CHAPTER 1

INTRODUCTION

The number of smartphone users has increased dramatically. Along with smartphone production, plenty of services have been created to utilize the possible functions of smartphones. Thanks to technology, mobile users can nowadays use their smartphones to make money transaction or payment by using applications installed in the phone. Besides payment, people can also store receipts, coupons, business cards, bills…in their smartphones. When smartphones can function as leather wallets, it is called "Digital Wallet" or widely known as "Mobile Wallet".

Mobile wallets allow consumers to use their smartphones to make payments for purchases of goods and services. In order for consumers to use their smartphones as mobile wallets, they need to download the service provider's mobile wallet app and enter their credit and debit cards information. Once this is done, consumers can make payments by simply having their smartphone scanned by service providers NFC readers. In addition to payment capabilities, mobile wallets offer consumers *inter alia* the ability to link their loyalty cards to their mobile wallets, store online shopping accounts and details, receive product information, coupons, special offers and promotions, and make price comparison. Mobile wallets can support various transactions, including consumer-to-consumer, consumer-to-business, and consumer-to machine(i.e., paying for parking meter), and consumer-to-online.

Mobile wallets offer faster processing At the point of sale and increased opportunity for impulse buying. These functionalities not only offer consumers convenience and other benefits but also provide marketers with a wealth of consumer shopping behaviour information, which could be used by marketers to enhance consumers' shopping experiences. Basically, mobile wallets enable marketers to develop close relationships with its customers. A few examples of mobile wallet apps include PayTm, Freecharge, Mobikwik etc.

Mobile wallets represent another major advance in mobile marketing since they significantly enhance consumer convenience and provide marketers with a wide range of opportunities to better reach and serve consumers in a personalized way. However, consumer adoption is crucial for the success of mobile wallets. Currently, consumer adoption of mobile wallets is in the early stages but marketers are eager to see widespread adoption of this new technology (MasterCard, 2012). Thus, there is a real practical need for a better understanding of the factors that could influence mobile wallet adoption. Further, although much research has been conducted on various aspects of mobile commerce and payment systems, research on the adoption of mobile wallets is limited. The goal of this study is to add to the emerging research on mobile wallet by investigating consumer adoption of this technology.

The main focus of this study is to identify the main factors that are likely to influence consumer adoption of mobile wallets.

1.1 Mobile wallet background

Back to history, mobile wallet is developed from a concept called "Digital Wallet". It dated back in 1996 when the founder of Digital Wallet, Sam Pitroda, who filed the patent in the United States [see (Sam Pitroda Patents)]. He "professed that a digital wallet would consist of a liquid crystal display not much bigger than a regular plastic bank card, which preferably a touch-sensitive screen and simple user interface that lets the user flip through the digital wallet in the same manner he/she flips through a leather wallet". (Pitroda S., Desai M., 2010)

So far, there has not been yet a proper definition for the word "Mobile Wallet" written by specific scholars. In the Non-Confidential GSMA White Paper, mobile wallet was defined as "a software application on a mobile handset that function as a digital container for payment cards, tickets, loyalty cards, receipts, vouchers and other items that might be found in a conventional wallet. The mobile wallet enables the user to manage a broad portfolio of mobile NFC [Near Field Communication] services from many different companies" (GSMA, 2012). In other words, mobile wallet is "formed" when your smartphone functions as a leather wallet: it can have digital coupons, digital money (transaction), digital cards, and digital receipts...etc. all in your smartphone. This means, you install the application that are created by some companies such as Google Inc., Apple Inc. or PayPal in your phone, and use those applications to pay directly for the products you have purchased (online/offline).

One view, expressed by Kevin Erickson (2013) - a technology blogger from Credera (a technology consulting firm from the USA) is that mobile wallet tries to perform these following features for single user (Erickson, 2013)

1. Display and store coupons or account offers from businesses which users subscribed or engaged with
2. Identify real time discounts and offers from different business locations
3. Provide search engine and evaluation tool for restaurants and shops based on location
4. Act as payment tool with credit and debit cards
5. Organize receipts

1.2 The ecosystem of mobile wallet

There are two possible points of view when we look at the ecosystem of the mobile wallet. In terms of technology and it is based on the founder point of view, Pitroda introduced in detail the mobile wallet ecosystem in Figure 1 (Pitroda S., Desai M., 2010)

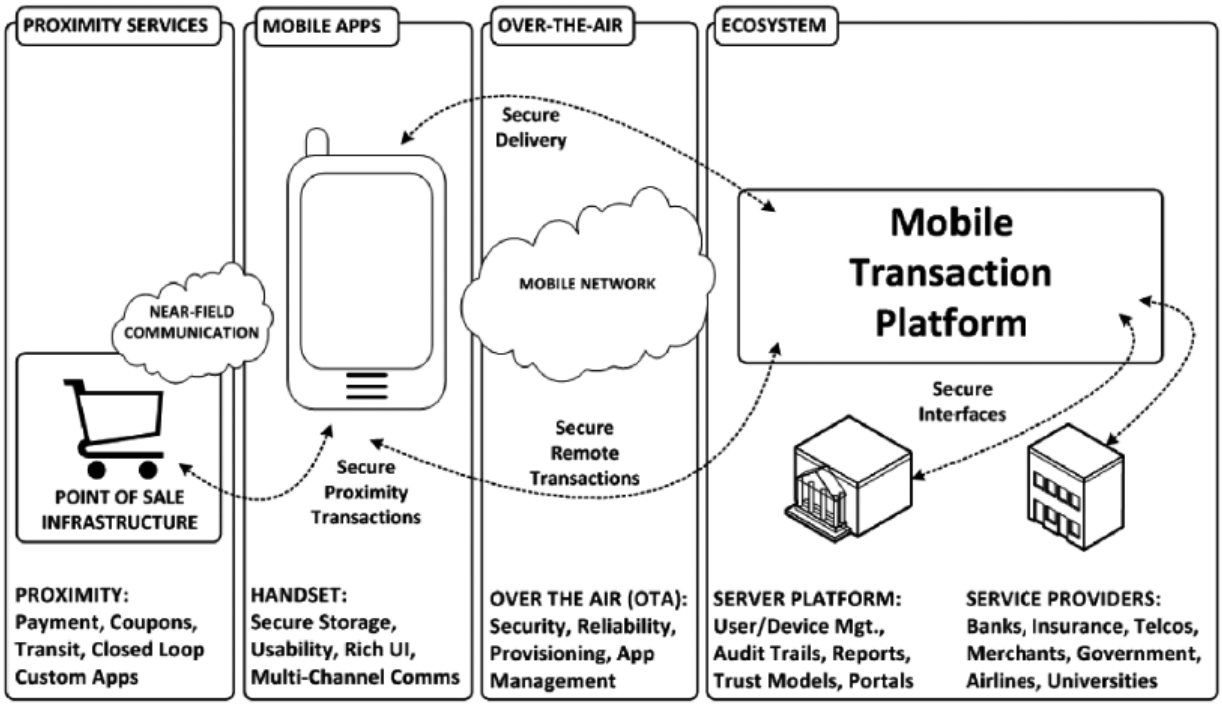

Figure 1.1: The official mobile wallet ecosystem (Pitroda S., Desai M., 2010)

However, figure 1 requires a good knowledge to be able to interpret [see more at (Pitroda S., Desai M., 2010)]. In observers' point of view, for easy understanding, another figure has been found during the research process.

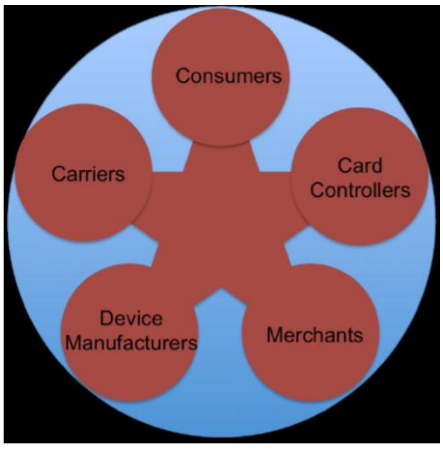

Figure 1.2: Mobile wallet ecosystem (Stringer 2010)

Figure 1.2 was drawn by Rob Stringer, VP Marketing and Product Development from Cortex MCP Inc. It illustrates directly the main stakeholders of the electronic/digital wallet. Each stakeholder will be introduced separately in the next parts.

1.2.1 Card controllers

Card controllers are defined as "those that own the card or account data" (Stringer, 2014). Those companies for instance: Visa, Master Card, American Express, Discover, Wal-Mart, Apple, Google, Amazon, PayPal, Facebook…etc. They are simply categorized into 3 groups with their strengths and weaknesses to influence the mobile wallet market:

a. Card Network: Visa, Master Card, American Express…

They are the traditional card companies, the one who set regulations and pricing on cards. They operate as partners in the finance market and form into a network. Due to the fact that it was established for a long time, these companies actually "own" big account data information. Therefore, the network has a great opportunity in increasing the "share of wallet" by collaborating with different "wallet businesses".

b. Card-on-file Merchants: Google, Apple, PayPal, Starbucks, Wal-Mart…

This category includes companies who have both "physical POS infrastructure in place and a strong online card-on-file" (Stringer, 2014). Their biggest advantage is that they are able to approach their consumers with mobile wallet service. The reason is that the consumers have already felt comfortable using their products; it should not be an obstacle to put more payment method such as mobile wallet in their e-payment. Another strength is that this group can offer the alternative payment in their digital wallet besides the credit or debit card. For example, Apple created Passbook application where consumers can store their cards and just by tapping on which cards consumers would like to use, the transaction will be completed (AppleInc., 2012).

Unlike the Card Network mentioned in a), these companies in some extend are competitors toward each other, especially the competition between Apple and Google (Williams, 2014). In order to gain more mobile wallet market share, they have to learn how to cooperate with each other, or at least can be effective competing with each other (Stringer, 2014).

c. Digital Asset Companies

This is “a group of card controller companies sells digital assets, or sells physical assets online with little to no physical POS presence” (Stringer, 2014). ITunes of Apple Inc. and Google Wallet of Google are the particular examples in this group. These companies were built in a Card-Not-Present e-commerce environment, thus they get familiar with m-commerce as well. Their strength is the same as the b) Card-on-file Merchants group, which they have a big data information of consumers to exploit and use it for conducting mobile wallet.

The scheme of this group looks a bit of “single-player”, which means that their business only runs within their own circle. Some big physical retail giants such as The Home Depot or IKEA do not want to partner with this group. This led to the limitation of the market share. The reason is according to Stringer perhaps relate more in politics than technology (Stringer, 2014).

1.2.2 Merchants

The physical stores are called merchant or point of sale (POS), for example, a retail outlet or a restaurant. “A successful mobile wallet must have a large merchant base that accepts the wallet” (Carrington, 2014). Merchant plays a very crucial role in mobile wallet establishment. If the merchants do not support the payment by mobile wallet, the transaction will be difficult to make.

Due to the fact that consumers would like to have alternative payments, merchants have to adapt in the mobile wallet market. They should change from cash-based system into other alternative payments. The main focus of merchant is to sell the products faster and cheaper (Stringer, 2014). Therefore, the change is a necessary action for merchant.

1.2.3 Carriers

Carriers are the Mobile Service Providers. Different countries will have different carriers. “In many countries, the carriers often control what software (or hardware) [can be installed] on the mobile devices that connect to their network (Stringer, 2014). There are several big carriers that are known widely. For instance, AT&T Inc., T-Mobile and Verizon Wireless are the 3 biggest mobile service providers in USA. In September 2013, these 3 carries launched the Isis Mobile Wallet application which

enabled American mobile users to make transaction with their NFC-equipped smartphones (Nelson, 2013).

1.2.4 Device manufacturers

This stakeholder is the companies who create the smartphones. Apple, Google, Samsung, HTC, Microsoft…etc. are the mostly known manufacturers. They are considered to be "the only ones that can really get consumers to pick their mobile device over their leather wallet" (Stringer, 2014). In other words, they have a large market adoption with embedded mobile payment application in their products (Carr, 2008).

Most of these companies have tried to develop their own mobile devices so that they can acquire a big amount of consumers. For instance, Google has successfully developed Nexus smartphones; Amazon also had intention to create its own phone, even Facebook had the same plan too (Bilton, 2012). The reason is that mobile devices are the easiest tools to bind customers with the mobile wallet brands. Moreover, one of the manufacturers' advantages is that they are not attached to only one payment type (Stringer, 2014). Hence, the companies can adjust their products to give the consumers what they want.

"The device that allows consumers to get what they want better than the others will win, and the wallet that wins will be on that device" (Stringer, 2014).

1.2.5 Consumers

For any business, it is undeniable that consumers are the most important factor. The great and "cool" technology is not forceful enough to trigger the consumers to use mobile wallet. Thus, it is very crucial to gain the adoption from consumers. The interesting thing is that paying by mobile device does not have much attraction toward consumers. The marketing and loyalty programs are (Stringer, 2014). When we find the example, we should look at Starbucks' successful mobile wallet application. According to Forbes' article written by Steven Bertoni, Starbuck's mobile wallet is used the most in America. "About 10 million customers pay for their lattes with the app, making more than 5 million transactions per week" (Bertoni, 2014). Its loyalty program had been designed excellently that enabled its customers experiencing all the available marketing campaign directly from their phones, which illustrated by "offers

instant discounts for free coffee or food and links to directly to Starbucks' hot reward program in real time" (Bertoni, 2014). This factor needs to be thought through carefully once companies would like to launch mobile wallet for their business.

1.3 Mobile wallet technologies

1.3.1 Direct carrier billing

This has been the traditional technique for decades. "It is also called direct operator billing or mobile content billing, which lets the users make a purchase via their phones from merchants without entering credit card data" (PCMag)

1.3.2 QR and bar codes

"QR codes are the square bar codes [see Picture 1] that power many cloud-based advertising and payment apps" (Webster, 2012). We can see an example of QR code in Picture 1. The optional confirmation code can be required for security purpose.

Picture 1.3: QR Code (source www.social-network-marketing.info)

1.3.3 NFC

NFC is the acronym for Near Field Communication. Any devices which are installed this technology can communicate and exchange information as well as data within a few centimeters distance (GSMA, 2012). To make it function, both devices are required to have NFC (Webster, 2012).

1.3.4 Cloud-based solution

Cloud-based solution is also known as cloud computing which is defined as "a model for enabling ubiquitous, convenient, on-demand network access to a shared pool of configurable computing resources (e.g., networks, servers, storage, applications, and services) that can be rapidly provisioned and released with minimal management effort or service provider interaction" (Peter Mell, Timothy Grance, 2011). For example, PayPal is trying to let its users make transaction just by typing their mobile phone number and PIN code at physical POS (Webster, 2012).

1.4 Research Objective

The main focus of this study is to identify the main factors that are likely to influence consumer adoption of mobile wallets. The analytical framework utilized in this study is based on two established technology adoption literatures, namely, technology acceptance models (TAM) and innovation diffusion theory (IDT). Relevant factors from these models are tested in the context of mobile wallet adoption. Furthermore, the result of this study will provide proof points that can guide industry players who are looking to build public demand and usage of mobile wallet. To achieve the main objective of the research study, two theoretical models with various constructs and their interrelationships has been formulated to develop an understanding of the interaction between sociological and technological factors that contribute to effective consumer adoption processes and other practices in India.

CHAPTER 2

LITERATURE REVIEW

This part introduces some of the foundation concepts of consumer adoption toward technological products or any innovation in general.

2.1 Adoption concept

In diffusion of innovation literature, "adoption" is one of the oldest and most important concepts (Eveland, 1979). "Adoption can refer to a process, an event, or a state of being - sometimes all at once…Adoption is laden with positive value and implied finality. Adopters are those who adopt, as opposed to rejecters who decide not to adopt, or non-adopters who have yet to begin the process of becoming adopters" (Zenobia, 2008). Many diffusion of innovation research has been using adoption concept as the main variable and it has successfully given the main basis for the generalizability (Eveland, 1979).

Zenobia (2008) summarized the 3 types of adoption decisions suggested by Rogers (2003, 5th edition) in his Diffusion of Innovations book:

1. Optional adoption decision is made by single individual such as the consumers' decision.
2. Collective adoption decision is taken place by group consensus.
3. Authority adoption decision is established by more or less a few individuals who hold positions of power, status or technical professionals in a group.

This research paper will focus mainly on Optional adoption decision which means that it studies the adoption decision of consumers. However, "optional" does not imply that the adoption is made without the influence of such factors as opinions of others (family, friends...etc.) or the impact of the image imposed by advertising agency (Katz, 1962). Hence adoption is intrinsically a social process (Zenobia, 2008).

2.2 Innovation-decision process

The Innovation – Decision Process of Rogers (1983, p.165) is "a process through which an individual (or other-decision making unit) passes from first knowledge of an innovation, to forming an attitude toward the innovation, to a decision to adopt or

reject, to implementation of the new idea, and to confirmation of this decision" (Figure 4). The process was called as the Technology Adoption Decision Process (TADP) by Zenobia (2008) and it has been also the most frequent cited model. For a sizable number of studies such as the scale of this research, TADP model is very suitable to put in practice (Ettlie, 1980).

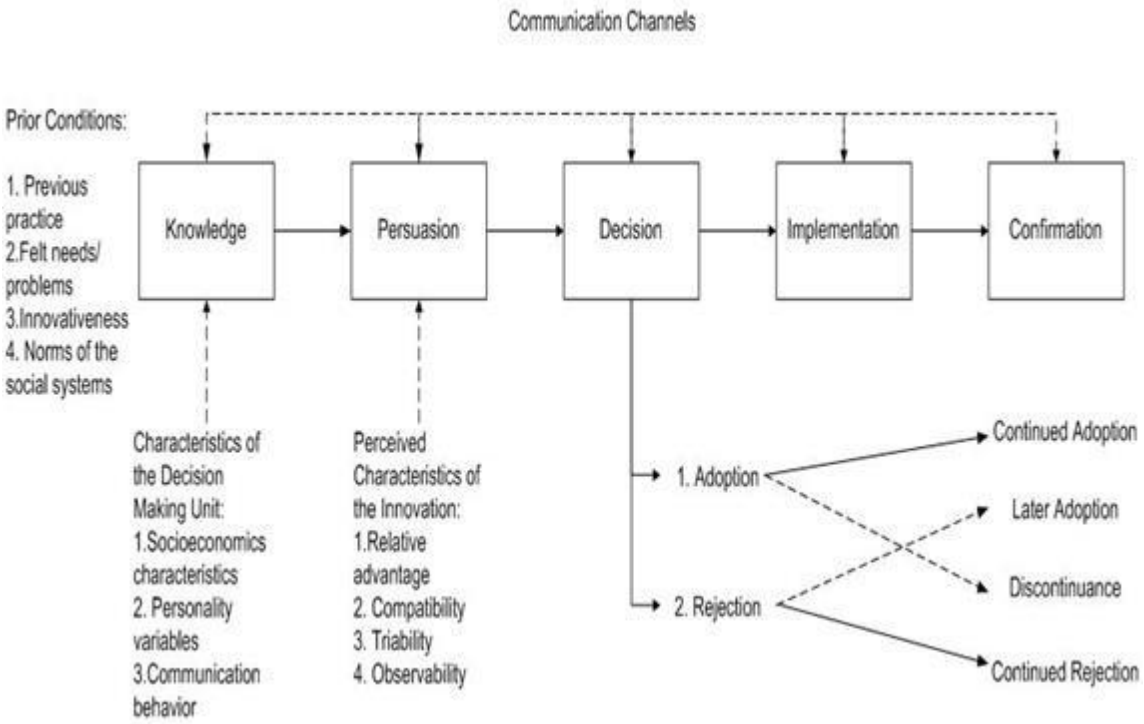

Figure 2.1: Innovation-Decision Process (or Technology Adoption Decision Process) (Rogers, 2003)

According to Rogers (1983, p.163), there are 5 stages included in this conceptualization:

1. Knowledge: the existence of innovation is exposed to an individual so that she/he gains some basic understanding of the innovation's functionalities.
2. Persuasion: favorable or unfavorable attitudes toward the innovation are formed in an individual.
3. Decision: when an individual perform activities or actions leading to the choice of adoption or rejection toward innovation.
4. Implementation: when the innovation is put into used by an individual.

5. Confirmation: when an individual requires the reinforcement of an innovation-decision already made. However, he/she can also reverse the previous decision in case the innovation's messages are conflicting.

2.2.1 Knowledge stage

Knowledge stage inaugurates when an individual is introduced about the existence of innovation and that individual can gain some knowledge of the innovation's functionalities (Rogers, 1983, p. 164). Interestingly, as stated by Rogers (1983), the individual receives the existence signal of innovation accidentally. Thus, he/she cannot actively seek for information of innovation until they know its presence. As we can see in medical field, it is because of the communication channels and messages such as salesperson and marketing campaigns, the doctors or physicians are able to obtain information of new existing drugs (Coleman, 1966). It is the same story with mobile wallet. In order to make it acknowledged (in India), the business stakeholders have a job to give out the information by advertising, blogging, or creating seminars to inform the image of mobile wallet.

In addition, Rogers (1983, p.167) raised a paradox of need versus awareness in this stage. He questioned "Does a need precede knowledge of a new idea, or does knowledge of an innovation create a need for that new idea?". He explained that there had not been a research can answer this question properly (so far until 1983). When a person has knowledge of an innovation, a need might be created and vice versa; when he is in need, he will seek for the information. Thus, knowledge of innovation existence can lead to the motivation of consumer adoption (Rogers, 1983, p. 166).

Types of knowledge and how they influence the awareness of consumers were also discussed by Rogers (1983). However, this paper will not focus much on this part.

2.2.2 Persuasion stage

Knowing about the innovation does not mean that an individual will adopt and use it. The characteristics of decision making unit will have effects on the adoption. They are the social status, belief…such as individual might not find the new innovation is useful for him or it does not fit into his current situation. To make the information become relevant, the knowledge will continue going through the innovation-decision process. This is where the persuasion stage takes place.

In this stage, the individual forms a favorable or non-favorable attitude toward innovation (Rogers, 1983, p. 169). The information that individual has perceived now will lead to psychological thinking. He will search for more information about the innovation. Hence, it is important that where he finds the knowledge, what messages he receives, and how he interprets those messages in favor of his own understanding.

Innovation can be viewed as highly uncertain (Feldman, 1994). For that reason, it generates certain uncertainty level in individual leading to the feeling of need for social-reinforcement of his attitudes toward new idea (Rogers, 1983, p. 170). He would like to compare his opinions to others to make sure he is "walking" on the right track. Partly, mass media also plays some role in this reinforcement.

The consumers tend to ask these questions in this stage: "What are the innovation's consequences?", "What will its advantages and disadvantages be in my situation?" (Rogers, 1983, p. 170). Mobile wallet creators should be able to answer those queries. The favorable or non-favorable attitude toward mobile wallet depends heavily on this stage. The formation of these attitudes does not result directly in adoption or rejection. Nevertheless, it does form a tendency. It is undoubtedly that when someone tells us about the positive image of a new idea, we are often motivated to adopt it (Rogers, 1983, p. 170). Yet in case the innovation is undesirable, support for rejection will be sought [instead of adoption] (Seligman, 2006, p. 116).

2.2.3 Decision stage

Decision stage occurs when an individual (or other decision-making unit) involved in activities that lead to adoption or rejection an innovation. Adoption is understood as the decision to use an innovation. And rejection is a decision not to adopt an innovation (Rogers, 1983, p. 172).

In reality, the innovation will not be adopted by consumers if they have not yet tried to use it. Checking the innovation to see whether it is useful for one's situation is necessary. In some cases, the innovation cannot be put for trial. Therefore, innovations that can be divided for testing will have a better chance to be adopted in a more rapid speed of adoption (Rogers, 1983, p. 172). A similar view is held by Seligman (2006) that "partial adoption and vicarious trial adoption allow the individual to encounter new stimuli for further adjustment of perceptions of the technology and for understanding how the innovation can be incorporated into the

individual's environment" (p. 117). One of the suggestions to facilitate the trial of innovation is distribution of free samples to consumers/clients (Rogers, 1983). With mobile wallet, it is not an easy task to implement the trial due to the fact that it relates to a number of stakeholders for the operation, which can lead to high cost. It perhaps needs marketing departments to create brilliant and innovative solutions to put mobile wallet on trial.

It is hard to forget that in this stage, an individual can reject the innovation for various reasons. There are 2 different types of rejections developed by Eveland (1979):

1. Active rejection: when an individual consider the adoption of innovation (with or without trial) but then he decides not to adopt it.
2. Passive rejection (or non-adoption): when an individual never considers to adopting the innovation.

2.2.4 Implementation stage

Implementation occurs when an individual (or other decision-making unit) puts an innovation to use (Rogers, 1983, p. 174) and seeks technical information for the implementation (Seligman, 2006). Rogers (1983) pointed out that consumers in this stage will likely have these questions "Where do I obtain the innovation?", "How do I use it?", "What operational problems am I likely to encounter and how can I solve them?" (p. 174). Relating it to mobile wallet case, the companies should have responsibilities to make these answers available in the market, as well as offer technical assistance when needed to users.

There is a term called "reinvention" of technology which was discussed by Rogers (1983) in this implementation stage. It described "a degree to which an innovation is changed or modified by the user in the process of its adoption and implementation" (Rogers, 1983, p. 176). Reinvention is simply adaptive, and possibly evolutionary (Swanson, 1994).

When the new innovation becomes institutionalized and regularized as part of the adopter's ongoing activities, the implementation stage might ends at this point. In addition, it might present for the termination of the whole innovation-decision process for most users. Yet for some, it can continue to the last official stage "the confirmation stage" (Rogers, 1983, p. 175).

2.2.5 Confirmation stage

This is the last stage in the innovation-decision process model. The individual (or other decision-making unit) seeks the reinforcement for the innovation decision which he already made, but he may reverse this decision if he encounters conflicting messages from the innovation (Rogers, 1983, p. 184).

The individual may be encouraged by dissonance and he may reverse his decision depending on the information he receives (Seligman, 2006, p. 117).

To prevent the "conflicting message" from happening, Rogers (1983) suggested that the agents should have additional duty of providing supporting messages to consumers. He expressed that one of the possibilities of high rate of discontinuance in innovations is that the agents think that adoption will continue automatically once it is secured. But without having continued effort toward consumers, the discontinuance will take place; because negative messages about innovation of course exist in most consumers' system (Rogers, 1983, p. 186).

2.3 Possible factors influencing consumer adoption of mobile payment

Niina Mallat, a researcher from Helsinki School of Economics in Finland, has published a research paper called "Exploring Consumer Adoption of Mobile Payments – A Qualitative Study" in 2006. This paper examined the consumer adoption toward mobile payments using qualitative research method. The empirical data therefore was collected by the establishment of 6 focus group sessions and were carried out in late 2002 from interviewees who are from Helsinki metropolitan area in Finland (Mallat, 2006).

The research resulted in this table below:

Adoption determinant	Contributing factors	Proposed effect on adoption	Effect dynamic depending on use situation
Relative advantage	▪ Time and place independent purchases ▪ Queue avoidance ▪ Enhanced payment instrument availability ▪ Complement to cash	+ + + +	yes
Compatibility	▪ High with digital content and services ▪ High with small value purchases at POS ▪ Low with large value purchases	+ + -	no

Table 2.1: Factors affecting consumer adoption of mobile payments (Mallat, 2006, p. 11)

The findings list general adoption determinants and related contributing factors that are particularly meant for mobile payment environment. The last 2 columns on the right demonstrate whether the factors have a positive or negative effect on adoption of consumer and whether those effects can change dynamically depending on use situation (Mallat, 2006, p. 10).

Why this table is presented in this research paper? The reason is that, mobile wallet also belongs to the category of mobile payment. More or less, the mobile wallet adoption will be influenced partly or entirely by the findings above.

CHAPTER 3

RESEARCH METHODOLOGY

3.1 Introduction

This part will explain thoroughly how this research paper is conducted. The aim of this research is to answer the fore-mentioned research questions in section 1.3, which are:

a. What factors /and how those factors influent the adoption of mobile wallet from the mobile consumers in India?

b. How mobile wallet has been adopted by consumers in India?

In order to reach this goal, it is necessary to understand the researched topics represented in these key words: mobile wallet, technology adoption, consumer adoption, and possible factors which can influent the adoption.

3.2 Research method and data collection

The results of a qualitative research conducted by Niina Mallat (introduced in section 3.3) have been found and used as important secondary data to support for the answer of the question "What factors influent the adoption of mobile wallet from the mobile consumer in India?" This qualitative research did an effective and qualitative work in finding the possible influencing factors toward mobile payment. As mentioned in section 3.3, it can also apply to mobile wallet case.

This research utilizes quantitative method in order to get the statistic results from respondents. Not only quantitative method emphasizes on testing and verification, but also it focuses on facts and /or reasons for social events. Moreover, its results can be generalized by population membership (Ghauri P., Grøhaug K., 2010). Using quantitative method will be able to answer the research questions how the factors influent the adoption of mobile wallet in India and how mobile wallet has been adopted in India (so far).

Secondary data and primary data have been selected to define key words: mobile wallet, technology adoption and consumer adoption. The most used model of Technology Adoption Decision Process (Zenobia, 2008) is rooted from the

Innovation-Decision Process which was created in 1962 by Rogers and developed throughout decades (also by him). The main primary data collected for this research paper is dated in 1983 by Rogers (3rd edition). And secondary data was gathered from dynamic sources including internet sources and variety of journals.

3.3 Research design

The quantitative method used is Questionnaire. The questionnaire was designed via online survey tool called Survey Monkey www.surveymonkey.net (see Appendix 1). It is formed based on the influencing factors of Mallat's research (2006) to test mainly the Knowledge Stage, Persuasion Stage and Decision Stage (and partly Implementation Stage) of the Innovation-Decision Process (Rogers, 1983). The respondents are introduced about mobile wallet at the beginning of the survey including word explanation and a video example sourced from YouTube: a video made by Westpac Company in New Zealand, which advertises about its mobile wallet (source http://youtu.be/icSaO7y4er8). The video was presented due to the fact that many consumers do have the knowledge of mobile wallet, yet they can misunderstand it with other general terms (such as mobile payment). Hence, a direction is drawn at the beginning of the questionnaire to guide respondents to the right thought.

The questionnaire was sent to potential respondents who reside in India via Emails Facebook messages, Whatsapp messages and LinkedIn posts.. They are mostly friends and friends' circles. The duration for response is two weeks.

3.4 Validity and reliability of the research

From theoretical framework, the validity of this research is rather high because the research is based on qualified academic literature. In addition, the questionnaire has been pilot-tested to secure the accuracy and usefulness. .

The quantitative method used is Questionnaire. The questionnaire consisted of both Likert scale and demographic questions. Likert scale questions were measured on 1 to 5 scale. Where 1 represented strongly disagree and 5 represented strongly agree. It is formed based on the influencing factors of Mallat's research (2006) to test mainly the Knowledge Stage, Persuasion Stage and Decision Stage (and partly Implementation Stage) of the Innovation-Decision Process (Rogers, 1983). The respondents are

introduced about mobile wallet at the beginning of the survey including word explanation.

The research uses quantities methods to deduct statistics about the adoption of mobile wallet in India. Using quantitative method will be able to answer the research questions how the factors influent the adoption of mobile wallet in India and how mobile wallet has been adopted in India (so far).

CHAPTER 4

DATA ANALYSIS

4.1 Introduction

As mentioned in section 3, response from 88 respondents was received out of which 86 responses were found to be valid. Questionnaire was divided into 4 parts.

4.2 Demographic data

Question 1: Gender

Majority of respondents were males. Almost 21% of respondents were Females.

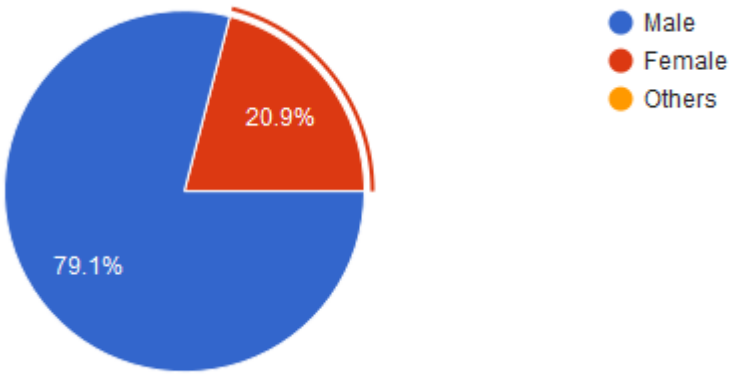

Figure 4.1: Gender of the respondents

Question 2: Age

Respondents were of age 18 to 34 with majority (55.8%) being less than 24 years of age.

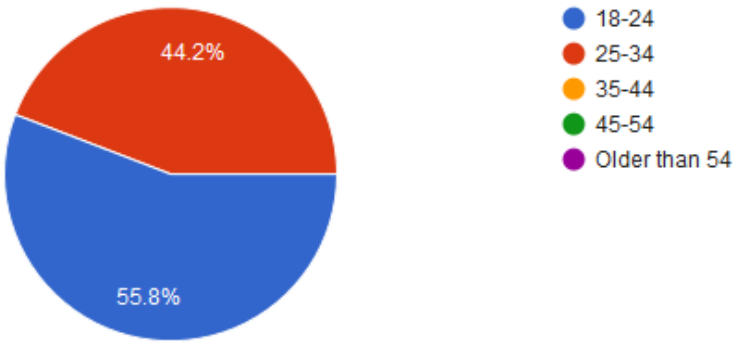

Figure 4.2: Age of the respondents

Question 3: Location

79% of the respondents were from Delhi NCR. 5% of the respondents were from Mumbai. 5% of the respondents were from Pune. 4% of the respondents were from Bangaluru. 7% of the respondents were from various cities like Jabalpur, Satara and Chennai.

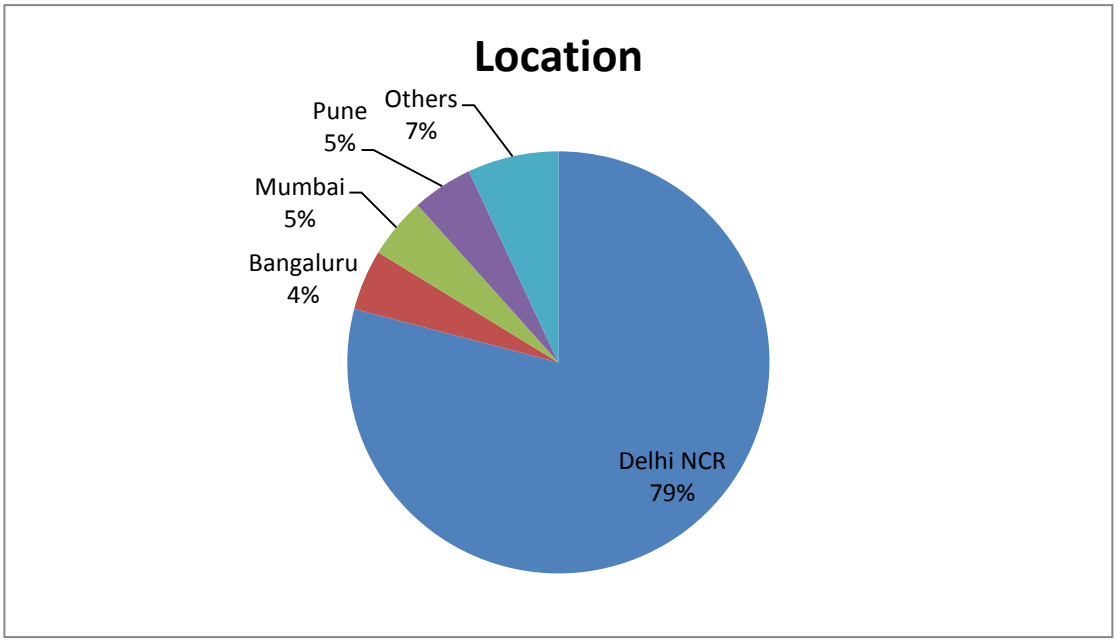

Figure 4.3: Location of the respondents

Question 4: Making online payments on smart phone

53.5% of the respondents regarded themselves as regular users of mobile online payment systems. While 41.9% of the respondents considered using mobile for purchasing online.

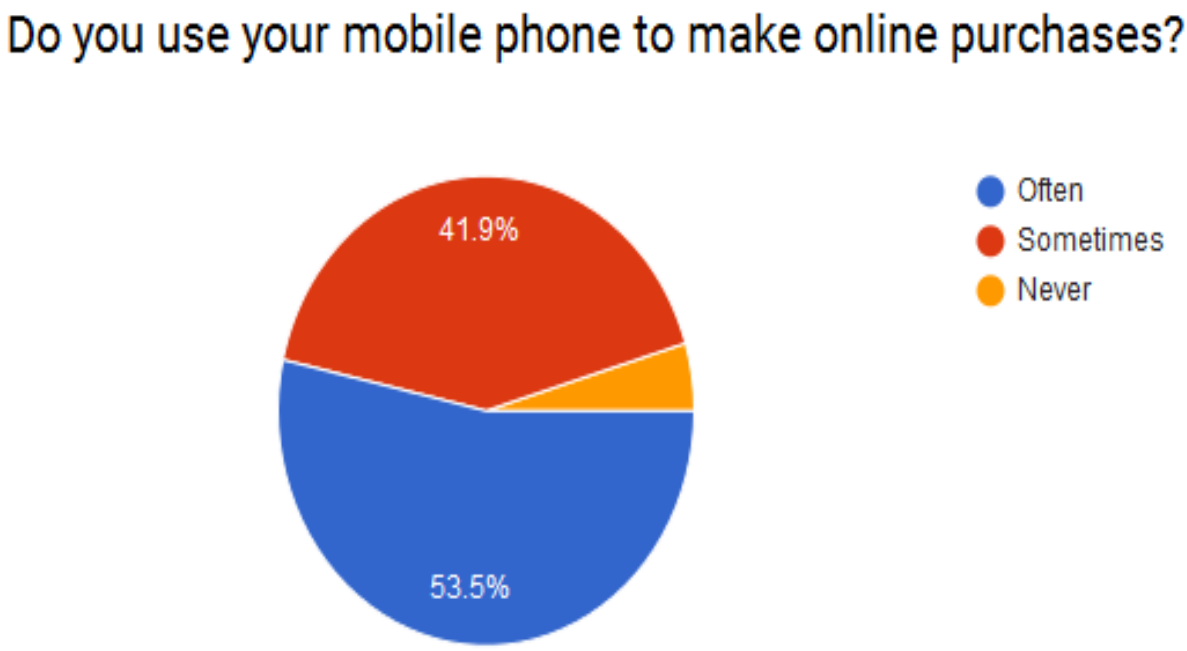

Figure 4.4: Making payments on the smart phone

Question 5: Payments method used on mobile for online purchase

Most of the respondents use multiple payments system on the mobbile. 58% of the respondents use Net banking for online purchase on mobile while 52% use Debit card as a payment option. Online wallets are third most popular payment system after Net Banking and Debit card.

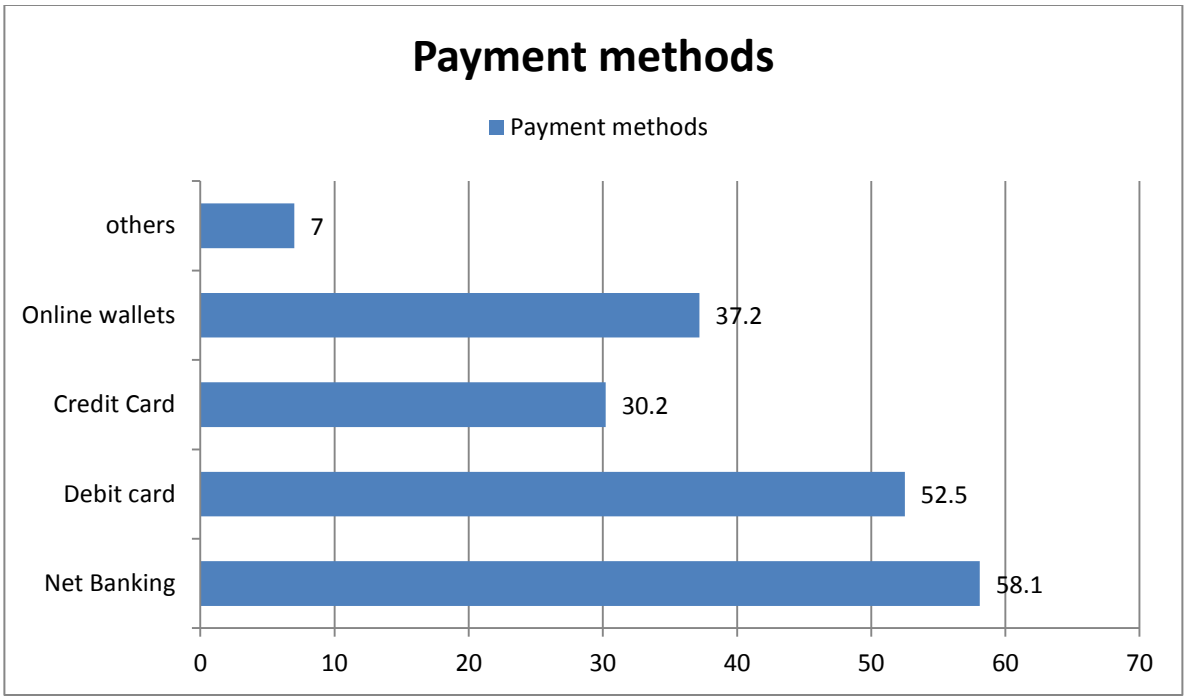

Figure 4.5: Payment methods

Question 6: Knowledge sources

Most of the respondents got the information about mobile wallets through social media. 59.5 % of the respondents got the information about mobile wallets through social media. Next largest source was Television.

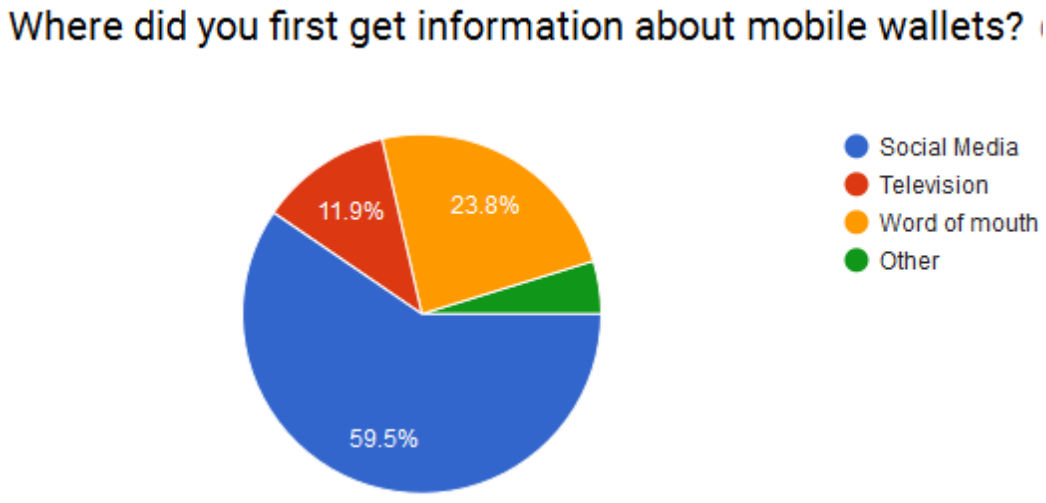

Figure 4.6: Knowledge sources

Question 7: Familiarity with online wallet (5 being extremely familiar and 1 being not familiar at all)

Most of the respondents were familiar with the concept of online wallet.

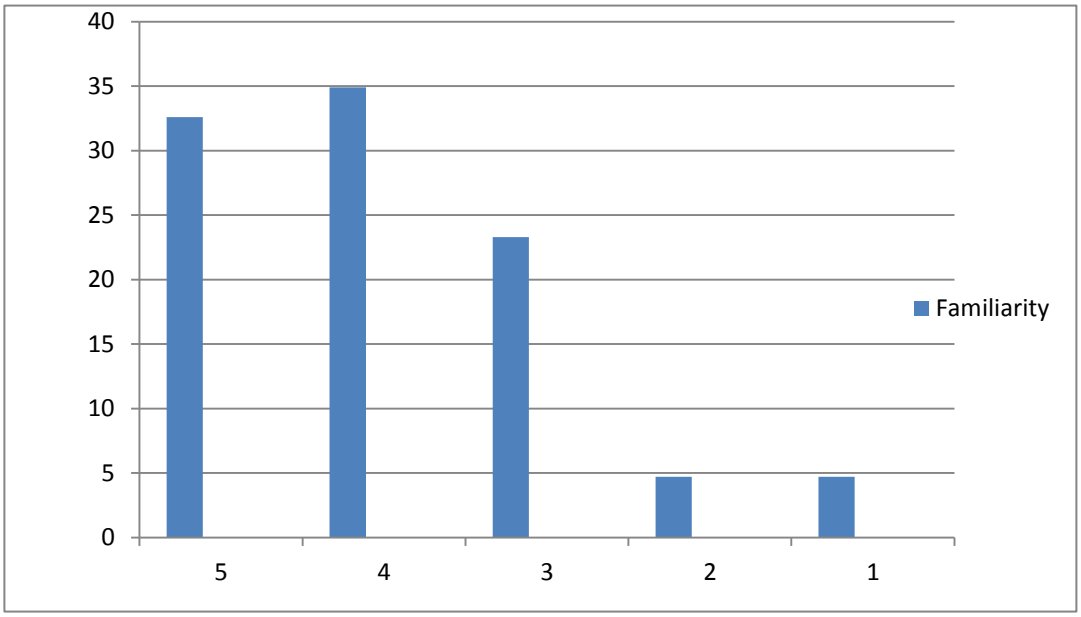

Figure 4.7: Familiarity with online wallet

Question 8: Mobile wallet preference

PayTm turned out to be the most preferred brand for mobile wallet service with almost 3 quarters (72%) of votes. Other brands with significant votes were Mobikwik (12%) and Freecharge (12%)

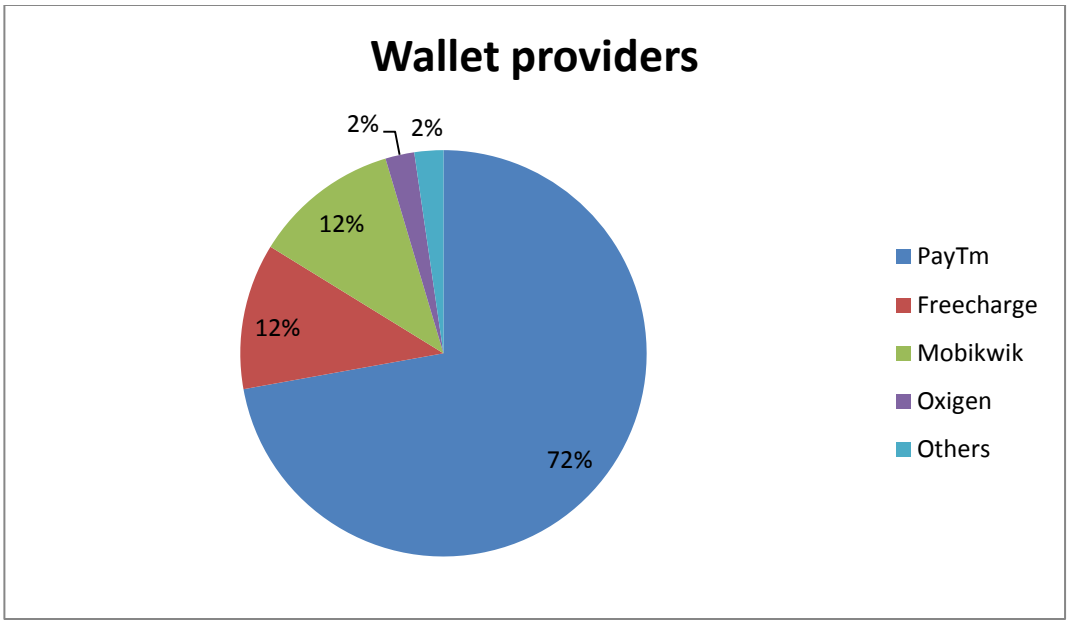

Figure 4.8: Mobile wallet preference

Question 9: Mobile wallet satisfaction

Most of the customers of mobile wallet customers were satisfied with their mobile wallet service providers. 76% of the customers were satisfied with their mobile wallet service provider.

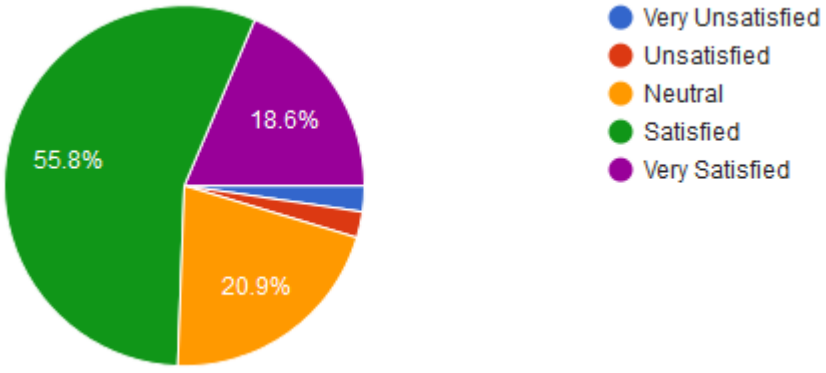

Figure 4.9: Satisfaction of mobile wallet users

Question 10: Use of mobile wallet in a physical store

A small fraction has used his mobile wallet for the purchase in physical store. Only 28% has agreed purchasing ith mobile wallet in a physical store.

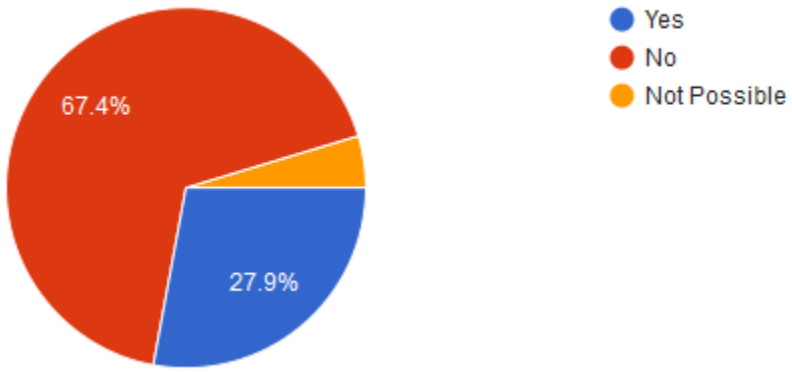

Figure 4.10: Payment at physical store using mobile wallets

Question 11: I believe the mobile wallet is useful for buying things.

Most of the respondents find the concept of mobile wallet useful.

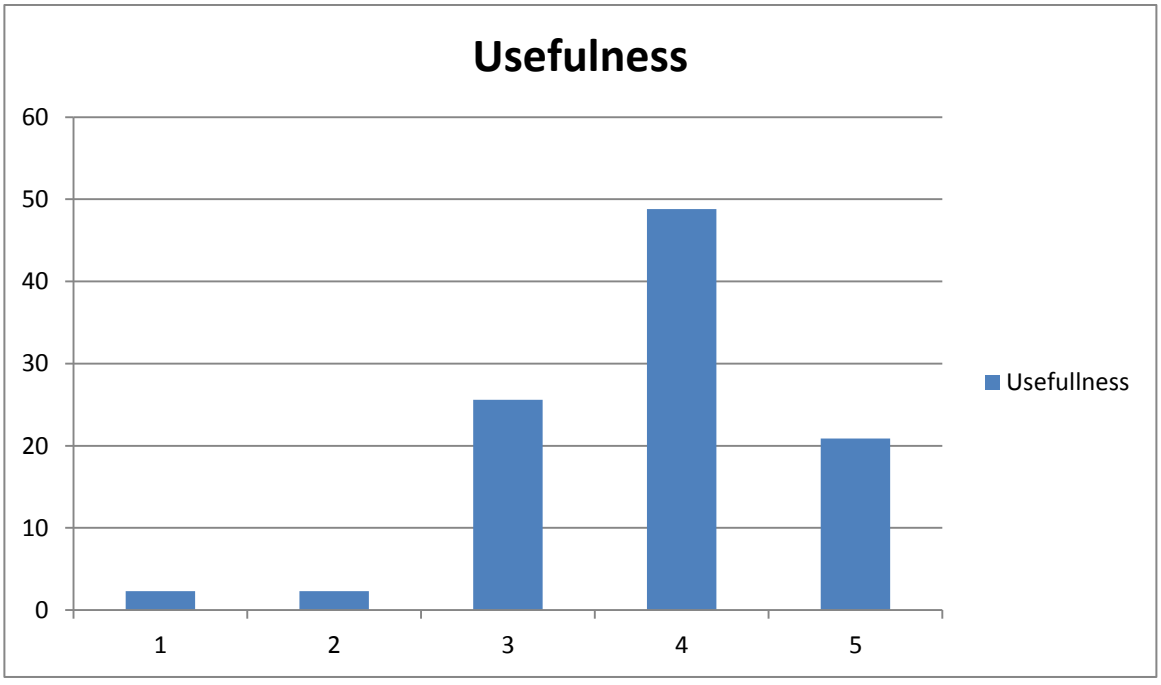

Figure 4.11: Usefulness of mobile wallets

Question 12: Perceived ease of use

Respondents found the working of mobile wallets easy to use. As the mobile wallet applications has designed the application for mass use.

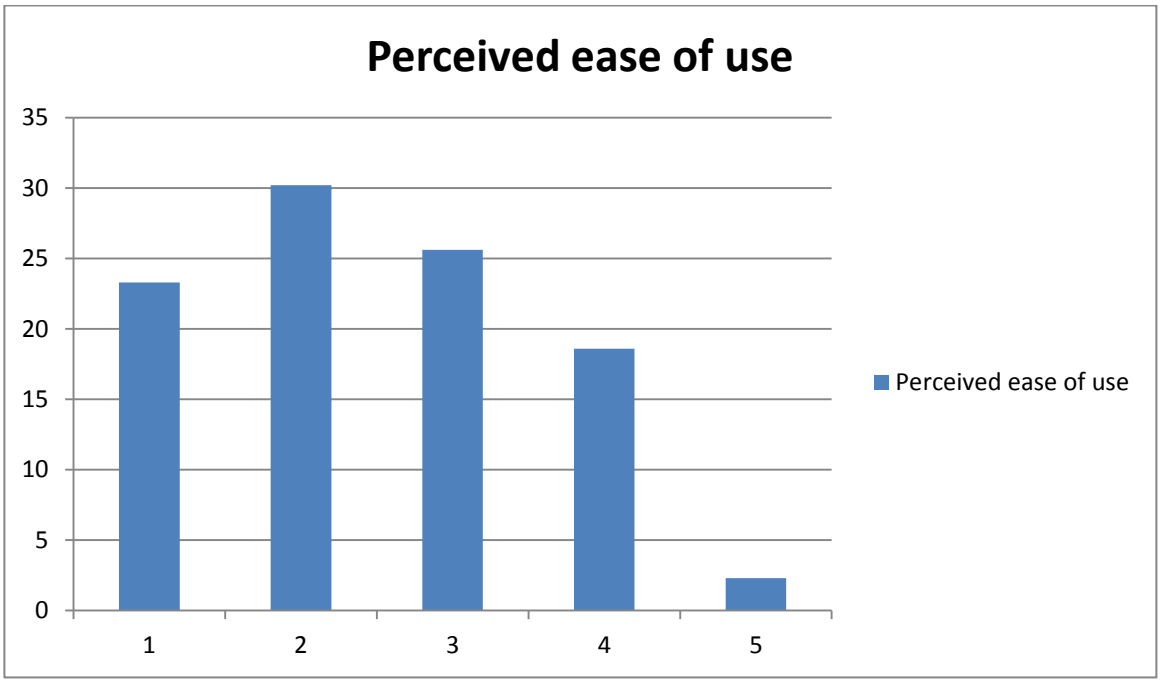

Figure 4.12: Perceived ease of use

Question 13: It is easy to use mobile wallet more frequently after trying them out.

Most of the respondents found that the use of mobile wallets only becomes only easier with use.

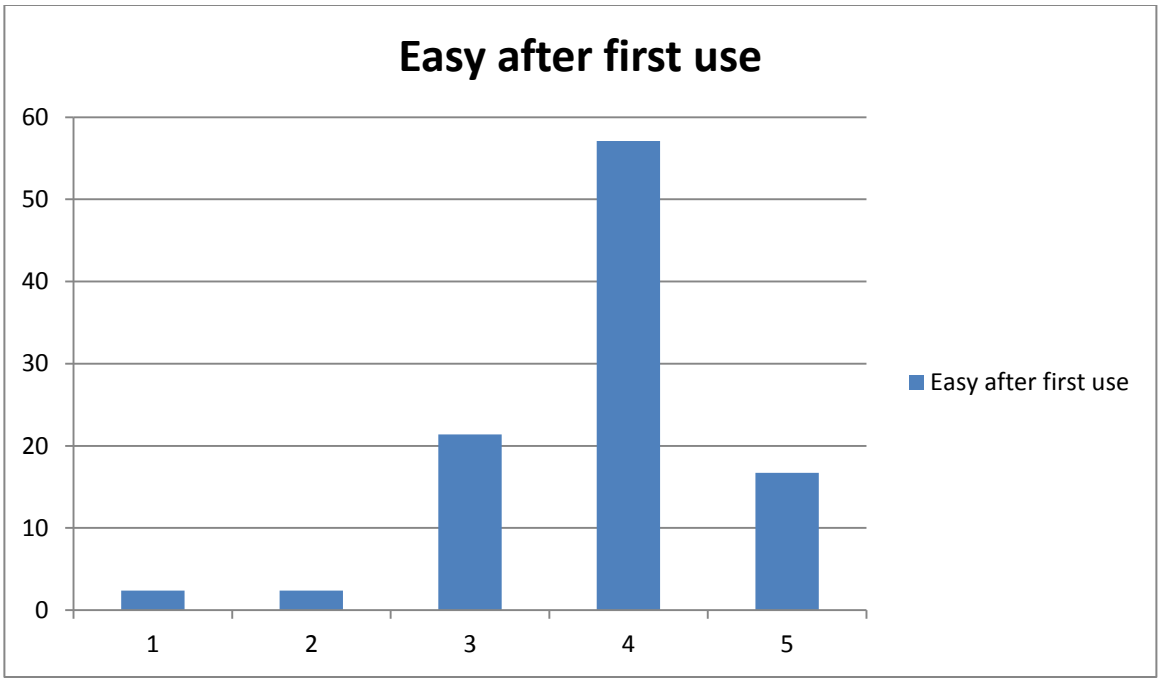

Figure 4.13: Ease of use after first encounter

Question 14: I believe smart phone is not a secure system to save my credit cards and personal information on it.

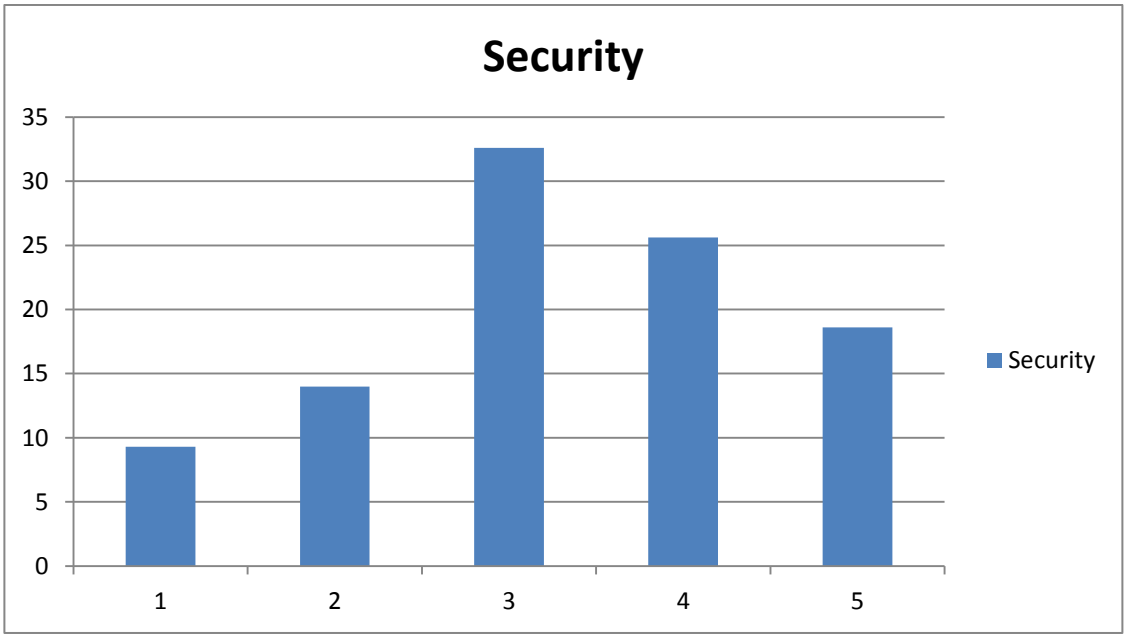

Figure 4.14: Secured transactions

Question 15: I do not trust the service providers of mobile wallet.

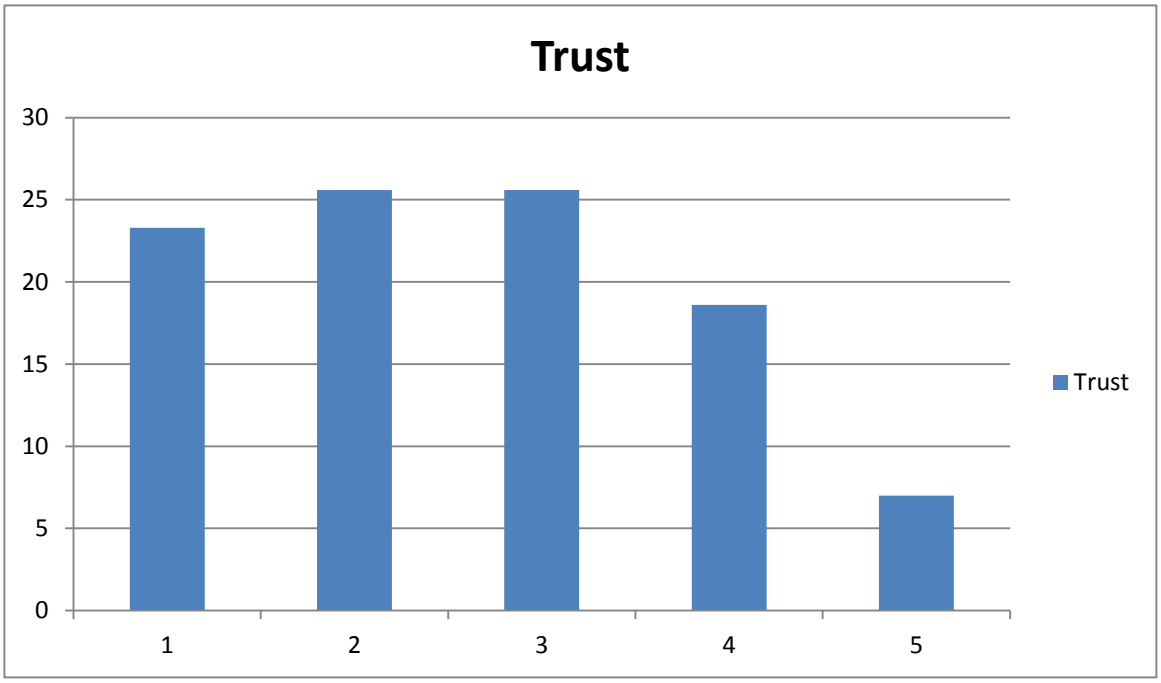

Figure 4.15: Trust on service providers

Question 16: Using the mobile wallet is influenced by friends and social contacts.

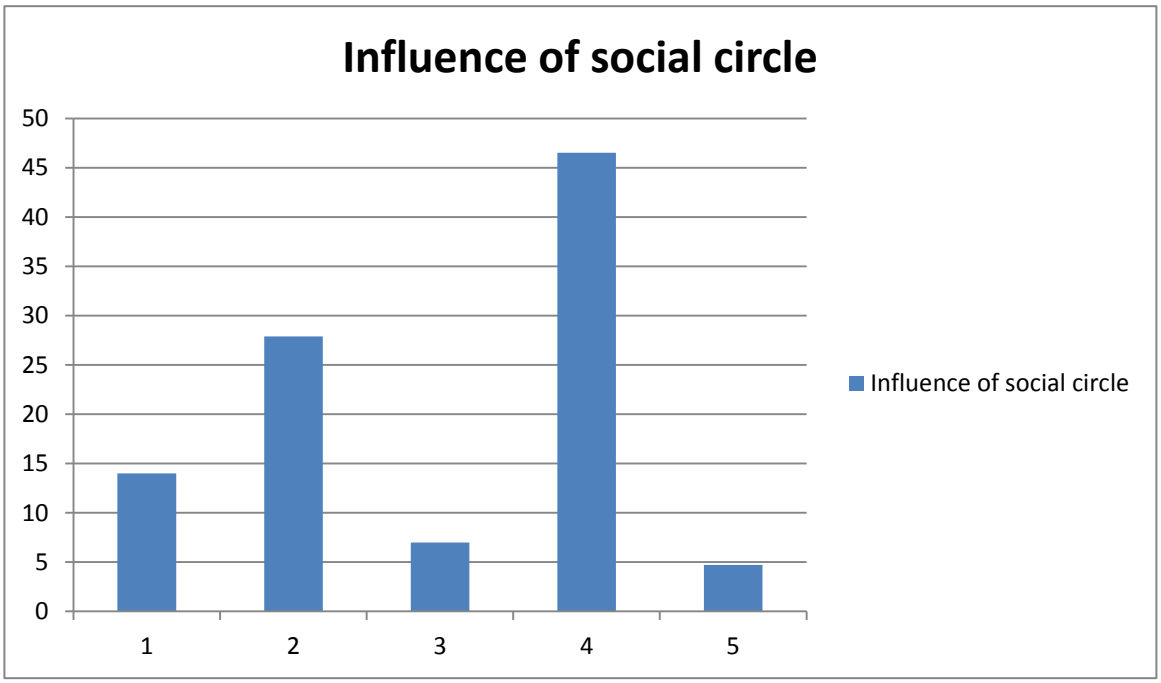

Figure 4.16: Influence of social circle

Question 17: Rate the factors which could affect your decision to use mobile wallets

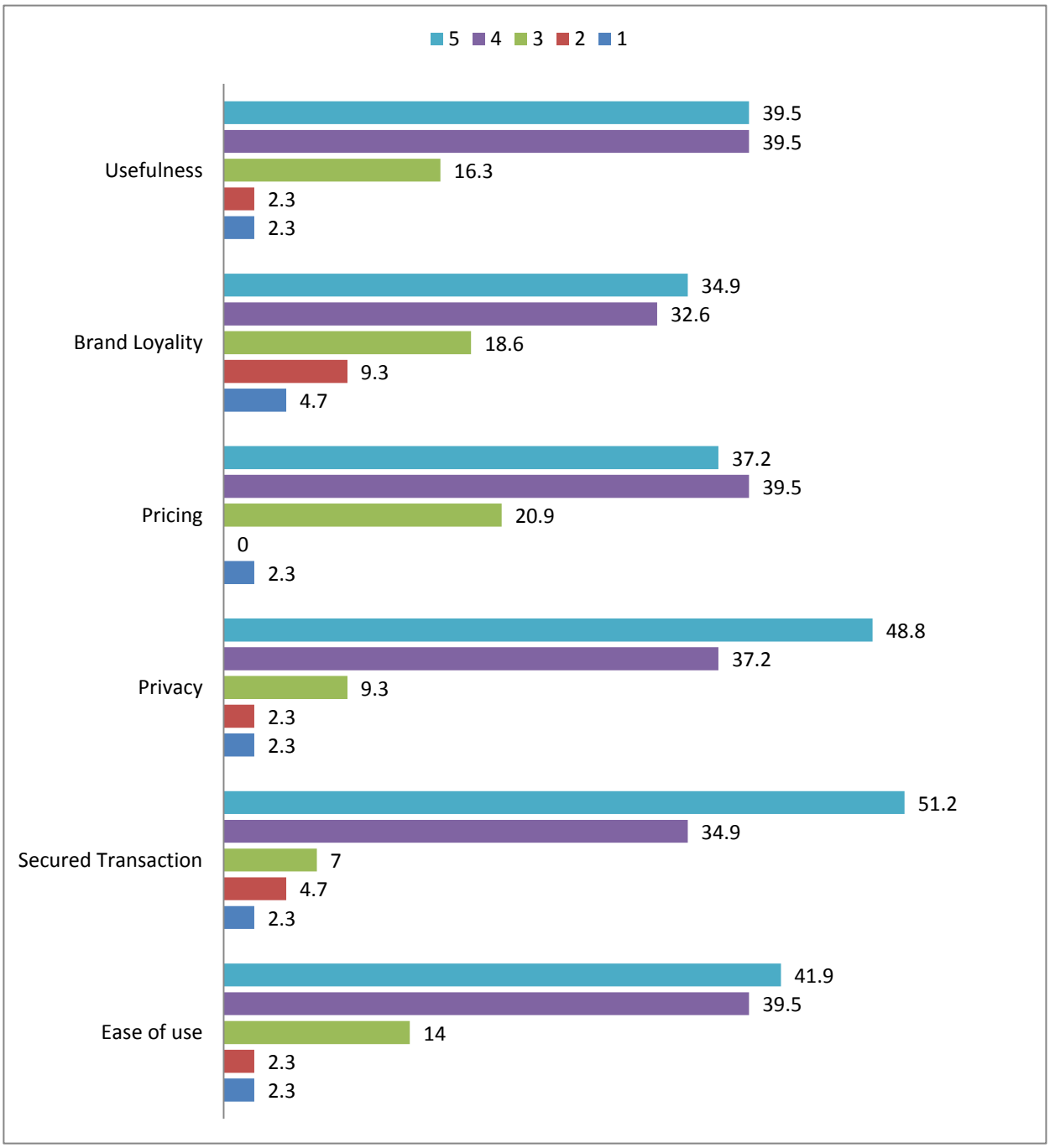

Figure 4.17: Influencing factors

4.3 Limitations of the study

There are of course existing limitations. First of all is that the size of sample is quite small. India has close to 1.21 billion populations (According to the census data of 2011). No. of smart phone users in India according to official data is 76 million (http://indiainbusiness.nic.in). As stated earlier, there are 86 responses hence the sample size is considerably small.

Another limitation is that this research needs to have qualitative method as an extra one. The questionnaire was designed based on "ready-made" influencing factors of a similar field, which might not fulfill 100% of accuracy.

CHAPTER 5

CONCLUSION

The literature review together with the data collection has satisfyingly answered to two research questions mentioned in section 1.3: (1) what factors and how those factors influent the adoption of mobile wallet from the mobile consumer in India and (2) how the mobile wallet has been adopted in India.

As a result, 94% of sample group has used mobile for online purchases. The result illustrates clearly that the adoption image of mobile wallet among consumers in India is at the advanced stage of the Innovation-Decision Process: Knowledge Stage and Persuasion Stage (Rogers, 1983). Making them move to the Decision Stage where they actually start using mobile wallet seems to be a challenge to mobile wallet businesses in India. However, the good news is that based on the available information that consumers have been receiving mainly from the internet, consumers in India express positive attitudes toward mobile wallet. This result leads to a generalized conclusion that there is a market for getting consumers in India using mobile wallet. To be successful in Indian market or not now depends heavily on the marketing strategies of mobile wallet companies as well as the financial policy makers in India.

The findings also reveal how the influential factors affect the adoption of consumers. Security issues in transaction and privacy are the most concerned factors among users. 51% of the sample group takes secured transaction as very important factor and 49% of them consider secured privacy a very influential element. Only when there is effective solution for these burdens, there will be more consumers start to use mobile wallet.

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ANNEXURE

Questionnaire

DEMOGRAPHIC INFORMATION

1. Name_____

2. Gender
   ☐ Male ☐ Female

3. Which category describes your age?
   ☐ 18-24
   ☐ 45-54
   ☐ 25-34
   ☐ 55-64
   ☐ 35-44
   ☐ 65 or above

4. City
   _____

5. Do you use your mobile to make online purchases?
   ☐ Often ☐ Rarely ☐ Never

6. Which payment methods have you used to make online purchases with your mobile?(can select multiple answers)
   ☐ Net banking ☐ Credit card ☐ Debit Card ☐ Online Wallet ☐ Others (kindly Mention)……..

7. How Familiar are you with the idea of Online wallet?(On a scale of 1 to 5, with 1 being not familiar and 5 being very familiar)
   ☐ 1 ☐ 2 ☐ 3 ☐ 4 ☐ 5

8. Where did you first get information about online wallet?
   ☐ Social media ☐ Television ☐ Word of mouth ☐ Other_____

9. Which online wallet provider would you prefer?
   ☐ PayTm ☐ freecharge ☐ Mobikwik ☐ Oxigen ☐ Citrus Pay ☐ Flipkart money ☐ mRupee

10. Why do you prefer the selected service provider?

    _____

11. How would you rate your online wallet experience?

    ☐ Very unsatisfied ☐ Unsatisfied ☐ Neutral ☐ Satisfied ☐ Very Satisfied

12. Have you used online wallet to make purchase in a physical store?

    ☐ Yes ☐ No ☐ not possible

13. Indicate the extent to which you agree with each of the following statements

	Strongly disagree	**Disagree**	**Neutral**	**Agree**	**Strongly agree**
I believe the mobile wallet is useful for buying things.					
Hard to use mobile phone for purchasing things.					
It is easy to use mobile wallet more frequently after trying them out.					
A trial convinced me that using mobile wallet is better than using credit/debit cards					
I believe smart phone is not a secure system to save my credit cards and personal information on it.					
I do not trust the service providers of mobile wallet.					
Using the mobile wallet is influenced by friends and social contacts.					

14. Please rate the following factors which could affect your decision to use mobile wallets.

	Very Unimportant	**Unimportant**	**Neutral**	**Important**	**Very Important**
Ease of use					
Secured transaction					
Privacy					
Pricing					
Convenience					
Brand Loyalty					
Usefulness					

Adherence Sheet

Particulars	Last Date	Signature of Mentors	
Title of the Project/Area of Topic Finalization	21-Jan-16		
Literature Review/Objectives of the study	02-Feb-16		
Methodology	18-Feb-16		
Questionnaire/Data Collection tools	03-Mar-16		
Data Collection	17-Mar-16		
Analysis	24-Mar-16		
Conclusion and Recommendations	01-Apr-16		
First Draft	15-Apr-16		
Final Report/Binding and Submission	03-May-16		