how the customers approach the service, because the starting point of using a service is the basis of their perceptions. Quality of a service is achieved when a service provider satisfies or exceeds their consumers expected service, which consequently leads to customer satisfaction. (Seth, Deshmukh and Vrat, 2005)

Early conceptualization of service quality was developed and popularized by Christiaan Grönroos (1982). In his model, the overall perception of service quality is presented as the final result of an evaluation process, in which the consumer compared their expectations of quality and their experiences of quality. The Grönroos's model of functional and technical quality is illustrated in Figure 4.

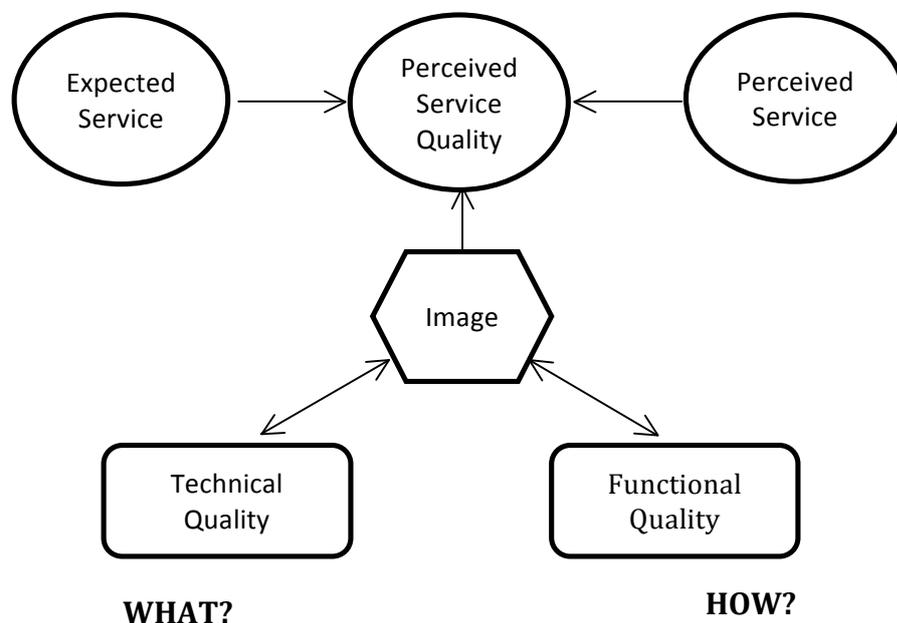


Figure 4. Technical and functional quality mode (Grönroos, 1984)

Grönroos (1982) argues that service quality, as recognized by consumers has three dimensions; they are a *functional dimension*, a *technical dimension* and

company image. Functional quality answers the question “how” the service is provided to its customers, while technical quality focuses on “what” service is delivered to its customers. “How” can be referred in terms of *process quality*, which means the evaluation during the service performance, and “what” is related to *output quality*, meaning the evaluation after the service performance. The third factor, image, is formed by technical and functional quality and is likewise affected by some external factors, such as word-of-mouth, marketing communication, pricing, and customer needs, etc. Moreover, it creates favorable attitudes to the service providers. Accordingly, measuring service quality should include these attributes in order to attain high predictive validity of service quality. (Kang, 2006; Rahma, Khan, and Haque, 2012)

2.6.2 Mobile technology quality

One of the most prominent and well-known research models that related to adoption and use of new technologies is the technology acceptance model (TAM), which was originally proposed by Fred Davis in 1986. The model is used to assist in interpreting and anticipating users’ behavior towards technology. Later, Davis’ TAM was enhanced further by Bagozzi and Warshaw (1989); then, the enhanced model was found to be a feasible tool for early user acceptance as well as a tool to identify and evaluate enhanced user acceptance strategies. (Park, 2009; Kurz, 2012). Figure 5 depicts the TAM of Fred Davis.

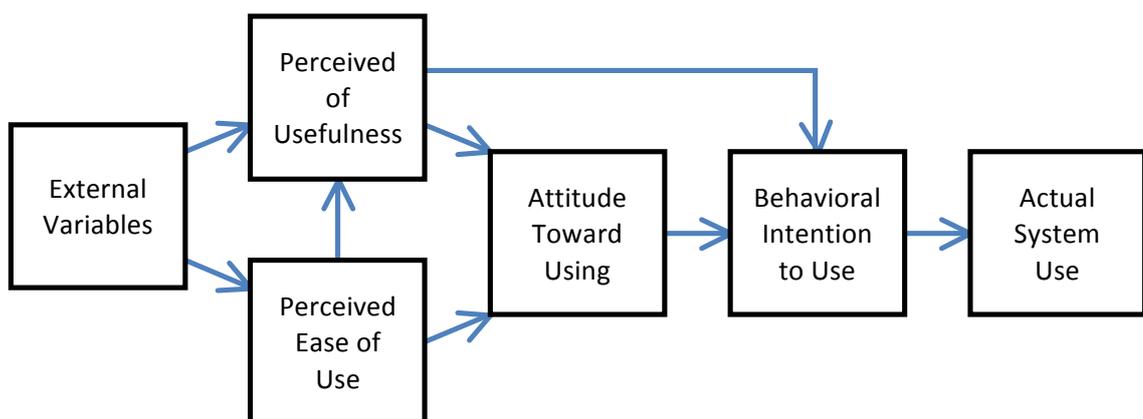


Figure 5. The Technology Acceptance Model (Davis, 1989)

As noted by Davis (1989), there are two important cognitive beliefs posited by TAM affecting an individual's acceptance behavior, namely *perceived usefulness* and *perceived ease of use*. To put it differently, these elements are directly related to one's attitudes and intention towards utilizing computer technologies. In addition, external elements also influence intention and actual use via "*mediator effect*" on perceived usefulness and perceived ease of use (Park, 2009).

According to Davis (1989), on one hand, "perceived usefulness as the degree to which a user believes that using technology will increase his/her job performance". On the other hand, "perceived ease of use is the degree to which a user believes that using technology is free of effort". (Davis, 1989, p.320)

Davis (1989) showed that the impact on customer intention of use of perceived usefulness is stronger than that of perceived ease of use. Indeed, users firstly are impressed of the application functions performed for them, and secondly concern on how easy or difficult to make the system to operate those functions (Gong, Su and Yu, 2004). Nevertheless, both perceived usefulness and perceived ease of use have considerable impacts on the satisfaction of consumers (Amin, Rezaei and Abolghasemi, 2014). As already mentioned, m-commerce allows users to easily perform transactions, make payment, search for shopping information or entertain themselves anytime they want and no matter where they are.

2.6.3 Trust in m-commerce

Consumer trust is a critical factor in m-commerce adoption and somewhat essential in building a relationship. The benefit of consumer trust is that it builds strong and long-term of one's commitment to the firm. (Shams-Ur-Rehman, Shareef, and Ishaque, 2012). Lin, Wang, Wang and Lu (2014) asserted that the definition of trust is a complex construct and can widely vary from different perspectives, such as: psychology, economics or marketing, sociology and so on. However, Mayer, Davis and Schoorman (1995) had an integrated definition for trust as "*the willingness of a party to be vulnerable to the actions of another party based on the expectation that the other will perform a particular action*

important to the trustor, irrespective of the ability to control that other part". According to them, despite of the situations of perceived susceptibility and vulnerability, or any uncontrolled situations may happen, trust should lead the consumers to a willingness to take risks, or accept vulnerability (Mayer et al, 1995).

There are two different phases of trust with a clear distinction between them: *pre-use trust*, which belongs to *pre-purchase stage*, and *post-use trust*, which belongs to *post-purchase stage*. The former one means trust before the use of a technology or a service; conversely, the latter means trust after using the technology or service. (Lin, Wang, Wang and Lu, 2014).

Pre-purchase stage

Researchers have found that pre-use trust may impact the intention and behavior of consumer's purchasing decisions, both directly and indirectly via mediators (i.e., via perceived risk and perceived benefit). First, trust directly influences customers' willingness to conduct transactions that take place in virtual networks. In the context of m-commerce, transactions are made invisibly, leading to the violation of transactional obligations might occur. In another words, consumers are often worried that the selling parties can defraud them. However, as mentioned above, trust enables an individual to engage in online transactions despite the presence of risks. (Kim, Ferrin, and Rao, 2009; Lin, Wang, Wang and Lu, 2014)

Second, indirect effects of trust operate through *perceived risk* and *perceived benefit*. On one hand, *perceived risk* is defined as a "subjective expectation loss" and regards the consumer's anxiety about whether the selling parties will adhere to their obligations. Accordingly, it appears that the perceptions of risk will discourage consumers to conduct transactions through mobile devices. Nevertheless, a high level of trust will reduce perceived risk and uncertainty; in contrast, a low level of trust will lead to high level of perceived risk, which means, consumers are always concerned that seller parties would refuse their responsibilities. (Kim, Ferrin, and Rao, 2009; Lin, Wang, Wang and Lu, 2014)

On the other hand, *perceived benefit* refers to subjective perceptions of potential positive consequences. Consumer can save their efforts by purchasing online, due to the convenience of mobile commerce. Indeed, it is easy for them to gather a great deal of information about the product or service from providers, manufacturer, other consumers' reviews as well as competing products and services. In fact, consumers cannot do these actions while they are at a physical store because the only information they get is provided by the store itself. Therefore, online shopping can offer significant perceived benefits, and perceptions of benefit provide potentially strong motivation to buy and use a product or a service. (Kim, Ferrin, and Rao, 2009; Lin, Wang, Wang and Lu, 2014)

Post-purchase stage.

Kim, Ferrin and Rao (2009) noted that this stage is somewhat different from the first stage due to the substantial experience that consumers have with the products they already purchased. After completing the purchasing action, customers can confirm their expectations via a post-purchase evaluation process. Specifically, customers will evaluate the product or service by comparing the prior expectations with the actual performance of the product or service as perceived after its consumption. This process has a considerable impact on customer satisfaction. Furthermore, customer satisfaction enhances post-use trust, which in turn influences future usage, including repurchase decisions. Truly, if a customer satisfied with their online transactions they are likely to conduct more similar transactions in the future. (Kim, Ferrin, and Rao, 2009; Lin, Wang, Wang and Lu, 2014)

It is difficult to gain trust, since there are numerous uncertainties and risks in the mobile environment (Siau et al., 2003), though trust is crucial because of its direct impact on customers' willingness to purchase. Mobile services are depended heavily on cellular networks and mobile devices; hence, it makes mobile services offer some exclusive features, such as: mobility, ubiquity and go on. However, there are some restrictions of the mobile communication networks and the mobile devices themselves, including '*slower speed, simpler*

functions, small screens and network instability', causing more and high uncertainties and risks. (Giovannini, Ferreira, Silva, and Ferreira, 2015). As written by Siau et al. (2003), there are a number of factors that create impacts on trust in m-commerce, comprising of technology and reliability of wireless services, technology of mobile devices, m-commerce websites and its usability, trustworthiness of product/service vendors and other factors.

Building trust takes time, because it is a constant process that includes many stages (Sharif et al., 2014). As seen in Figure 6, it is created through the psychology of consumers emotionally and rationally.

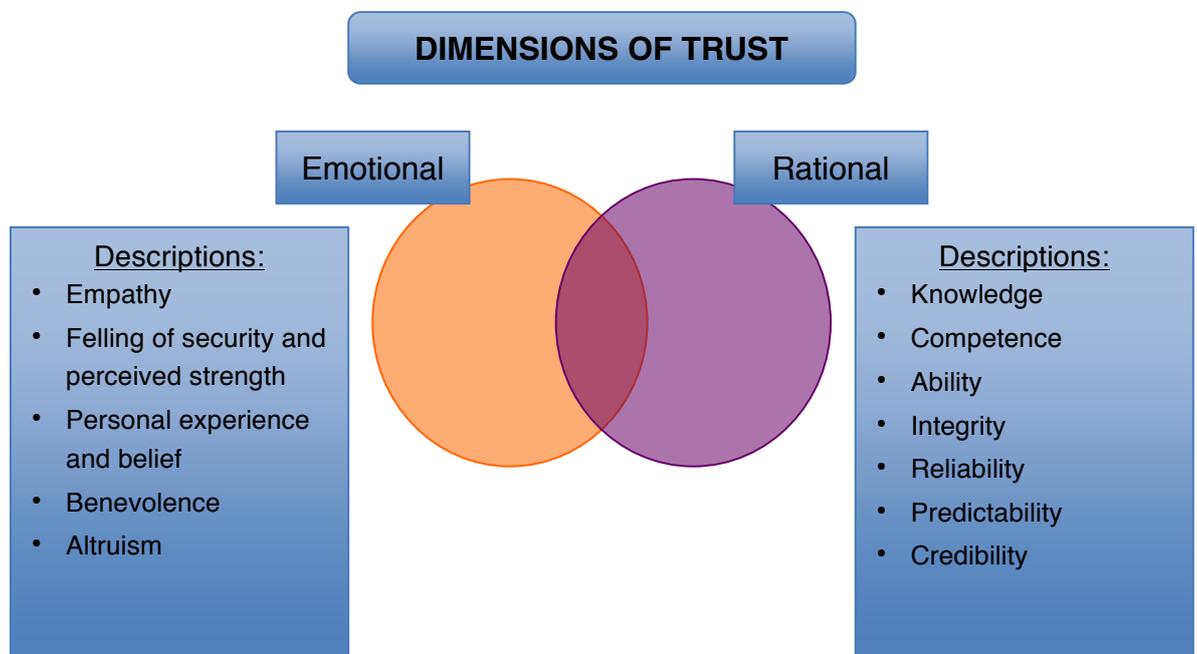


Figure 6. Dimensions of Trust (Modified from Halliburton and Poenaru, 2010; Bleuel, 2011)

Emotionally or emotional trust, it is where one feel confidence that he or she can unmask the vulnerabilities to others with the belief that they will not have benefit of its openness (Sharif, Shao, Xiao, and Saif, 2014). Bleuel (2011) indicated that emotional trust has the following aspects: empathy, feelings of security, benevolence, good will, personal beliefs and altruism. While, rationally or rational trust, it is where a customer can estimate the proportion of advantages and disadvantages, then give a conclusion to rely upon a service

carrier (Sharif et al., 2014). Rational trust includes the following aspects: knowledge, competence, ability, reliability, predictability, creditability and dependability (Bleuel, 2011).

3. AN OVERVIEW OF M-COMMERCE IN VIETNAM

3.1 M-commerce in Vietnam

Vietnam - a sub-tropical country in ASEAN (Association of Southeast Asian Nations) with the population of approximately 93 million people (in 2014) - is ranked 14th, 8th and 3rd of the most populous country in the world, Asia and ASEAN, respectively. There has been an upward trend in the number of Vietnamese people using wireless handheld devices to access the Internet as well as the number of smartphone sales. According to a report by IDC (2015) in 2014, the number of smartphones sale in Vietnam rose by 57% (28.7 million mobile phones). The report also stated that the quantity of smartphone shipment would continue to increase for at least the next five years. Likewise, the number of people using these devices in 2010 accounted for merely 27 percent of the population; however, it increased to more than around 65 percent of that in 2011. In 2014, the country had over 130 million mobile subscribers, meaning every Vietnamese owns an average of 1.45 mobile phone SIM cards. (VECITA report, 2014)

Mobile devices connected to 3G networks has become more and more popular. Statistics from Vietnam E-commerce and Information Technology Agency – Ministry of Industry and Trade (2014), referred as VECITA, shows that there were 27.5 million 3G subscribers in Vietnam in 2014, which was 7.8 million more than that in 2013. It is easy for mobile consumers to access Internet flexibly in the country, since 3G network is available almost everywhere, especially in the urban areas, and the services are cheap (ICT News, 2015). For example, a customer can purchase 3G service for only VND 70,000 (approximately to 2.78 euro), with 600MB and enable high-speed access to the Internet, via MobileFone – a Vietnamese mobile service provider (MobileFone.vn).

Nevertheless, mobile payment service is considered a rather new service for Vietnamese customers, though many banks and other service providers have made efforts to established online payment system. Still, the development of

mobile banking in the country is in its early stages, the system is weak and incomprehensive (Hoang Thi and Swierczek, 2008).

3.2 The regulatory framework for m-commerce in Vietnam

At the moment, there is no specific official letter that stipulates management of m-commerce. Instead, as a part of e-commerce, m-commerce is currently regulated under some e-commerce laws listed below.

Firstly, in December 2014, Vietnam Ministry of Industry and Trade promulgated **Circular No. 47/2014/TT-BCT** stipulating *the management e-commerce websites*, the circular came into effect in the 1st January 2015. This circular is issued towards the responsibilities of online trading companies for a better protection for customers' benefits. Accordingly, owners of online shopping website, including traders, organizations and individuals, bear responsibilities for executing procedures for notifying and registering e-commerce websites.

Secondly, **Decree No. 52/2013/ND-CP**, referred to as "Decree 52", dated 16 May 2013 on *e-commerce* came into force on 1st July 2013, in order to revoke Decree No. 57/2006/ND-CP, which was issued in 2006. Decree 52 was the very first regulation dealing with online transactions in Vietnam. In spite of its limited content on online transactions and responsibilities of website operators in electronic commerce, it is aimed to develop e-commerce operation and improving competitiveness for investors.

Thirdly, **Decree No. 72/2013/ND-CP**, regulating *the management, supply and use of Internet services and network information*, is effective as of 1st September 2013. This decree places tighter requirements for foreign entities that wish to provide Internet service in Vietnam.

Lastly, Law **No. 51/2005/QH11** on *e-transactions* was passed on 29th November 2005 and entered into effect on 1st March 2006. This law provides regulatory related to e-transactions in business and commercial activities.

Generally, in Vietnam, the level of legal awareness differs significantly by income and region. The level of legal knowledge of people who live in rural and

mountainous areas is lower compared to those living in urban areas. Likewise, higher income levels people seem to have higher level of legal awareness. (Sidel, 2008)

3.3 Vietnamese customer characteristics

VECITA report (2014) revealed that 34 percent of Vietnamese use mobile devices to access the Internet. Moreover, the time they spend online via these handheld devices accounted for a third of their total online activity per day.

However, according to a report by Ericson (2014), *“when it comes to the use of and interest in mobile money transfer services, awareness, interest and usage are rather low in Vietnam”*. The report showed that the proportion of people who have used wireless devices to transfer money is merely 1 percent. It cannot be denied that, the number of people using mobile devices to make transactions is rather low, despite of the large number of smartphones sales in Vietnam. As mobile devices has been gaining popularity in this country, concerned questions are emerging. Why Vietnamese users do not make purchase via smartphones? Is it because of technology or the quality of the service that prevent users perform transactions via mobile devices? Do users trust the mobile service providers? Overall, are they not satisfied with m-commerce in Vietnam? The next chapters of this paper will provide an empirical study that can clear up these queries.

4. RESEARCH METHODOLOGY

This chapter will discuss the research methodology that was used for the thesis. Specifically, the choice of method, research strategy, design of questionnaire, sampling technique, process of data collection will be presented in order to support and answer the research questions, which are:

1. Which factors affect customer satisfaction in m-commerce in Vietnam?
2. Are Vietnamese customers satisfied with m-commerce services in Vietnam?

4.1 Selection of the research method

The main purpose of this research is to measure customer satisfaction in m-commerce, particularly in Vietnam. This study requires the collection of data from a wide range of Vietnamese customers who are currently participating in mobile activities. It is thus suitable with the design of quantitative methodology, which can attain insight from customer's perspective. Quantitative research is fundamentally about collecting numerical data from a large amount of involved respondents (Saunders et al., 2009). Being associated with deductive method, quantitative method is aimed to explain, test or verify a specific phenomenon or a hypothesis empirically by a set of data (Saunders et al., 2009).

4.2 Research strategy

A questionnaire was developed to collect primary data. More specifically, the type of self-administered questionnaires, which was self-completed by respondents (Saunders, et al., 2009), was chosen to carry out the research. According to Saunders et al. (2009), the survey strategy is popular and common in business, as it does not only allow the collection of a large amount of information, but also "allows you to collect quantitative data which you can analyze quantitatively using descriptive and inferential statistics".

4.3 Questionnaire design

The questionnaire was created in English and translated into Vietnamese language, since majority of potential respondents were Vietnamese people – who were living in Vietnam. The questionnaire was structured into three main parts. The questionnaire also included a cover letter, in which the purpose was explained to all readers.

At first, there were questions aimed to gather some demographic information of respondents, namely gender, age, average income per month and average time spending on mobile devices per day. Accordingly, the data collected show characteristics of the research's respondents.

In the second part, several close-ended or forced-choice questions were asked in order to explore customer activities and customer behavior towards mobile devices. More specifically, this part of the questionnaire presented one type of close-ended questions, which was the list question. This type of questions offers a list of alternative answers from which the respondents are instructed to choose (Saunders, et al., 2009). They can select the most appropriate answer for them, or select more than one answer that suit them best. This type of questions is usually quicker and easier to response, since it requires minimal writing activity (Saunders, et al., 2009). The response categories used in the questionnaire vary and include “Yes/No” and “Agree/Disagree”, along with “Have not used” and catch-all category of “Other”.

The last part consisted of close-ended questions, in which rating questions were asked in order to measure the level of customer expectation or satisfaction. Saunders et al. (2009) stated that this type of questions utilizes the Likert-style rating scale. In another words, respondents were asked how strongly they agree or disagree with a series of statements related to mobile service quality, mobile technology and trust. A five-point Likert scale was utilized in this part, with 1 meant extremely disagree and 5 meant extremely agree.

4.4 Sampling technique

This research attempted to focus on Vietnamese who own and use mobile devices. The target population therefore was Vietnamese mobile customer inhabiting in Vietnam; the type of non-probability sampling, or non-random sampling, was applied to collect data for this research.

Du (2005), as summarized by Luo, Xu, Kang, and Yang (2009) written that “non-probability sampling is that wherein samples are extracted with subjectivity and voluntary participation”. This type of sampling is conducted to arbitrarily get data from anyone who has experience with smartphones and/or tablets. In addition, non-probability sampling technique is quick, inexpensive and convenient (Saunders et al., 2009). Although the researcher acknowledges that this method of sampling has the limitations of time and financial resources, and no possibilities for statistical generalization, it was selected because it was the most practical for this research. Among the methods of non-probability sampling technique, self-selection method was chosen. The questionnaire was put online and authors’ friends as well as anyone in those friends’ company were invited to take part in. Likelihood of sample being representative was low, and the samples could present homogenous characteristics due to the self-selected cases.

4.5 Pilot test

According to Saunders et al. (2009), there should be a pilot test carried out before officially distributing the questionnaire to participants. It is indeed one of the crucial factors of a successful survey operation, which can lead to good survey data. The main purpose of a pilot test is to refine the survey questionnaire so that the participants could answer the questions smoothly, and have no problem in understanding them. Moreover, the pilot test can provide ideas or clue that a researcher might not have foreseen before conducting it. (Saunders et al., 2009)

For those reasons, the questionnaire was pre-tested with ten persons, who were at different ages and were the users of m-commerce. To be more specific,

the questionnaire was sent to and filled by a group of the author's friends after they were introduced and explained about the research. Next, they were asked whether or not they found any problems in understanding and responding to the questions. The questionnaire was reviewed by the author, and then tested again. After repeating this process seven times, some wording mistakes and lack of specific explanations were found. Accordingly, appropriate adjustments were made to the final questionnaire in order to make it more clearly and understandable to respondents. The final questionnaire being launched in the main survey can be found attached in Appendix 1.

4.6 Data collection

Both primary and secondary data were utilized in this research. As aforementioned, primary data of this research were obtained directly via a questionnaire, while secondary data were based on a large amount of trustworthy materials and documents, such as books, journals, reports, newspapers and the like.

The website of official questionnaire was opened for one week, launched on 22nd September 2015, and closed on 29th September 2015. It was distributed in various ways, such as through e-mail, private message or social networks. Overall, there were 190 sent questionnaires. Out of 190 responses, 78 respondents did not complete the questionnaire properly or they were busy to complete it. Only 112 responses were acceptable, which presented 58.94% of the total respondents.

4.7 Reliability, validity and possibilities for generalization of the research

Reliability and validity are the ways to measure the stability and quality of the data obtained. First, reliability refers to consistency of the result, in which measurements are repeatable – when different survey's participants perform the measurements on different occasions and under different circumstances. In another words, there is a concern that whether or not the questions produce consistent findings at different times and under variety of conditions. Second,

validity refers to the meaningfulness of research components. In another words, it describes the relevant of the research to what it is intended to measure, leading to whether the results can answer the research questions. (Drost, 2011; Saunders et al., 2009).

In order to avoid the event that the respondents would feel inconvenience to answer the questions, a specific time frame for the survey questionnaire was set. The reason for that is to create a flexible time for respondents, so that they could find an opportune time to answer the questions in a concentrated way. Moreover, this manner helps to avoid the situation when some participants drop out of the studies due to lack of time. The design of questionnaire was considered rigorously in order to ensure that respondents would not misunderstand the meaning of each question. Likewise, the questionnaire was conducted online and the author ensured the anonymity and confidentiality of all respondents. Plus, it was tested and retested several time as aforementioned, as well as it was strictly followed. Besides, the research was based on a wide range of trustworthy sources and data collected were compatible to what the author had researched.

Generalizability is referred as external validity to which the research results are applicable to other circumstances (Saunders et al., 2009). In fact, the questionnaire was dispersed in various regions of Vietnam. However, it was not distributed equally in Vietnam due to time and resource constraint of the research. In addition, majority of the author's friends and acquaintances live in the largest metropolitan areas such as Hanoi and Ho Chi Minh City with populations greater than 7 million. As 112 respondents occupy quite small portion, the results are inability for generalization to the population. Nevertheless, the results from this thesis may provide directional information that leads other researchers to relevant customer base. Accordingly, the researchers are enabled to experience the case (customer satisfaction in m-commerce) in different aspects, and they may discover new ways to approach it (the case). Such results can lay a base for the future studies.

5. DATA ANALYSIS

This chapter translates all data collected from the survey questionnaire, analyses the data and discusses the result findings in connection with the researched theories. Among 112 survey respondents, there are 95 persons admitted that they have conducted monetary transactions. Therefore, there will be two groups of respondents, including a group of the customers who have done transactions (95 persons) and a group that includes all the customers (112 persons). To be more precise, participated customers who have not done monetary transactions are allowed to skip questions related to monetary transactions in the survey. The data collected from both groups of respondents are analyzed separately.

5.1 Background of the research sample

The questionnaire was carried out in many places in Vietnam, especially in the two largest urban areas, Hanoi and Ho Chi Minh City. Among 112 valid responses received, 57.1% were female respondents, and 42.9% were male respondents, as shown in Figure 7.

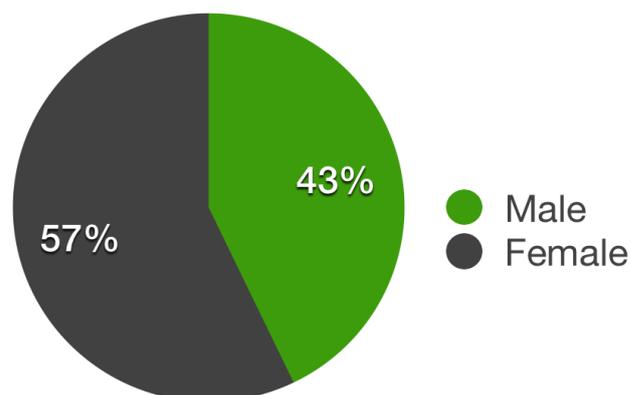


Figure 7. Respondents' gender

The respondents consisted of various age groups (Figure 8) and were different in the monthly average income (Figure 9). The questionnaire was designed to focus on the workforce in Vietnam, which was divided in several age groups ranged from 18 to 55 and above years old. These people were the ones who

could earn money and had certain knowledge as well as experience on m-commerce. Below is figure 8 shows the respondents' age.

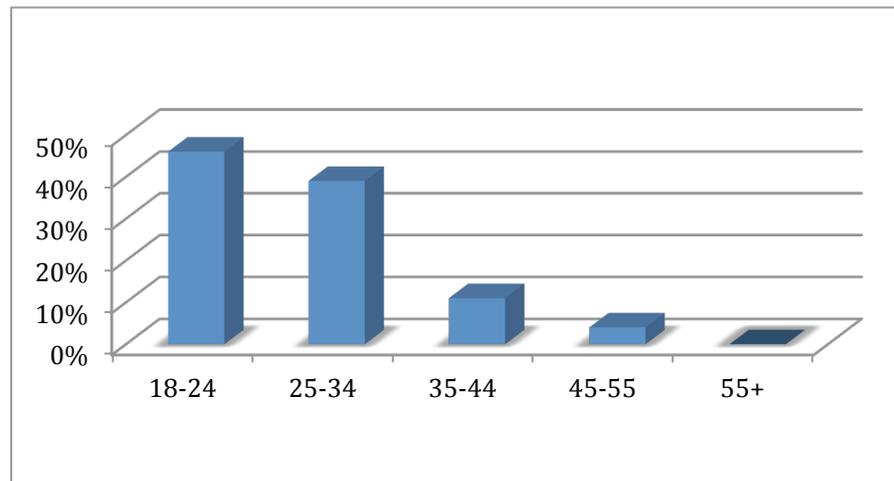


Figure 8. Respondents' age

Out of the total respondents participating in the survey, young adults taking up the major part in answering the survey questionnaire with 46.4% were at the ages between 18 – 24 years, which occupied for the highest proportion. Following by 29.3% between the ages of 25 – 34 years, 10.7% between the ages of 35 – 44 years, 3.6 % between the ages of 45 – 54 years, and no one was at the ages of 55 years and above. It seems that over 55 years old people are slower in adopting and using smartphones or tablets. These devices and their functions and utility might be challenges for them to utilize, leading to the result of no response from this age group. Besides, younger adults are often a significant demographic for research (McCloskey and Leppel, 2010), since these people can easily embrace new information technologies, and use mobile devices widely for their daily activities.

Respondents' income was ranged from lower than 5 million to more than 30 million VND per month. Figure 9 showed the proportion of average income of the respondents.

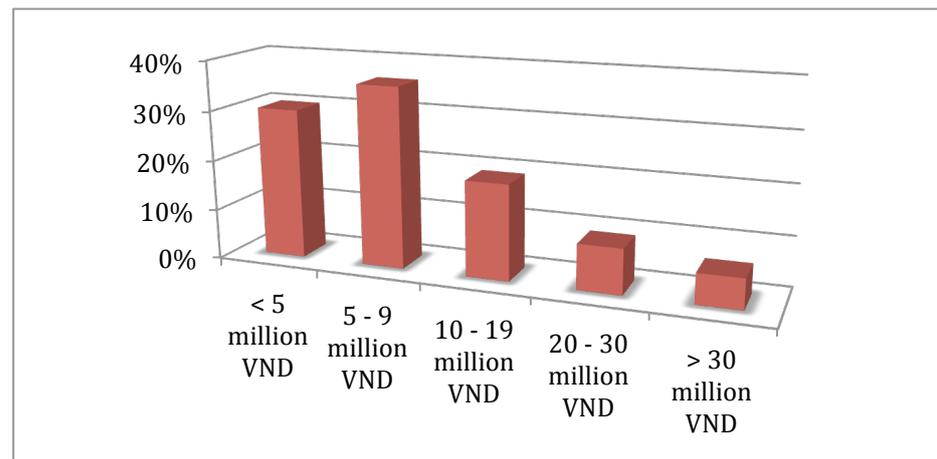


Figure 9. Respondents' monthly income

Respondents' income level was as follow: 30.4% received less than 5 million VND per month (equivalent to roughly 198 euro), 35.7% earned between 5 – 9 million VND (around 198 - 356 euro), 18.8% earned between 10 – 19 million VND (around 395 – 752 euro), 8.9% earned between 20 – 30 million VND (around 791 - 1187 euro), and merely 6.3% received more than 30 million VND per month. Varied income levels can determine different quantities and quality of products or service. In addition, as mentioned in section 3.2, in comparison with higher income people and lower ones, the former ones seem to have higher level of legal awareness than the latter ones. It is clearly from the figure 9 that the number of the low-income-respondents (less than 10 million) is higher than that of the high-income-respondents. Accordingly, the majority of respondents might lack of awareness of legal rights; as a results, they might feel less safe when using mobile devices for online activities.

As for the criterion of average time spent per day with mobile devices, most respondents admitted that they spent around 2 to 4 hours with these handheld devices, making up 34.8% of the total. This is followed by the group of people that spent 4 to 5 hours, which accounted for 22.3%. Moreover, there are slightly differences among the percentages of mobile user spent less than two hours (15.2%), between 6 – 8 hours (14.3%) and more than 8 hours per day (13.4%). Figure 10 showed statistics from this criterion.

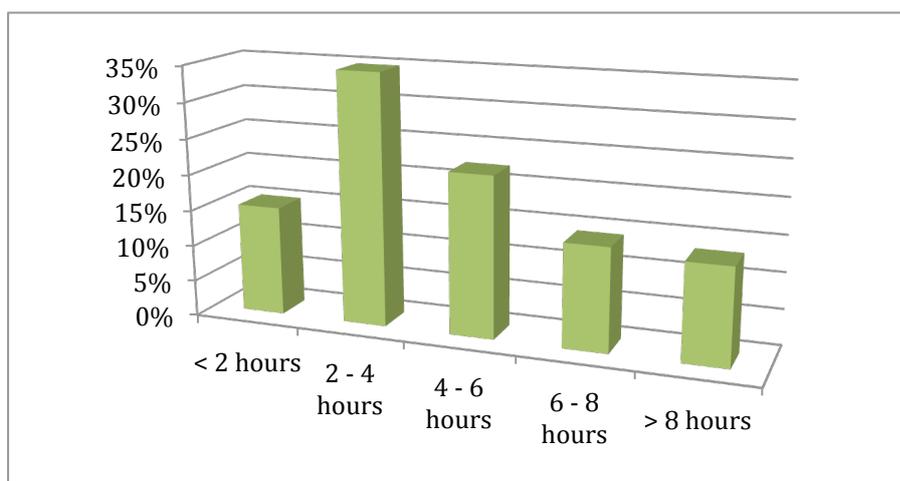


Figure 10. Average time that respondents spent per day with mobile devices

As aforementioned in section 3.1, there is a trend on m-commerce in Vietnam. To be more specific, the number of people using mobile devices has increased recently. In accordance with that, the group of descriptive statistics above indicates that the sample subjects have spent considerable time on mobile devices, including smartphones and tablets.

5.2 Respondents' activities and behavior towards m-commerce

The following section is designed to explore customers' frequent activities with mobile devices. The top inhibitors for m-commerce and favorable attributes of m-commerce are described in this part. Vietnamese customers' behavior towards these wireless handheld devices is also discussed. More importantly, the factors that most affect customers when using mobile devices are portrayed.

At first, the participants were asked to choose top three frequent activities performed with their smartphones or tablets (Figure 11). As a result, communicating with friends/family and searching for information on the Internet accounted for the largest numbers, 97% and 93%, respectively. Meanwhile, the percentages of people who utilize these devices to pay bills, transfer money and place order are low, representing only 1.8%, 6.3% and 7.1%, respectively. These top activities are also among the most popular daily activities on mobile

devices in many countries. The top performances of users on mobile devices are illustrated below.

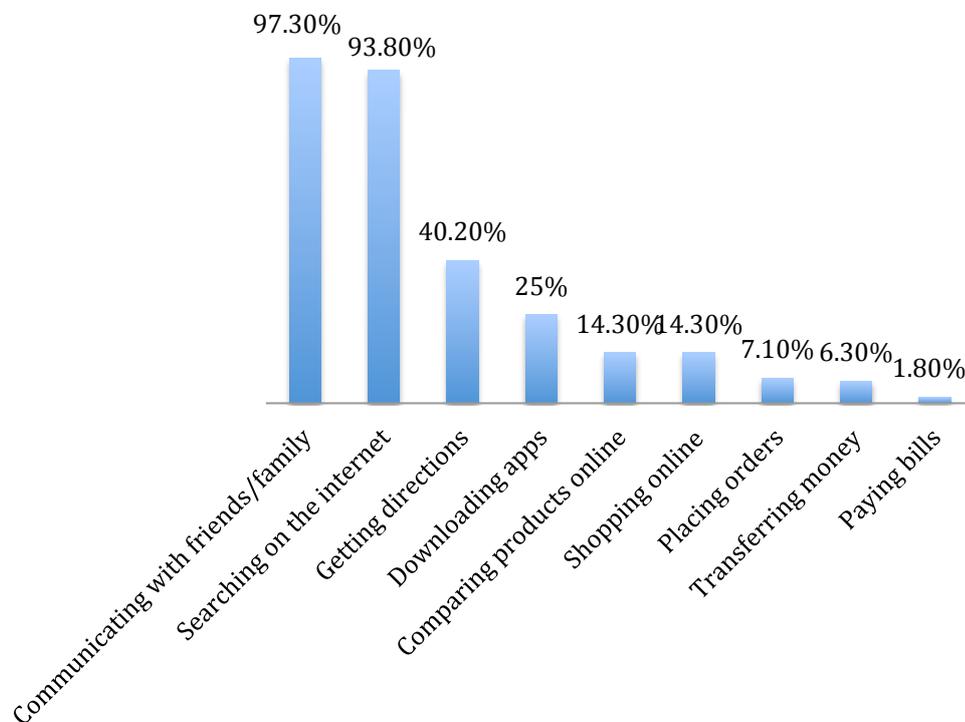


Figure 11. Top activities performed with mobile devices

Section 2.3 listed several m-commerce challenges, including connectivity, screen size, power, and storage capacity. Likewise, section 2.6 mentioned about security and technology concerns. Accordingly, Figure 12 listed several options from the two sections in the Literature review chapter. Respondents then could choose the most challenging factors that prevent them to make transactions via mobile devices.

As shown in the figure 12, screen size, security and connectivity are the main obstacles for mobile users. A majority of respondents admitted that small screen size is the most challenging aspect for them, which is accounted for around 57% of the total response. It seems that small screen size not only reduces the quality of image that appeared, but also induces eyestrain, and difficulty when reading or typing. Moreover, this finding for screen size partially supports previous research (Giovannini et al., 2015) in sub-section 2.6.3, that is

small screen size causes more and high uncertainties and risks. Accordingly, the statistics collected show the factor of lacking of security experiencing a slightly smaller percentage, with approximately 45.4%. Besides the reason of small screen size, perhaps lack of particular m-commerce law and low level of legal awareness are important issues that make mobile users do not feel safe and protected. In addition, the number of surveyed participants stated that insufficient connectivity is one of the major challenges accounted for a proportion of 37.5%. Slow and unstable or insufficient connection can become a matter for consumers. It is more likely because the consumers would be cut off while they are searching, reading, sending or receiving messages activities, or even in the middle of a transaction.

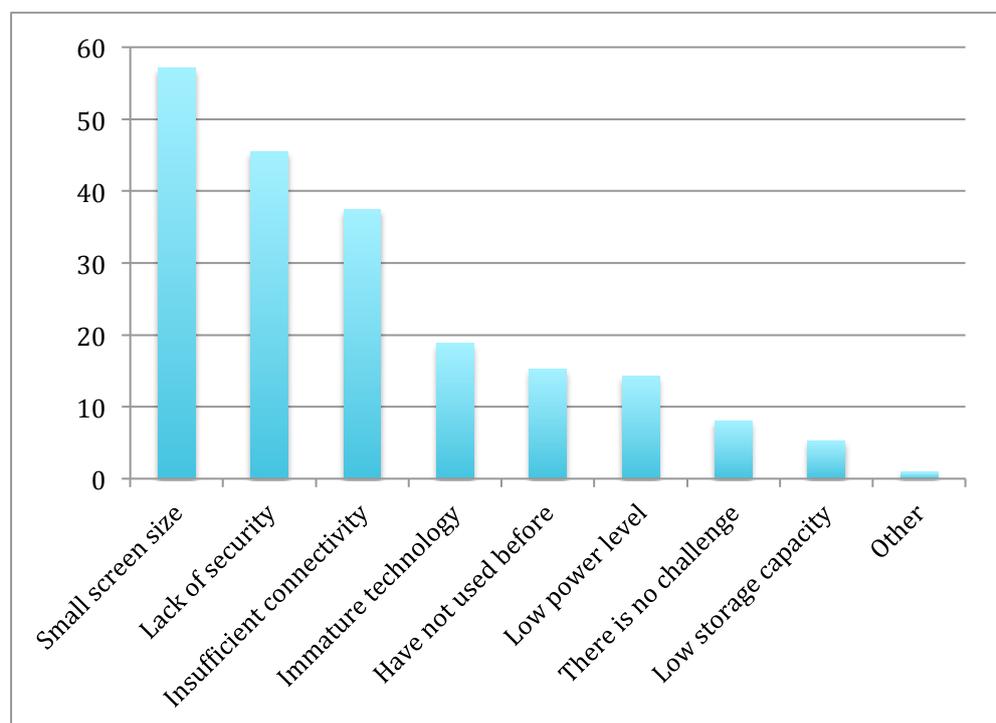


Figure 12. The challenging factors preventing users from making transactions through mobile devices

Around 15% of customers stated that they have not conducted any transaction online before, meaning 85% of respondents have done it. Also, it was a filtered

option for latter questions. Accordingly, the respondents are categorized into 2 main groups as mentioned above.

Next, there are five m-commerce attributes stated in the section 2.2, including ubiquity, convenience, personalization, localization and accessibility. It is evident that Vietnamese mobile customers prefer m-commerce for its ubiquity feature, since most respondents, which accounted for 43%, indicated that this feature brought the most advantage to them. For accessibility feature, the percentage fell to 24.1%% and 21% for convenience feature. A minority of people, made up for 8% and 4%, agreed that personalization and localization, respectively, benefit them the most. The “Other” option was placed in the answer section, however, there was no one choosing this option. The result is shown in the figure 13 underneath.

■ Ubiquity ■ Convenience ■ Personalization ■ Localization ■ Accesibility

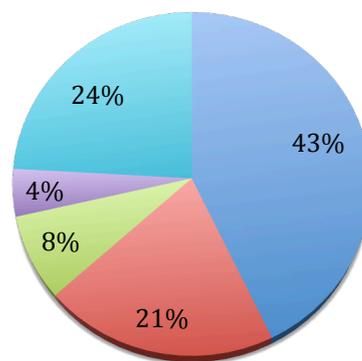


Figure 13. The most advantageous feature when using mobile devices

Overall, these data results of the questionnaire support the proposed research that ubiquity is the primary advantage of m-commerce (Siau, Lim and Shen, 2003). Besides, accessibility and convenience ranked the second and third advantageous features, respectively. It seems that in today fast-pace world, accessibility and convenience are situational criteria in mobile customers' choices. These two criteria can help mobile customers to save time in variety of activities, such as communicating or seeking information on the Internet.

After that, in the Literature Review chapter, there are three factors effecting customer satisfaction in m-commerce that were mentioned, namely: service quality, mobile technology and trust in m-commerce. Accordingly, surveyed participants are asked to choose which one of these factors has the bigger impact on their satisfaction or expectation while using wireless mobile devices. The results are depicted in the figure 14 below.

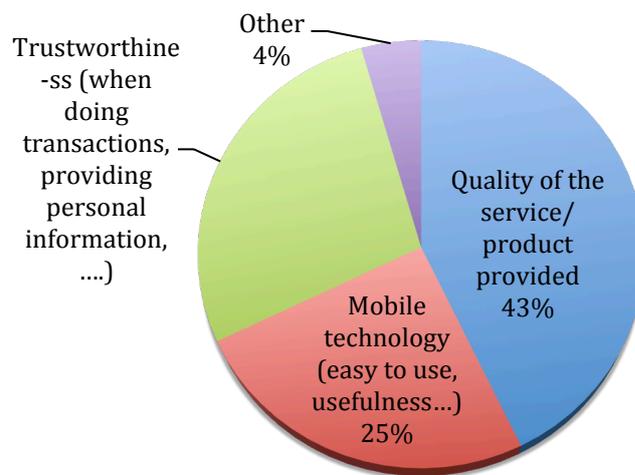


Figure 14. Factor that has the most impact on customer satisfaction

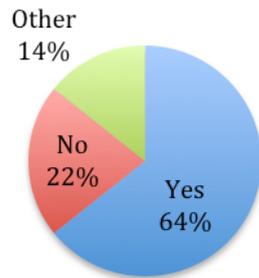
According to the results, a total of 43% approved said that quality of the service/product is the most important factor. Besides, there is small difference between mobile technology and trustworthiness. The percentages fell to 25% and 28% respectively. On the contrary, only 4% of them indicated that there is other factor that influences them the most; however, they did not provide a specific one. Overall, among the factors listed, quality of the service/product plays an important role for mobile consumers. Meanwhile, technology and trust have less important role; however, they are still big concerns for every user.

Then, there are questions where respondents participating in the survey were required to measure their own satisfaction when making transactions via mobile phone or tablets (Figure 15). The questions were designed to be answered with “Yes” or “No” for respondents who have made transactions before. Whereas

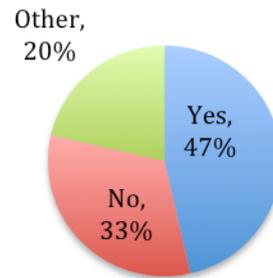
“Other” option is for the ones who have not done it in the past. The following figure will indicate in detail the study sample’s responses.

ARE YOU SATISFIED WITH:

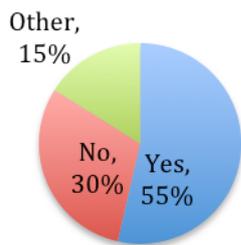
Checking account balance



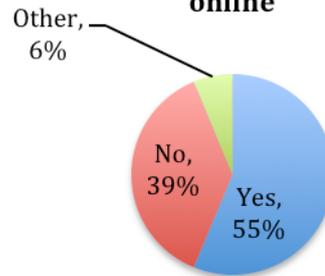
Paying bills/invoices



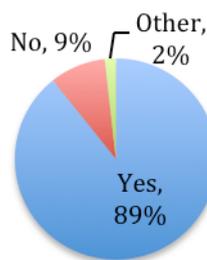
Transferring money to friends/family



Comparing products/service online



Searching products/service online



Shopping online

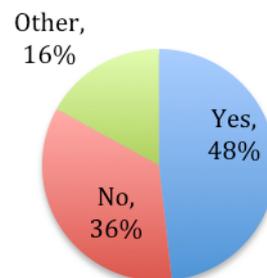


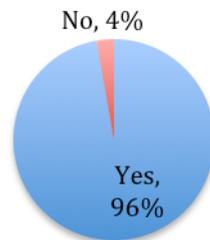
Figure 15. Customer satisfaction in some m-commerce transactions and activities.

The data collected show that most of the respondents are satisfied with listed activities performed via mobile devices. The greatest proportion of satisfied customers was when searching products/service online (89%). The second most activity that gained much satisfaction from the customer was checking account balance (64%). Among those respondents that have paid bills/invoices, transferred money and shopped online, there are rather small differences between groups of satisfied customers and groups of dissatisfied customers. These respondents, subsequently, were asked to rank the level of their satisfaction on scale from 1 to 5 in some particular questions related to monetary transactions. This part is presented in the next subchapter. Overall, it is clear that activities that are not related to monetary transactions have a higher percentage of satisfied customers than vice versa.

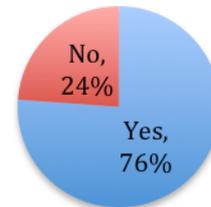
At last, in order to discover m-commerce's consumer behavior, the participants were asked to select between "Agree" or "Disagree" with some statements regarding the mobile online activities. According to the results depicted in figure 16, with the growth of mobile devices in Vietnam, almost all respondents (97%) have read products/service reviews before making purchase decision.

Moreover, 76% of them indicated that they have read or watched online advertisings. It is more likely that many customers do pay attention to the Internet advertisings, leading to an advantage for marketers. As mentioned in section 2.4.2, online advertising can put significant impacts on one's mind. Thus, the result suggests that marketers can take this advantage to build a relationship with customers and enable the selling of goods overcome barriers of distance.

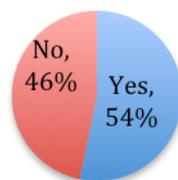
I read online reviews before making purchase decisions.



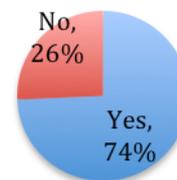
I read/watch online advertisings.



It is easy to compare products online rather than at a physical store.



I do not trust giving my bankcard's (debit/credit/ etc.) information online.



Checking out and payment process is complicated.

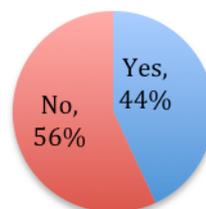


Figure 16. Consumer behavior with regard to m-commerce

In addition, more than half of respondents (54%) found it easier to compare products online than that in a physical store. Indeed, customers can save much time using mobile devices to compare products. They can likewise access several websites simultaneously to search for products' information. Besides, majority of customers (74%) did not trust giving bankcard's information online. On one hand, it is considered as one of the reason preventing mobile users to make transactions, as well as lower the level of customer satisfaction. Obviously, when customers have the perceptions of risk and their subsequent

fear of losing card's information, they tend not to give their individual information. On the other hand, in accordance with the previous questions, this statistic also shows that despite the lack of trustworthiness, most of respondents (85%) have done monetary transactions, in which they must provide their bankcard's information. Plus, more than half of them stated that they were satisfied after doing so. Hence, this reason is not the major one that discourages mobile users to conduct monetary transactions.

5.3 Measuring level of customer satisfaction

This subchapter includes 4 main questions, in which participants were given answers with 5-point Likert scale in which 1 means strongly disagree and 5 means strongly agree. In addition, two groups of the aforementioned respondents are analyzed individually in this section. The group of all types of respondents is brought to discuss first.

5.3.1 Respondents' assessment of mobile devices

This main question was designed for respondents to assess mobile device in comparison with desktop computer. Table 1 presents the results collected from 112 respondents (sample size N = 112).

Table 1. Respondents' assessment of mobile devices

	Strongly disagree (1)	Disagree (2)	Neutral (3)	Agree (4)	Strongly agree (5)
1. Mobile devices are more convenient than desktop computers.	7.1%	12.5%	43.8%	22.3%	14.3%
2. I prefer using mobile devices than via desktop computers.	18.7%	34.8%	10.7%	29.5%	6.3%
3. I am satisfied with my mobile service provider.	8.9%	20.5%	41.1%	23.2%	6.3%

4. I am satisfied with mobile utility and service.	4.5%	8.9%	13.4%	42.8%	30.4%
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(N = 112)

It can be seen clearly from the table that there are relatively high percentage of respondents who satisfy with mobile utility and service, which is 43%, and roughly 30% is completely satisfied. In fact, mobile Internet in Vietnam is somewhat convenient. Its signal is rather good for mobile users all over the country. Oppositely, majority of respondents showed no opinion on whether they are satisfied with their mobile service provider or agreed that mobile devices are more convenient than desktop computers, the numbers accounted for 41% and 44%, respectively. Only 8.9% and 7.1% strongly disagree with the two criteria, respectively. Meanwhile the percentage of those who agreed with these criteria ranked the second-high places, 23.2% and 22.3%, respectively.

As mentioned in section 2.1, m-commerce is a new type of e-commerce. The users of m-commerce can shop and make transactions via the Internet with the help of mobile devices; likewise when they use their desktops computers. The author wanted to know if mobile customers prefer using mobile devices more than traditional desktop computers. Accordingly, in the case of comparing mobile devices and desktop computers, many respondents admitted that they prefer using desktop computers rather than mobile devices. Moreover, the number of respondents who do not prefer using mobile devices than desktops computers is high, occupied for approximately 35%. Indeed, in spite of people's activities becoming more involved in handheld devices, a large proportion of people still want to use desktop computers for many online activities. It seems that Vietnamese customers have a preference towards desktop computers. Nevertheless, there is slightly difference percentage, made up for about 5%, between the ones who agreed that they prefer using mobile devices and the one who did not. In general, majority of respondents still found that mobile devices are useful and they are satisfied with them. Further studies that conducted on the reasons why many people prefer desktop computers to

mobile devices can make an important contribution. The reasons can help to address the disadvantages of mobile devices.

5.3.2 Customer satisfaction in service quality

The results shown in table 2 depict the level of customer satisfaction in the term of mobile service quality. As mentioned in section 2.6.1, an achieved quality of service can lead to customer satisfaction. Hence, the mobile service quality is carefully asked to evaluate the satisfaction of respondents.

Table 2. Level of customer satisfaction in service quality

	Strongly disagree (1)	Disagree (2)	Neutral (3)	Agree (4)	Strongly agree (5)
1. Transmission of mobile data is strong and stable	5.4%	18.8%	31.2%	33.2%	11.6%
2. The coverage of mobile signal network is extensive	6.3%	17.8%	12.5%	38.4%	25%
3. Online advertisings are useful	5.4%	12.5%	37.5%	24.1%	20.5%
4. Location-based service is useful	2.6%	4.4%	24.5%	37.5%	31%

(N = 112)

On one hand, the mobile service, including coverage of mobile signal and location-based service quality, is positively evaluated since a large amount of respondents is rather satisfied. More specifically, around 38% of mobile users agreed that the category of mobile signal network is extensive, followed by 25% of respondents who completely agreed. 37.5% of surveyed participants agreed that location-based service one is useful, followed by 31% of some totally agreement. In fact, there are prevailing mobile operators in Vietnam, such as MobiFone, Viettel and VinaPhone, that offer rather good quality service and it is considered as reliable service in the country. Because of that, a majority of

Vietnamese mobile users have chosen to use service from these providers. Especially, the mobile signal network of these providers is somewhat strong and many areas in the country is covered by the mobile networks. On the other hand, there is not much difference between the respondents who agreed (33%) and who had neutral opinion (31.2%) on the quality of the transmission of mobile data. Nonetheless, this result also shows positive statistics for Vietnamese mobile operators. Mobile providers need to enhance their service, particularly the transmission of mobile data in order to gain higher level of customer satisfaction.

Moreover, in the previous sup-chapter, a wide range of respondents indicated that they have read or watched online advertisings, yet pretty many of them expressed no opinion on whether or not these advertisings were useful. Yet, more than 24% of respondents agreed that advertisings are useful, and around 20% of them said that they are totally helpful. The present evidence suggests that advertisings on the Internet are indeed a good way to approach customers on a large-scale with low cost and a great way to remind them of products or service. Eventually, it seem that respondents are pretty satisfied with the quality of the overall service.

5.3.3 Customer satisfaction in the use of mobile devices

Table 3. Level of customer satisfaction in the use of mobile devices

	Strongly disagree (1)	Disagree (2)	Neutral (3)	Agree (4)	Strongly agree (5)
1. It is easy to switch apps	4.5%	8.9%	37.5%	39.3%	9.8%
2. It is easy to navigate within websites	4.5%	8.3%	38.3%	32%	16.9%
3. Websites and mobile apps have clear and effective user interface	5.4%	16.1%	36.6%	31.2%	10.7%

(N = 112)

Regarding customer satisfaction in the use of mobile devices, the results shows that respondents had neutral points of view in 2 out of 3 categories. In details, approximately 38% of respondents had no opinion on whether was easy to navigate within websites on a mobile device or websites. Likewise, the number of respondents showed no opinion on “mobile apps have clear and effective user interface” is 36.6%. However, the number of respondents who agreed with the categories mentioned above is roughly equal to the number of that expressed neutral points of view. In addition, there are around 39% of respondents agree that it is easy to switch apps.

The findings show positive opinions in the use of mobile devices. According to Davis (1989), when the customers find that using technology is free of effort and enhance their performance, it is more likely that the customers are satisfied. In accordance with the statistics above, mobile customers are more likely satisfied with the use of mobile devices.

5.3.4 Respondents' trust evaluation

As presented in the table 4, the respondents' level of trustworthiness is not high in general. Majority of respondents believed that the sellers could defraud them, which occupied for approximately 35%. Only 5.4% saying that they cannot be defrauded when conducting transactions. Similarly, about 39% of surveyed consumers agreed that their personal information is misused, while 33% showed no opinion. There is a small proportion of respondents, made up for 2.7%, who believed that their information is not misused. However, a total of nearly 45% of surveyed mobile users found it is normal with their service providers, followed by 24.1% agreed that they trust their providers. It seems that the level of trust among respondents is not high.

Table 4. Respondents' trust evaluation

	Strongly disagree (1)	Disagree (2)	Neutral (3)	Agree (4)	Strongly agree (5)
1. I trust my mobile service providers	8%	17.9%	44.6%	24.1%	5.4%
2. I can be defrauded when making transactions	3.5%	5.4%	29.5%	34.8%	26.8%
3. My personal information is misused	2.7%	1.8%	33%	39.3%	23.2%

(N = 112)

In fact, according to VECITA report (2014), there have not been many disputes related to private information in online transactions in Vietnam. Service providers have had policies to protect their clients' information, yet according to VECITA report (2014), only big enterprises care much about this. Still, many small companies do not have such policies. Besides, the Government has issued several related laws. However, Vietnamese mobile commerce consumers' benefits have not been protected sufficiently. Mobile users' information leakage still takes place. Nevertheless, as aforementioned in section 3.2, there is no specific law about m-commerce in Vietnam. Therefore, if a mobile user is defrauded while making transactions, or his or her confidential information is leaked and misused, his or her rights or benefits might not be protected well enough. These are reasons for why the level of trust in m-commerce is rather low.

5.3.5 Evaluation of mobile transactions

Table 5 illustrates the surveyed data for the group of respondents who have experiences about making monetary transactions via mobile devices (N = 95).

Table 5. Respondents' evaluation of mobile transactions

	Strongly disagree (1)	Disagree (2)	Neutral (3)	Agree (4)	Strongly agree (5)
1. I prefer making transactions via mobile devices than via desktop computers	24.2%	24.2%	33.7%	12.6%	5.3%
2. Transfer money/pay bills via mobile devices is safe	15.8%	12.6%	38.9%	25.3%	7.4%

(N = 95)

There is a considerable difference among people who strongly agreed and strong disagreed that they prefer making transactions via mobile phones/tablets than traditional desktops. The percentages fell to 24.2% and 5.3%, respectively. Moreover, the number of disagreement is equal to that of strongly disagreement. Clearly, the statistics show that surveyed respondents prefer making transactions via desktop computers than via mobile devices. The statistics likewise are rather consistent with the results from previous question when respondents are asked to compare mobile devices and desktop computers. Nonetheless, most people say that they feel normal with conducting transactions via either mobile devices or desktop computers.

Only 25.3% of respondents agreed that they found transfer money or pay bills through handheld devices is safe. While a majority of respondents showed neutral feeling about it. Besides, the amount of respondents strongly agreed with this criterion is small (7.4%). Obviously, the findings again show that customers' trust in m-commerce is still low.

6. CONCLUSION

As presented in the Introduction chapter, the objective of this thesis is to find out factors affecting customer satisfaction in m-commerce in Vietnam, as well as to measure customer satisfaction in this field. The summarized conclusions for those concerns, hence, are presented in this chapter.

- Which factors affect customer satisfaction in m-commerce in Vietnam?
- Are Vietnamese customers satisfied with m-commerce services in Vietnam? (The case mainly focuses on Hanoi and Ho Chi Minh City)

6.1 Main findings

The first research question that this research was aiming to answer was: **Which factors affect customer satisfaction in m-commerce in Vietnam?** There are three decisive factors affecting customer satisfaction in m-commerce that have been proposed and determined their impacts on customer satisfaction. Accordingly, the questionnaire was conducted based on these three factors.

Firstly, good quality of service can make a positive impact on customers' satisfaction, since more than 40% of respondents were satisfied with the utility and service. Accordingly, more than 30% of them agreed that the quality of service (transmission of mobile data, the mobile coverage signal and local-based service) was rather good. The findings reveal that service quality is an of vital importance factor with significant degree of influence and highest.

Secondly, the factor of trust also has impact on customer satisfaction. More than 34% of respondents agreed that they were afraid of being defrauded. The results from the data collected show that customers had less trust on mobile commerce. As a result, the level of satisfaction is not high.

Finally, mobile technology plays an essential role into raising the customer satisfaction level. After analyzing the collected results, it showed that mobile technology had received somewhat great concern. People did care about how mature or immature the technology was as 18.8% of respondents stated so. In

fact, the immaturity of the technology can reduce performance quality. Besides, when mobile users find it difficult to perform an activity on their mobile devices, it can lead to dissatisfaction. For example, in accordance with the collected data, nearly half of the respondents said that they found the process of checking out and paying were complicated. They perceived lesser ease of use and hence lesser usefulness.

The second research question of this research was: **Are Vietnamese customers satisfied with m-commerce services in Vietnam? (The case mainly focuses on Hanoi and Ho Chi Minh City).** Customer satisfaction on each element mentioned above has been examined in detail. The research found that customers are only slightly satisfied with m-commerce services in Vietnam. This is due to some obstacles that users have had encountered while using mobile devices. Therefore, the research also reveals these obstacles that need to be aware in order to achieve high level of customer satisfaction as bellow.

Firstly, small screen size is actually a big problem to Vietnamese mobile users as 57.1% of participants cared about this issue. Limited screen size has impact not only on the image/website/applications quality but also on usability (i.e. the ease of use) of mobile users. Indeed, the size of the screen can lead to problems when making transactions. For example, people can easily make mistakes while entering the credit card number on a small screen.

Secondly, mobile quality service in Vietnam needs to be improved. More specifically, the connectivity of mobile devices needs to be enhanced, since 27.5% of participants stated that it was an issue for them while using mobile devices. The findings suggest that it is worthwhile for service providers to solve and enhance service to provide secure, reliable and fixed connectivity for their customers.

Lastly, there are concerns about privacy and security of individual information among Vietnamese mobile users with 45.5% of them said it was an obstacle. The reason can be lack of m-commerce law and/or low level of legal

awareness. Indeed, it seems that the level of legal awareness of surveyed respondents is not high, as majority of them have low and middle levels of income (30% of respondents earning monthly salary less than 5 million VND, and 36% of them earning that from 5 to 9 million VND). Mobile users would feel more secure if they had strong knowledge regarding legal issues. Accordingly, if customers do not feel free of risk, the level of customer satisfaction will not be high. Thus, this obstacle can also reduce the use of Internet for conducting transactions through handheld devices, since its action requires sharing private information.

6.2 Suggestions for future studies

M-commerce sector is still a new term in Vietnam; therefore, customers' opinions on this field might be rather limited. Moreover, in order to collect data, this thesis is based on solely quantitative method with a constraint of time and financial resources. The sample of this research is somewhat small in comparison to Vietnamese population. Plus, there might be other factors that affect customer satisfaction in m-commerce. Hence, further study can be conducted with a combination of quantitative and qualitative research method on broader aspects of m-commerce in order to achieve a more in-depth research.

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APPENDIX 1: SURVEY QUESTIONNAIRE

(Translated from Vietnamese)

Dear participants,

My name is Chu Phuong Anh. I am currently a senior student studying International Business at Turku University of Applied Sciences in Finland. I conducted this survey to understand customer satisfaction in mobile commerce in Vietnam. This survey should take approximately ten minutes.

Your responses will be treated with confidentiality and anonymity. Your response will not be analyzed individually, and will be used for the purpose of this research only. Thank you in advance for your time and contribution.

Regards,

Phuong Anh

I – GENERAL QUESTIONS

1. Genders

- Male
- Female

2. How old are you?

- 18 - 24
- 25 - 34
- 35 - 44
- 45 – 55
- > 55

3. Average income per month:

- < 5 million VND
- 5 – 9 million VND
- 10 – 19 million VND
- 20 – 30 million VND

- > 30 million VND

4. How much time do you spend online on a mobile device per day?

(Mobile devices are tablets, smartphones....)

- < 2 hours
- 2 – 4 hours
- 4 – 6 hours
- 6 – 8 hours
- > 8 hours

II - CUSTOMER ACTIVITIES AND BEHAVIOUR TOWARDS M-COMMERCE

5. Top activities performed with mobile devices:

(Please choose 3 answers below that apply to you)

- Communicating with friends/family
- Placing orders
- Searching on the Internet
- Comparing products online
- Getting directions
- Downloading apps
- Transferring money
- Paying bills
- Shopping online

6. What are the most challenging factors that prevent you from making transactions through mobile devices?

(Please maximum 3 answers below that apply to you and/or fill in the black where necessary)

- Lack of security
- Small screen size
- Low power level

- Low storage capacity
- Immature technology
- Insufficient connectivity
- There is no challenge
- Have not done any transaction before
- Others:.....

7. What is the most advantage feature when using mobile devices?

- Ubiquity** (You can receive information/buy a product/service from virtually any places regardless of your current location)
- Convenience** (You can easily use many functions of your device regardless of time and location)
- Personalization** (You can use your device to do and store personal things)
- Localization** (The ability of locating a your physical position)
- Accessibility** (It is easy to access and connect to wireless network/applications/etc.)
- Other:** ...

8. Which factor that have the most impact on your satisfaction/expectation when using mobile devices?

- Quality** of service/product provided
- Mobile technology** (ease of use, usefulness...)
- Trustworthiness** (when doing transactions, providing information...)
- Other:** ...

9. Did you feel satisfied with ... via mobile devices:

(Please answers as "NO" or "HAVE NOT DONE" in the OTHER option in cases you have never done these below activities.

○ Checking account balance?

- Yes
- No
- Other: ...

○ Paying bills/invoices?

- Yes
- No
- Other: ...

○ Transferring money to family/friends?

- Yes
- No
- Other: ...

○ Shopping online?

- Yes
- No
- Other: ...

○ Comparing products/service online?

- Yes
- No
- Other: ...

○ Searching products/service online?

- Yes
- No
- Other: ...

10. Do you agree with the below statements?

○ I read online reviews before making purchase decisions.

- Agree

Disagree

○ I read online advertisings.

Agree

Disagree

○ It is easy to compare products online rather than at a physical store.

Agree

Disagree

○ I do not trust giving my bankcard's (debit/credit/etc.) information online.

Agree

Disagree

○ Checking out and payment process is complicated.

Agree

Disagree

III – CUSTOMER SATISFACTION IN M-COMMERCE

(Please choose the most appropriate numbers which represent how you feel about these concerns below)

11. Overall about mobile devices

	Strongly disagree (1)	Disagree (2)	Neutral (3)	Agree (4)	Strongly agree (5)
1. Mobile devices are more convenient than desktop computers.					

2. I prefer using mobile devices than via desktop computers.					
3. I am satisfied with my mobile service provider.					
4. I am satisfied with mobile utility and service.					

12. Service quality

	Strongly disagree (1)	Disagree (2)	Neutral (3)	Agree (4)	Strongly agree (5)
1. Transmission of mobile data is strong and stable					
2. The coverage of mobile signal network is extensive					
3. Online advertisings are useful					
4. Location-based service is useful					

13. Mobile technology

	Strongly disagree (1)	Disagree (2)	Neutral (3)	Agree (4)	Strongly agree (5)
1. It is easy to switch apps					

2. It is easy to navigate within websites					
3. Websites and mobile apps have clear and effective user interface					

14. Trust in m-commerce

	Strongly disagree (1)	Disagree (2)	Neutral (3)	Agree (4)	Strongly agree (5)
1. I trust my mobile service providers					
2. I can be defrauded when making transactions					
3. My personal information is misused					

15. Questions for those who have done monetary transactions before.

(Please do not answer these questions IF you HAVE NOT DONE any transaction before)

	Strongly disagree (1)	Disagree (2)	Neutral (3)	Agree (4)	Strongly agree (5)
1. I prefer making transactions via mobile devices than via desktop computers					
2. Transfer money/pay bills via mobile devices is safe					

THANK YOU!