

Bachelor's thesis

Bachelor of Business Administration (BBA)

International Business

2014

Ngoc Doan

CONSUMER ADOPTION IN MOBILE WALLET

A Study of Consumers in Finland



TURUN AMMATTIKORKEAKOULU
TURKU UNIVERSITY OF APPLIED SCIENCES

Ngoc Doan

CONSUMER ADOPTION IN MOBILE WALLET

The primary objective of this research is to understand about the consumer adoption status of mobile wallet within the research area limited in Finland. It also measures the market situation of mobile consumers toward mobile wallet. Practically, this research will be useful for the business stakeholders of mobile wallet who would like to expand the business to earn more market shares. It is also helpful for individuals such as students to improve the knowledge of mobile wallet which can possible lead to further research.

The supporting theoretical framework is sourced from Diffusion Innovation book written by Everett Rogers (3rd edition) from which he presented the Innovation-Decision Process model. Rogers defined it as "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". The framework was used intensively and effectively in this research.

Research was designed in quantitative method using questionnaire which was sent to potential respondents who reside in Finland (including Finnish and other nationalities). The findings illustrate clearly that the adoption of mobile wallet among consumers in Finland is only at the beginning stages of the Innovation-Decision Process. It also shows that consumers in Finland express positive attitudes toward mobile wallet. The research includes several findings which can benefit the stakeholders of mobile wallet.

Suggestions for future research include the studying of different aspects in mobile wallet, in addition to the consumer behaviors toward mobile wallet in Finland using specific case study.

KEYWORDS:

Mobile payment, mobile wallet, diffusion innovation, innovation-decision process.

OPINNÄYTETYÖ (AMK) | TIIVISTELMÄ
TURUN AMMATTIKORKEAKOULU

Koulutusohjelman nimi | Suuntautumisvaihtoehdon nimi

Opinnäytetyön valmistumisajankohta | Sivumäärä

Ohjaaja(t)

Tekijä(t)

OPINNÄYTETYÖN NIMI

(Kirjoita tiivistelmä tähän, maksimi merkkimäärä on 2000).

ASIASANAT:

(Kirjoita asiasanat tähän. Etsi sopivia asiasanoja ONKI -ontologiapalvelun YSA (Yleinen suomalainen asiasanasto) ja MUSA (Musiikin asiasanasto) asiasanastoista.

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LIST OF ABBREVIATIONS (OR) SYMBOLS

NFC	Near Field Communication
GSMA	Group Special Mobile Association is formed by the Confederation of European Posts and Telecommunications (CEPT) to design a pan-European mobile technology in 1982.
USA	United States of America
VP	Vice President
Inc.	Incorporation
POS	Point-of-sale
m-commerce	Mobile-commerce
GSM	Global System for Mobile Communications
QR Codes	Quick Responsive bar codes
PIN	Personal Identification Number
TADP	Technology Adoption Decision Process
SMS	Short Message Service

1 INTRODUCTION

1.1 Research background

In today-world, smartphone has become important part of everyday life. As it has become more affordable, the number of smartphone users has increased dramatically. The quantity of smartphone consumers surpassed 1 billion in 2012 and predictably it will reach 1.75 billion in 2014 (eMarketer, 2014) . Along with smartphone production, plenty of services have been created to utilize the possible functions of smartphones. Not only smartphones are used as communication devices, but also to be used as socialized tool, entertainment tool, internet access tool, and even payment tool (Rajgopal, 2012) .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”.

Motivation of the research came from various factors. First of all, the mobile wallet is a recent term. In other words, it is a “trendy” topic that has been discussed in technical forums and financial websites in several years lately. One can see the word “Mobile Wallet” multiple times from the internet, yet he does not know what mobile wallet is. Therefore, the research is made due to personal curiosity to gain practical knowledge about mobile wallet during the research process in order to understand how consumers perceive this new technological service. Secondly, I am one of a smartphone users and I would like to exploit the capability of the phone. Other users perhaps also have this desire. For that reason, I conduct this research to observe people’s opinions about this new service.

Practically, this research will be useful for the business stakeholders of mobile wallet who would like to expand the business to earn more market shares. It is

also helpful for individuals such as students to improve the knowledge of mobile wallet which can possibly lead to further research.

1.2 Research purpose

The objective of the research is to understand about the consumer adoption status of mobile wallet with the research area limited in Finland. It also examines the market situation of mobile consumers toward mobile wallet.

1.3 Research questions

In order to achieve the mentioned purpose, it is necessary to answer the following research questions:

- a. What factors and how those factors influence the adoption of mobile wallet from the mobile consumers in Finland?
- b. How mobile wallet has been adopted by consumers in Finland?

1.4 Thesis structure

The structure of this thesis is divided into 4 main parts:

The first part is the overview of the mobile wallet including its stakeholders and possible advantages as well as disadvantages mainly discussed from the business' point of view.

The second part describes the literature review which includes several theories to support the research in understanding the adoption of consumers.

The third part mentions about the research methodology of the researched topic.

The final part is the data analysis collected from the questionnaire, which is sent to the mobile consumers who currently reside in Finland. The results will lead to the conclusion for the researched topic.

2 MOBILE WALLET OVERVIEW

2.1 Definition

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):

- Display and store coupons or account offers from businesses which users subscribed or engaged with
- Identify real time discounts and offers from different business locations

- Provide search engine and evaluation tool for restaurants and shops based on location
- Act as payment tool with credit and debit cards
- Organize receipts

2.2 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)

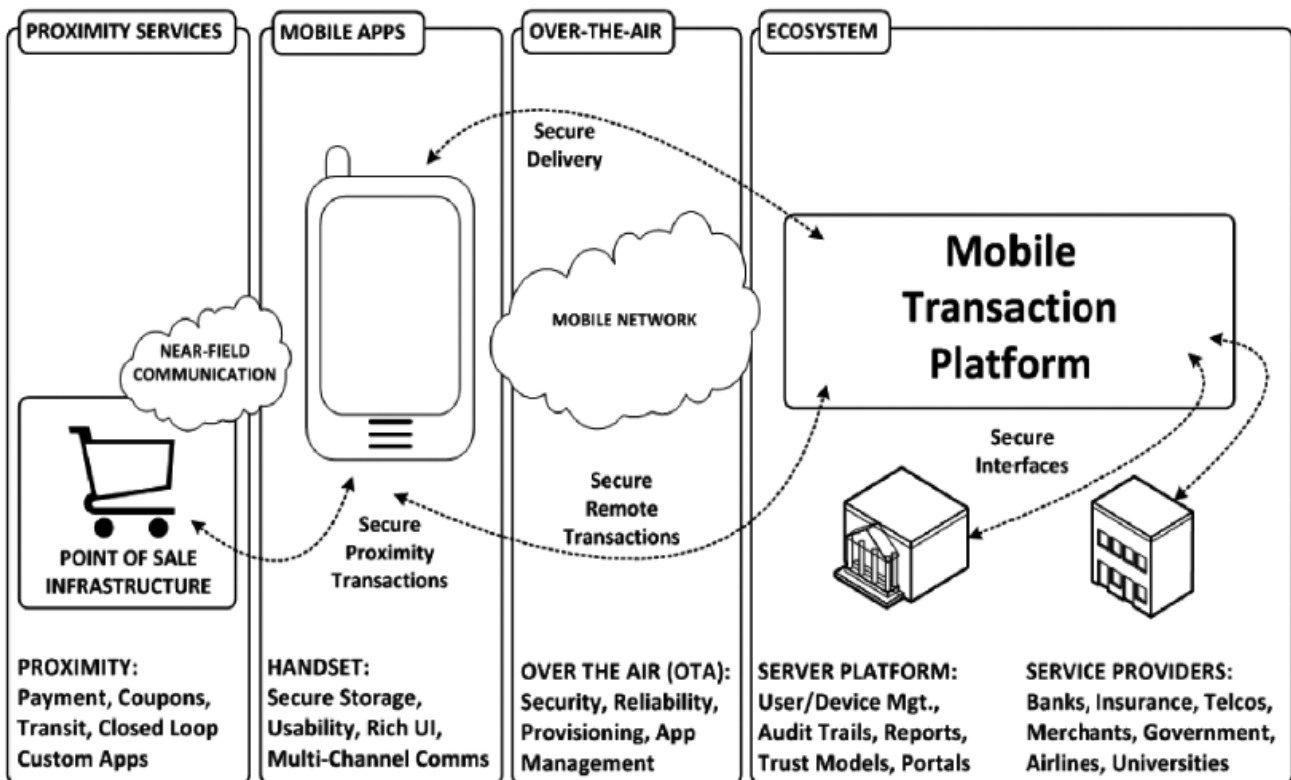


Figure 1: The official mobile wallet ecosystem (Pitroda S., Desai M., 2010)

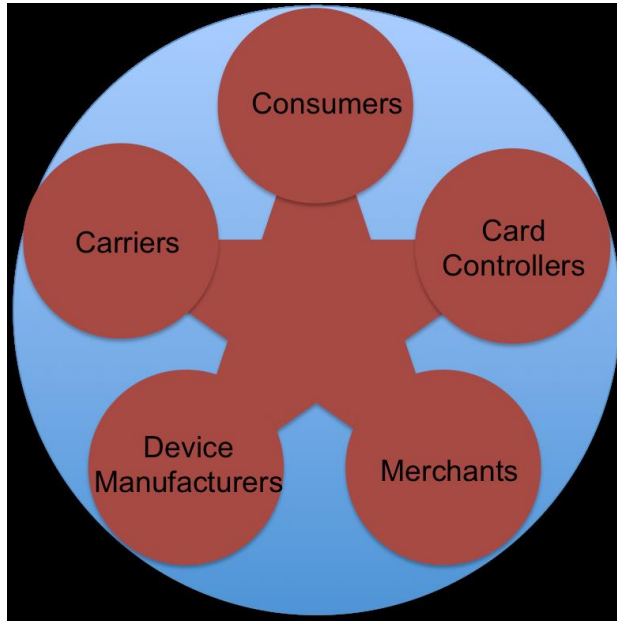


Figure 2: Mobile wallet ecosystem (Stringer, 2014)

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 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.

2.2.1 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”.

However, satisfying consumers is a difficult task. Consumers tend to shift or just migrate to other payment options that can bring convenience to them, which probably will require change in the system to fit into consumers' demand. For instance, the most foreseen scenario of change is that they have to implement the payment in digital form paid by smartphones available for their users to maintain the market share.

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 extent 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).

2.2.2 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.

2.2.3 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).

In Japan, the biggest carrier is NTT DoCoMo (DoCoMo). In Finland, TeliaSonera accounts for 49% of market share had made the company become the biggest mobile service provider (comparing to Elisa Mobile 28%, and DNA of Finnet Group 15%) (Annukka Kiiski, Heikki Hämmäinen, 2004). In order to

initiate mobile wallet in Finland, it is essential to take into consideration the technical requirements of these 3 incumbent operators. The proportion of GSM market in Finland is illustrated in Figure 3:

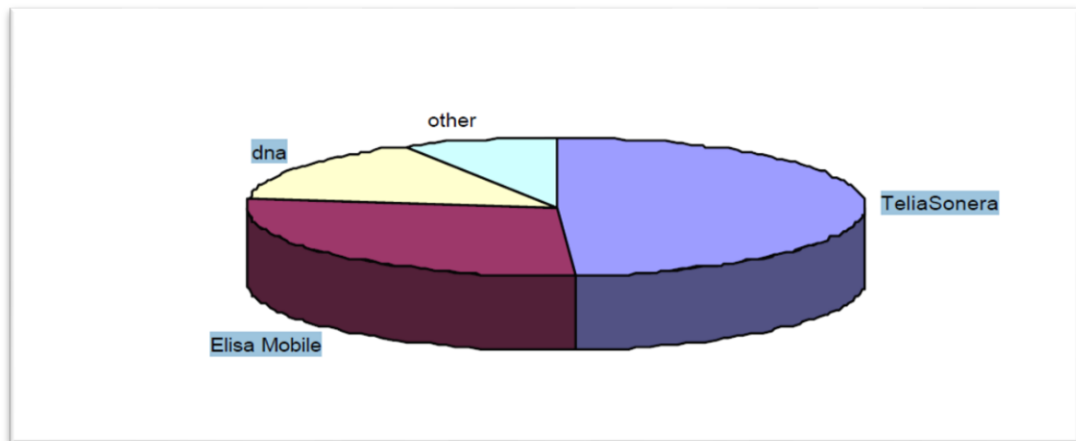


Figure 3: Market shares in the Finnish GSM market (Annukka Kiiski, Heikki Hämmäinen, 2004)

2.2.4 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).

2.2.5 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, Starbucks’ 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.

2.3 Mobile wallet technologies

a) 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). For instance, TYS (Turun Ylioppilaskyläsäätiö) is The Student Village Foundation of Turku located in Turku, Finland. They offer the laundry service for all eligible tenants. The washers and dryers in the laundry room are paid by using mobile phone payment. The payment is around 1.6 € and will be charged directly in your phone bill (or minus directly in the phone balance). If you own a

prepaid phone service, it is required to have at least 15 € - 20 € balance in your phone, depending on the mobile operator, to make it work (TYS).

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

c) 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).

d) 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).

2.4 Current scenario of mobile wallet in global scale

According to Berg Insight market research firm, 13 countries worldwide have adopted NFC mobile wallet service at the end of the first quarter in 2013.

Anyhow, the service is still only available for a small consumers' population. Another statistic given by Lars Kurkinen, telecom analyst from Berg Insight: "There are only three NFC mobile wallet services in the world that have an effective addressable market of more than 100,000 people. These three services are Google Wallet and Isis in the US and Turkcell Wallet in Turkey". The rate of market penetration calculated to 2017 for mobile wallet in North America is 82%, for Latin America will account for 68% and the rest of the world will be 39% (Kurkinen, 2013).

2.5 Some examples of available mobile wallet applications in Finland

Hesburger chain has made contract with SEQR, an app-based service belongs to Seamless, a global mobile payment company; head office is in Stockholm, Sweden. Customers from Hesburger now can pay with their smartphones using both techniques: NFC or QR code, together with loyalty programs and promotions offered by Hesburger (TheDigitalBankingClub, 2014).

Besides SEQR, Pivo is a mobile wallet application in Finland that was created by OP-Pohjola financial service group in cooperation with service design and innovation agency Nordkapp. The application was launched in May 2013 and it can follow your shopping behavior together with the status of your personal finance (NordKapp, 2014).

There is also Elisa Lompakko created by Elisa (Sarle, 2013). In addition, the public transportation company Föli (operating in Turku region) allows travelers buying mobile tickets with the application developed by iQ Payments Oy (Föli, 2014).

3 LITERATURE REVIEW

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

3.1 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:

- *Optional adoption decision* is made by single individual such as the consumers' decision.
- *Collective adoption decision* is taken place by group consensus.
- *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).

3.2 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).

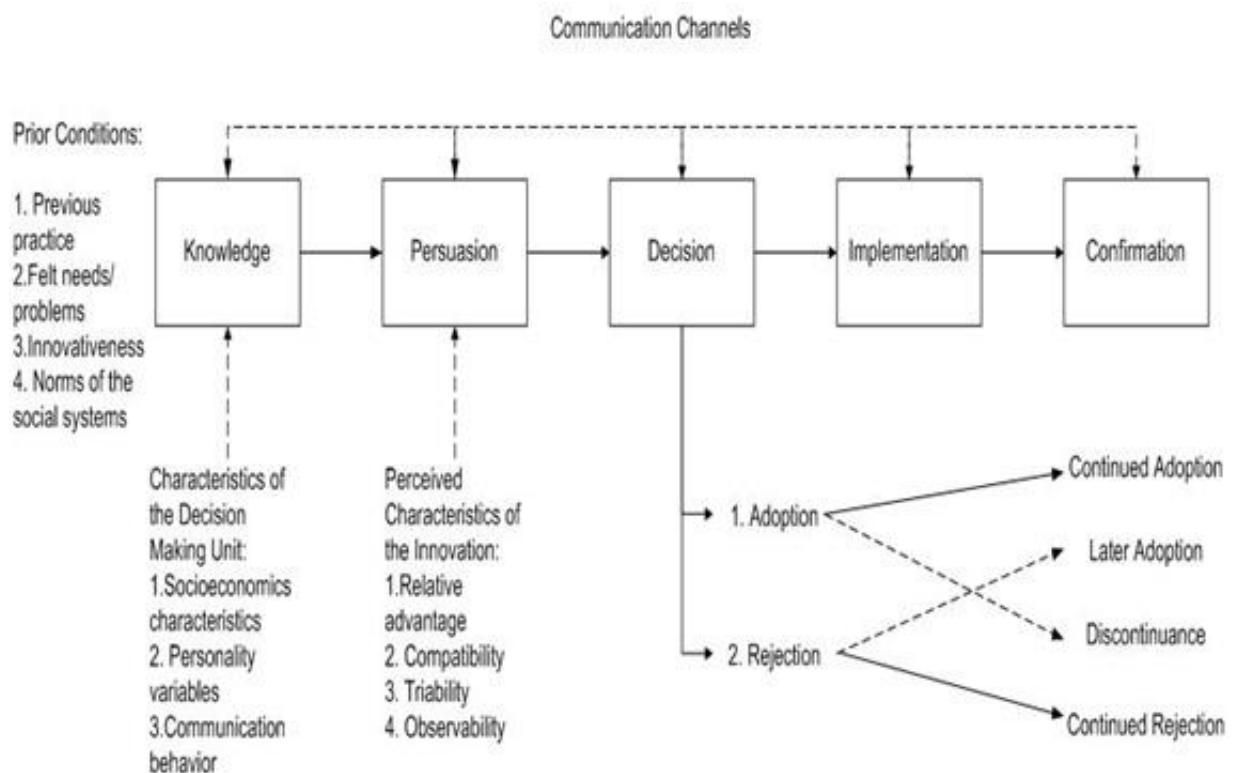


Figure 4: Innovation-Decision Process (or Technology Adoption Decision Process) (Rogers, 2003)

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

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

3.2.1 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 Finland), 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.

3.2.2 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).

3.2.3 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):

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

3.2.4 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).

3.2.5 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).

3.3 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	<ul style="list-style-type: none"> ▪ Time and place independent purchases ▪ Queue avoidance ▪ Enhanced payment instrument availability ▪ Complement to cash 	+ + + +	yes
Compatibility	<ul style="list-style-type: none"> ▪ High with digital content and services ▪ High with small value purchases at POS ▪ Low with large value purchases 	+ + -	no

Complexity	▪ Complex SMS formats, codes, service numbers	-	no
	▪ Management of separated accounts burdensome	-	
	▪ Complex registration procedures	-	
Costs	▪ Premium pricing and high transaction costs	-	no
Network external	▪ Lack of wide merchant adoption	-	no
	▪ Proprietary devices/services	-	
Trust	▪ In merchants	+	no
	▪ In telecom operators	+	
	▪ In financial institution	+	
Perceived security risk	▪ Unauthorized use	-	no
	▪ Transaction errors	-	
	▪ Lack of transaction record and documentation	-	
	▪ Vague transactions	-	
	▪ Concerns on device and network reliability	-	
	▪ Concerns on privacy	-	

Table 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.

4 RESEARCH METHODOLOGY

4.1 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 Finland?
- b) How mobile wallet has been adopted by consumers in Finland?

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 (discussed in section 3).

4.2 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 Finland?” 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 Finland and *how* mobile wallet has been adopted in Finland (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.

4.3 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 respondents are divided into 3 categories after they have answered general questions such as information about their age and whether or not they use smartphones. Each group will have slightly different questions depending on the category and some identical questions. The divided groups include:

- *The Unknown*: who have not heard about "mobile wallet" term until they did the questionnaire.
- *The Awareness (Yes, I've known/ I've heard but I've never used)*: the title has expressed the characteristics of this group.

- *The Experienced*: who have known about mobile wallet, and used it (or used to use it).

The questionnaire was sent to potential respondents who reside in Finland (including Finnish and other nationalities) via Facebook messages. They are mostly friends and friends' circles. The duration for response is two weeks. As a result, the number of respondents is 91 out of 100 leading to 91% answer rate. The other 9 respondents did not meet the due date which was set by researcher.

4.4 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 testing questionnaire was sent to researcher's friends who do not live in Finland, yet they have been active users of mobile wallet. Hence, they have given some valuable comments to edit the questionnaire before it was sent widely.

There are of course existing limitations. First of all is that the size of sample is quite small. The whole Finland has close to 5.5 million populations (StatisticsFinland, Population structure [e-publication], 2013). Among that number, people from 16-89 year-old who own a smartphone, account for 56% of the population (StatisticsFinland, 2013), which approximately equals to 3 million people. This research has collected 91 respondents (out of which 5 do not have a smartphone) versus 3 million of population, which shows that this sample group is very 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.

However, the results still can give some generalized ideas about the consumer adoption toward mobile wallet in Finland based on data collection.

5 DATA ANALYSIS

5.1 Introduction

As mentioned in section 4.3, the data has been collected from 91 respondents categorized in 3 groups: The Unknown; The Awareness, and The Experienced. For a clear following, the analysis will be highlighted on these 3 groups after the background data. Some identical information of both or multiple groups will be combined. The basic information of mobile wallet is introduced at the beginning of the survey, together with a short descriptive video about mobile wallet.

5.2 Background data (total respondents: 91)

Question 1: Age

Respondents who are from 18-35 year-old account for 93.4%, which indicates that the younger generation taking up the most part in response to this questionnaire. However, this question does not affect much in the consumer adoption process.

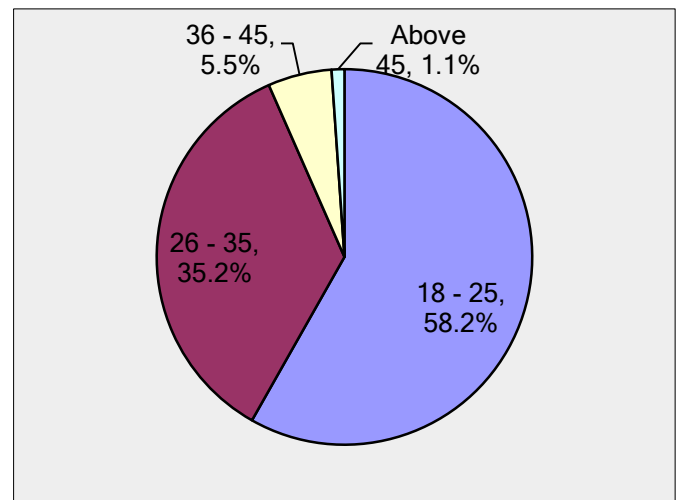
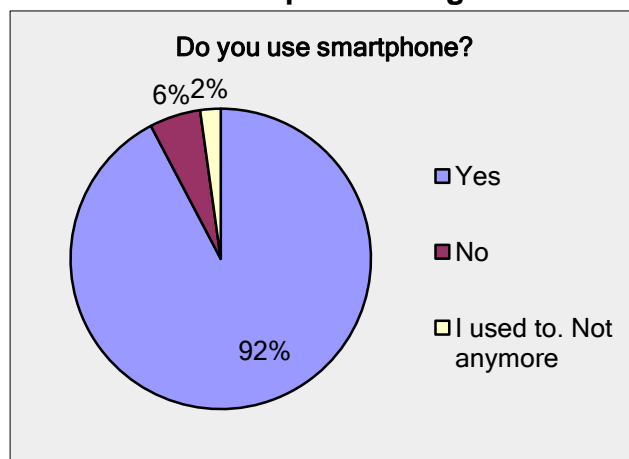


Table 2: Age distribution

Question 2: Smartphone usage statistic



92% of respondents use smartphone as their mobile device. 2 persons out of 91 respondents used to use smartphone and 5 of them do not use smartphone.

Table 3: Smartphone usage statistic

Nevertheless, not possessing a smartphone does not mean that they do not have knowledge about mobile wallet. And there is also a case that they might start to use it in the future. Hence, it is still useful to get information from non-smartphone-users.

Question 3: Making (online) payment by smartphone

As a result, 60% of respondents have used a smartphone to make (online) payment. The statistic is shown clearly in Table 4:

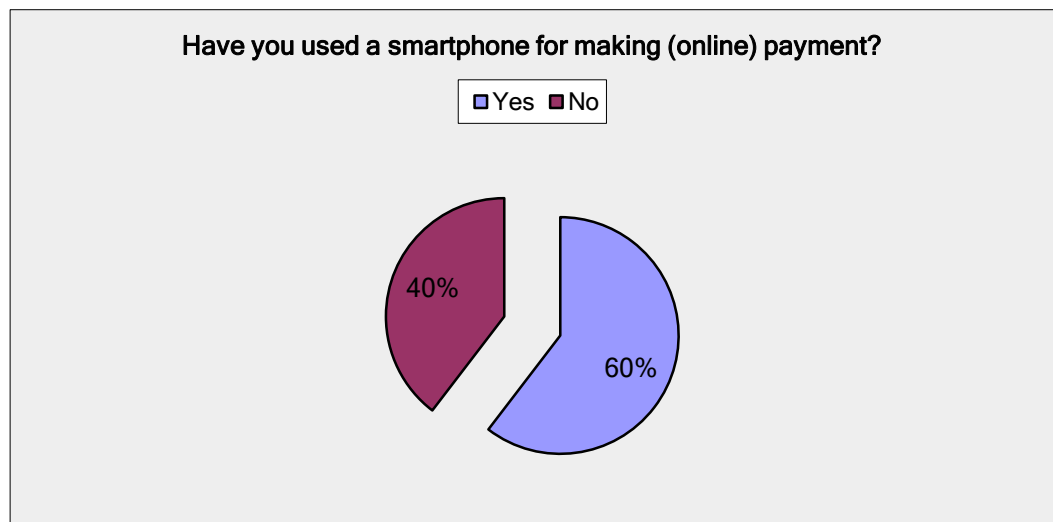


Table 4: Percentage of respondents who use a smartphone to make (online) payment

Question 4: Payment applications in respondents' phone

The result is that 55% of respondents have an application in their phone to make payment. Comparing with Question 3 in which 60% of respondents have made an (online) payment by smartphone, we can interpret that among the respondents, there are people who does not use a payment application to pay for their purchases.

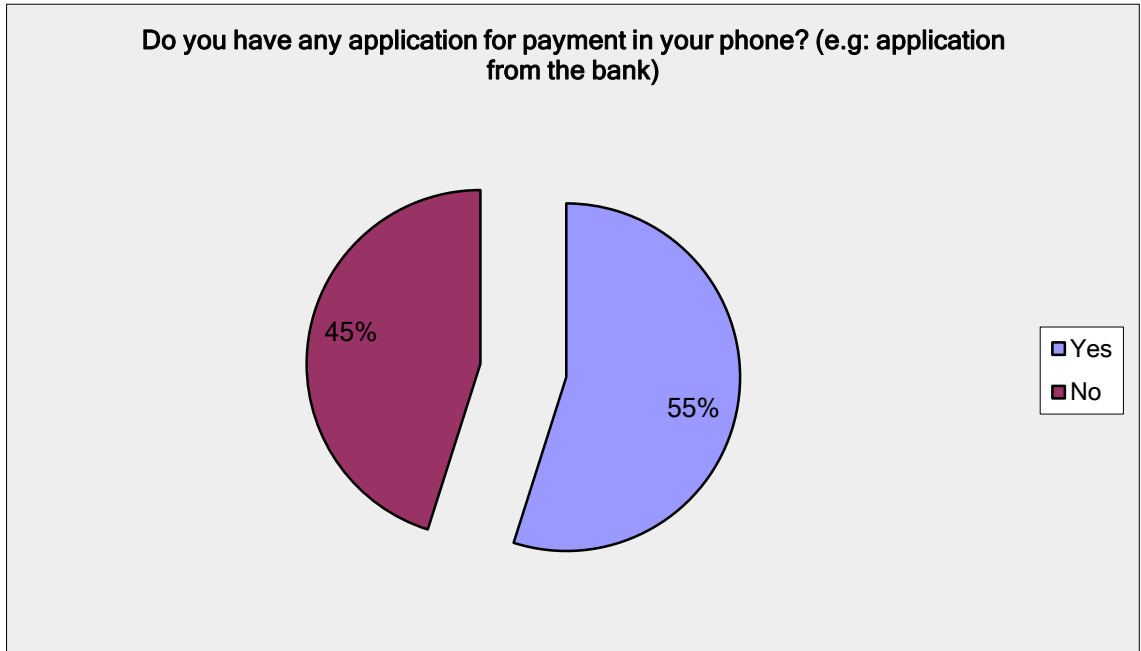


Table 5: Percentage of payment application in respondents' phone

Question 5: Payment methods for online purchase

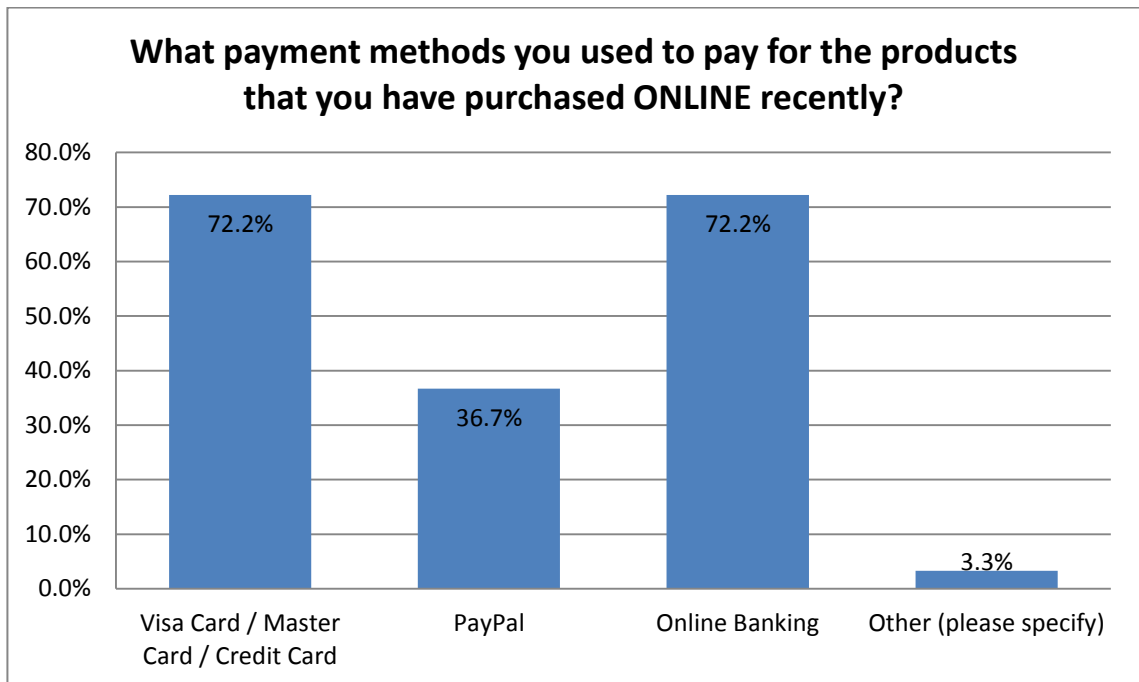


Table 6: Percentage of payment methods has been used recently to pay for online payment by respondents

Most of the respondents have been using Cards and Online Banking for conducting online payment (72.2%). PayPal has also been used by 36.7% respondents recently.

Question 6: Group classification

This question is designed to categorize respondents into 3 groups. The result is distinguishing (Table 7). 91% of respondents have not yet used the mobile wallet. In which 31% (approximately 28 respondents) of them have not been acknowledged about it (The Unknown) and 60% (about 55 respondents) have not decided to use it even though they have known about it (The Awareness). When we connect it with the Innovation-Decision Process (Rogers, 1983), we can see clearly that it is important to have more effective information about the mobile wallet in Finland for two main reasons: first is the attempt of spreading the image of mobile wallet; and second is the attempt of creating positive image toward the “Awareness” group to motivate them experiment the mobile wallet. The mobile wallet stakeholders should keep in mind that the individual receives the existence signal of innovation accidentally. Thus, he/she cannot actively seek for information of innovation until they know its presence (Rogers, 1983). The Experienced comprises only 9% among respondents (8 respondents).

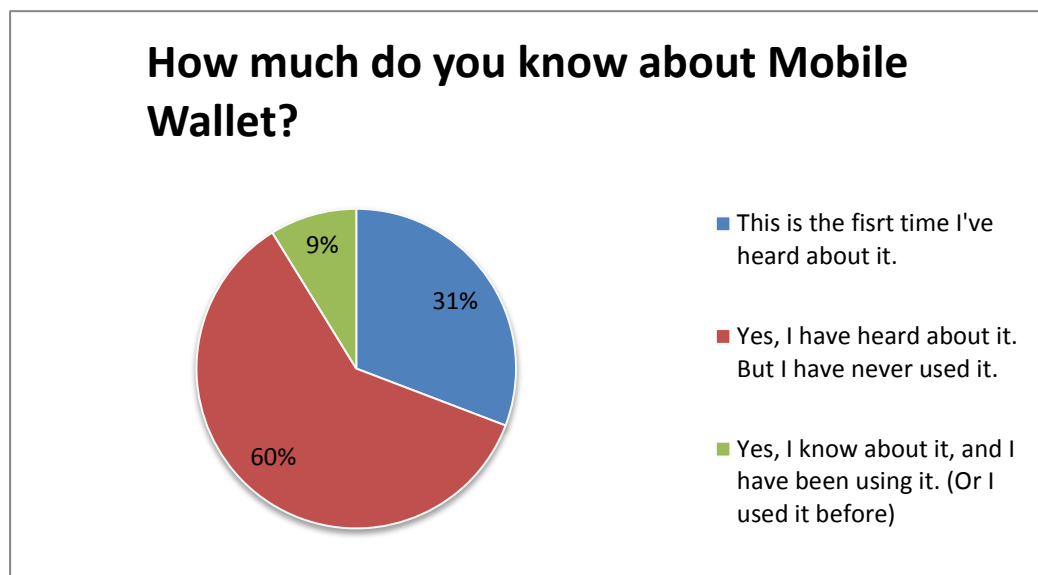
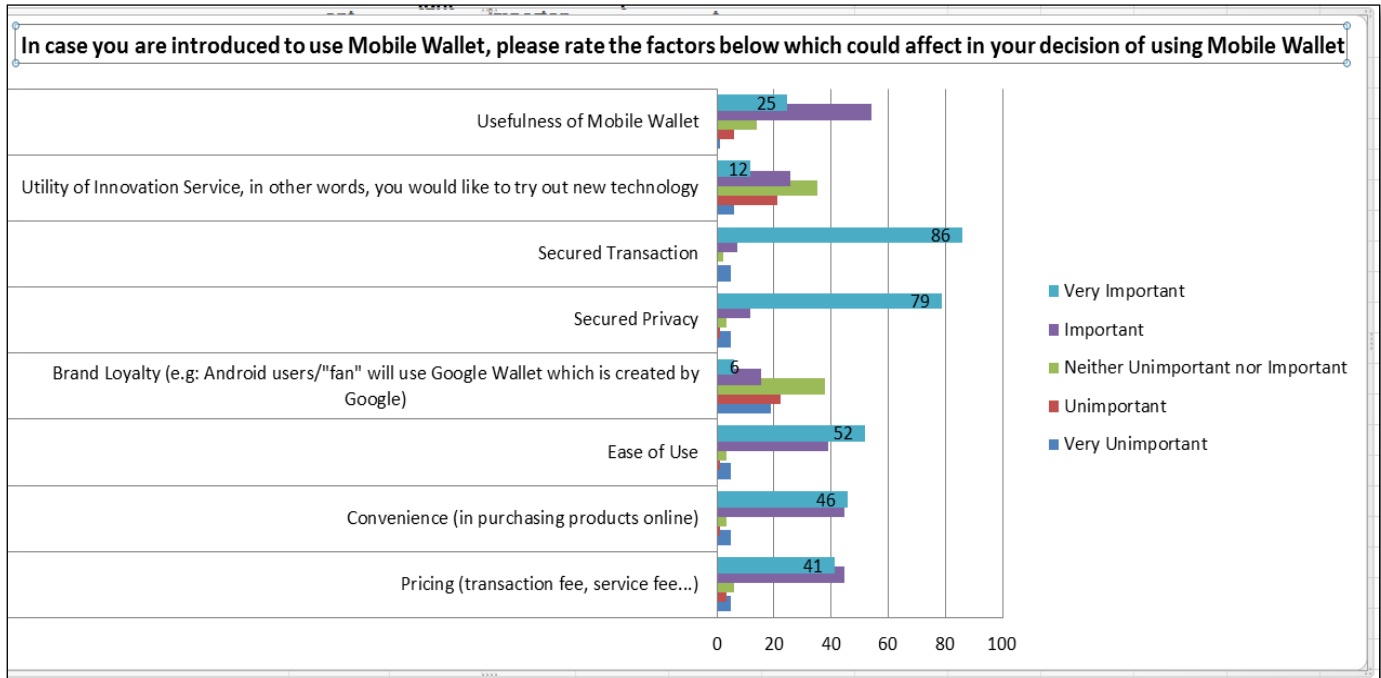


Table 7: Percentage of group classification

5.3 The Unknown and the Awareness

Question 7, 10 and 17: Influencing factors (91 respondents)



These questions are identical and they were asked in 3 groups. The main purpose is to examine the attitudes of respondents toward possible factors which can affect the respondents' decision in using mobile wallet. In other words, it can successfully answer to the first research question in section 1.3 of this research paper. As a result, the opinions are not different in 3 groups.

Therefore, grouping them will give a better overall picture of how consumers in Finland response to those factors¹.

Table 8 presents precisely the result of this question. *Secured transaction* and *secured privacy* are the most concerned factors, which accounts for 86% and 79% of respondents. The result undoubtedly shows that consumers consider security as the most priority issue in their decision making process. Besides that, the *ease of use*, *convenience* and *pricing* are rather equally important

Table 8: Influencing factors in respondents' decision of using mobile wallet

¹ The possible factors are extracted partly from the research paper of Niina Mallat "Exploring consumer adoption of mobile payments-a qualitative study" (2006). See more at section 3.3

toward consumers (52%, 46% and 41%). On the contrary, brand loyalty is considered as the least factor, only 6% of respondents who think it is important.

Question 8, and 12: Decision-making measurements (83 respondents)

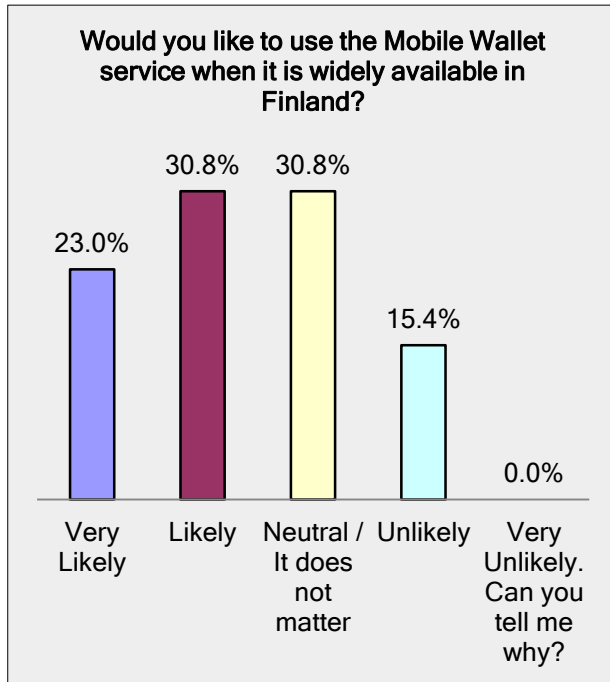


Table 10: Decision-making measurement of The Unknown group

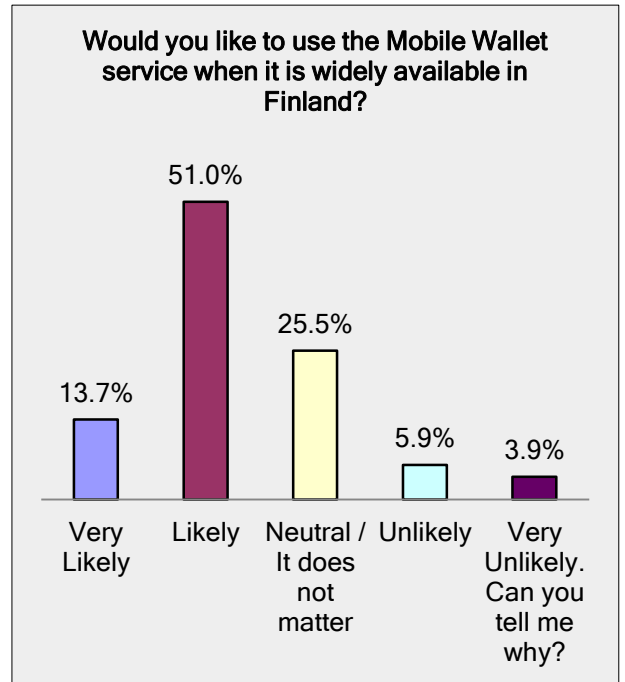


Table 9: Decision-making measurement of The Awareness group

Both of the Unknown group and the Awareness group have relatively high percentage of respondents who are willing to use mobile wallet service when it is widely available in Finland (the Unknown 53.8% and the Awareness 64.7%).

Oppositely, the percentage of people who will decide not to use mobile wallet is higher in the Unknown group (15.4% versus 9.8%). It proves that in the Knowledge Stage and Persuasion Stage, positive and persuasive messages from mobile wallet are very crucial in order to encourage consumers to adopt mobile wallet.

For extra information, respondents were asked to give reasons in case they choose “Very Unlikely” as their answers. There are only 2 responses in the Awareness group: security issue as he/she explained “I’ll wait for review and

also depends on how security it is because I'm afraid of losing my phone and the Mobile Wallet information along with it"; and the other response is that the person does not use smartphone.

Question 9: Knowledge sources (55 respondents)

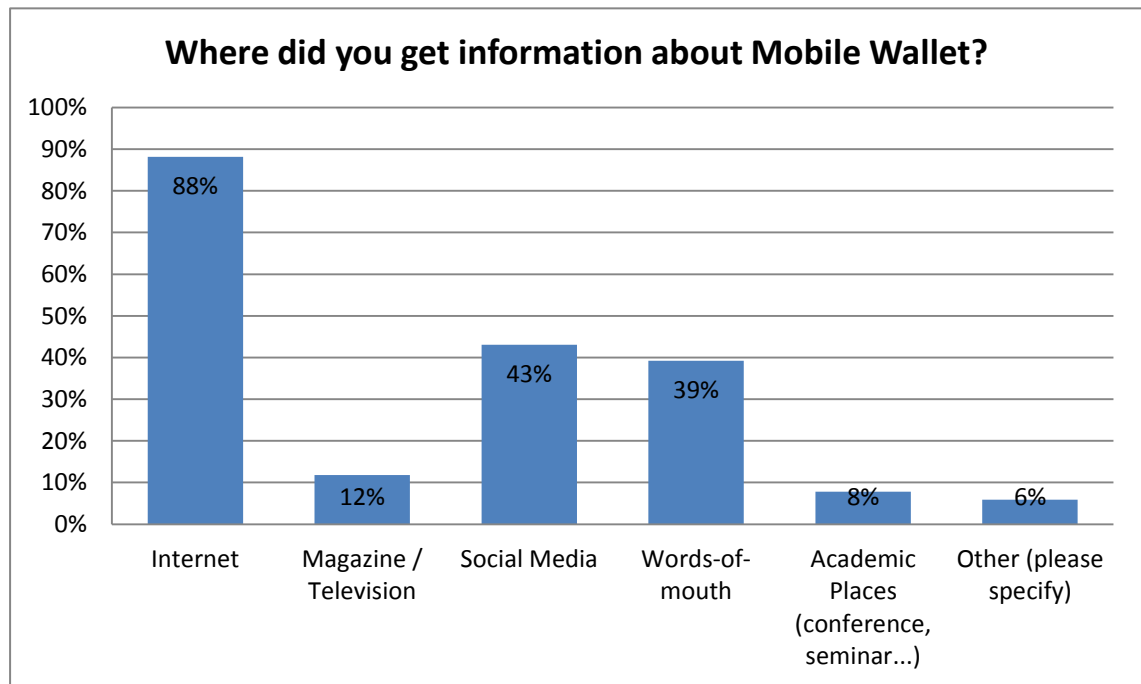


Table 11: Sources of mobile wallet information from which the respondents collected

According to respondents, the majority of information was gathered from the internet (88%), from the social media (43%) and words-of-mouth (39%). From the result of this question, the mobile wallet stakeholders will have an insight of where to advertise their product effectively in Finland, which can help saving the cost of marketing.

5.4 The Experienced

Question 13: Mobile wallet services (8 respondents)

Interestingly, the mobile wallets which have been used by respondents are various. More specifically, PayPal accounts for 38% and other services such as

Google Wallet, Passbook, and V.me/PayPass comprise of 13%. Those mobile wallets are international-recognizable ones. There are also 38% of others wallets: Elisa Lompakko, Nordea application and 1 “no-name-mentioned” application from a transportation company. These are local wallets which are available in limited geographically such as Finland.

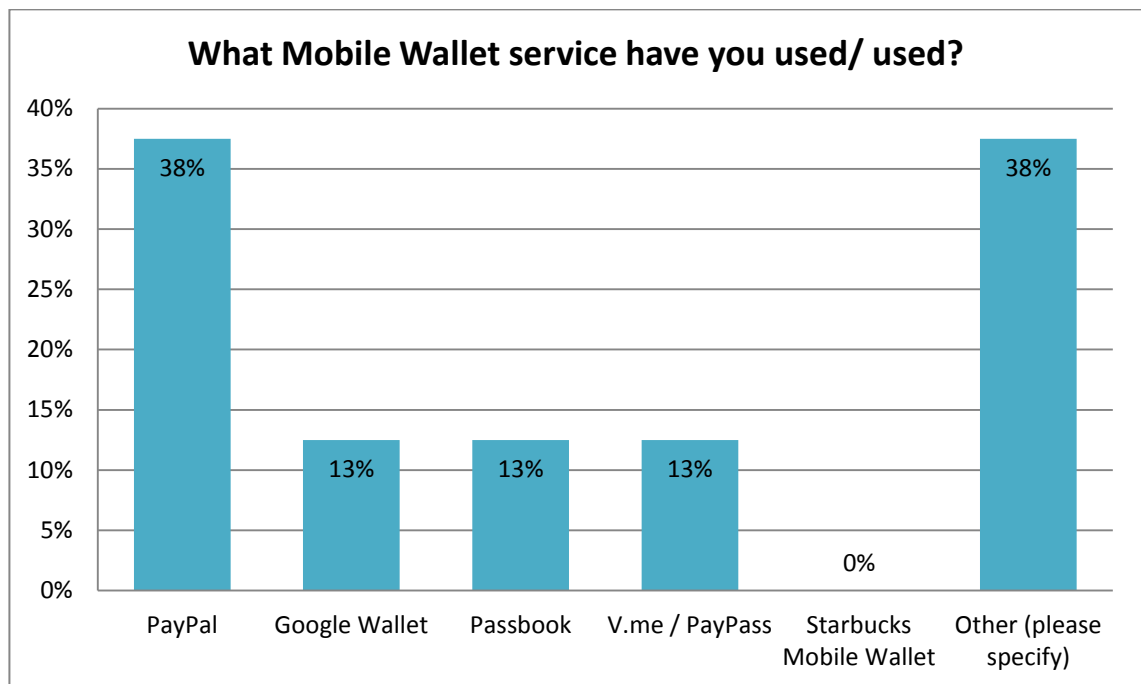


Table 12: Mobile wallet services which have been used by respondents

Question 14: Service satisfaction (8 respondents)

Respondents were asked to rate the satisfaction level when they use the mobile wallet. 3.75/ 5 points are the average rate that was calculated. Obviously the mobile wallet service needs to be improved to bring more satisfaction to its consumers.

Question 15: Confirmation (8 respondents)

In this group, the questionnaire has collected 88% of respondents whose opinions are positive. They would be likely or very likely to continue using the mobile wallet that they have been using. As discussed in question 14, this number should be higher when the services are improved.

Question 16: Obstacles (8 respondents)

63% of respondents answered “yes” to the question “Are there any obstacle(s) when you use mobile wallet?”. To support for their answers, respondents gave some valuable feedbacks

- The internet connection was off while using mobile wallet
- The applications have less functions
- Mobile wallet is not yet popular (in Finland), which makes cash and cards (debit/credit) must be needed.
- It might be annoying to change payment method since all places do not support paying with phones (in Finland).
- Battery of smartphones might be off anytime during a day. Hence, cash and cards are very necessary.

The above opinions are truly useful for mobile wallet businesses.

Question 18, 11: Mobile wallet overall opinions (63 respondents)

These are identical questions for both groups: the Experienced and the Awareness. The rating unit was transferred to percentage.

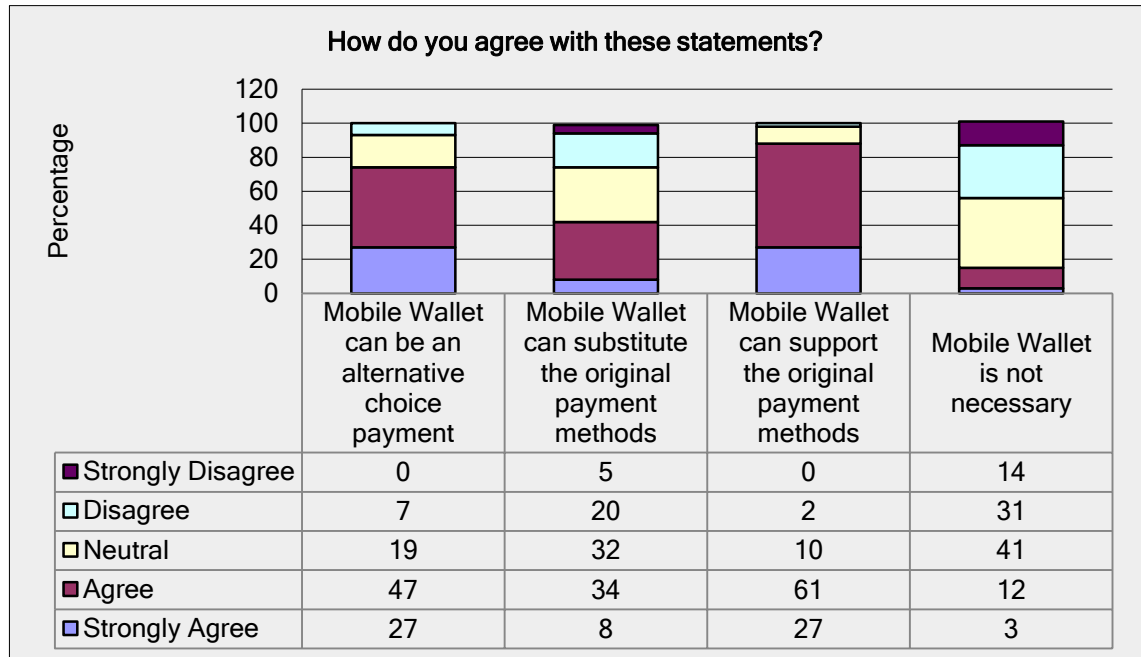


Table 13: Percentage of overall opinions toward mobile wallet from respondents

88% of respondents think that mobile wallet can support the original methods and 74% of respondents give opinion that mobile wallet can be an alternative choice of payment. This statistic shows a good sign about positive attitude toward mobile wallet among consumers in Finland.

On the other hand, only 42% of respondents consider mobile wallet can replace the original payment methods. And, 45% of respondents think that mobile wallet is not necessary, together with 41% of neutral opinions, which can be interpreted as the consumers are in the Persuasion Stage. They are currently the observers as well as the enthusiastic-information- seekers. Therefore, it is important to consider carefully what kind of messages that the stakeholders of mobile wallet would like to notify the consumers.

In general, the results of this question can greatly satisfy the second research question of this research paper of how mobile wallet has been adopted in Finland.

6 CONCLUSION

6.1 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 Finland; and (2) how the mobile wallet has been adopted in Finland.

As a result, 60% of sample group has known about mobile wallet but they have not yet used the services. 31% of them do not know about mobile wallet until they did the questionnaire. The remaining 9% has had the experience with mobile wallet. The result illustrates clearly that the adoption image of mobile wallet among consumers in Finland is only at the beginning stages 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 Finland. However, the good news is that based on the available information that consumers have been receiving mainly from the internet, consumers in Finland express positive attitudes toward mobile wallet. 88% of sample group agree that mobile wallet can support the original methods and 74% of them correspond that mobile wallet can be an alternative choice of payment. This result leads to a generalized conclusion that there is a market for getting consumers in Finland using mobile wallet. To be successful in Finnish market or not now depends heavily on the marketing strategies of mobile wallet companies as well as the financial policy makers in Finland.

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. 86% of the sample group takes secured transaction as very important factor and 79% 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.

6.2 Future research

Mobile wallet is rather a new topic in this technology era; henceforth the points of view might be limited. This research paper focuses mainly on consumers, yet in fact, in order to make mobile wallet widely accepted, it requires much effort in terms of change from many related stakeholders, especially the merchants who will have to adapt and change the traditional way of payment (discussed in section 2.2.2). Same story with financial sector since mobile wallet is heavily based on finance.

Will mobile wallet become sustainable? Or is it just a trend? Does the new technology really be useful for its consumers or it is all about brand loyalty and marketing? So far, these questions have not yet had any concrete answers. Those matters are still debatable topics among business-bloggers and financial institutions. To understand better about many aspects of mobile wallet, a separated research is recommended.

Moreover, mobile wallet businesses are in their first stages to be presented in Finland. After a period of time, it is suggested to test the satisfaction of consumers toward mobile wallet; in a more general context, it is the consumer behaviors toward mobile wallet in Finland (for instance, using the case study of Hesburger's mobile wallet system).

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Questionnaire

Welcome to My Survey

My name is Ngoc Doan (Sandy) and this questionnaire is created as part of the Bachelor Thesis of my graduation, majoring in International Business Administration, Turku University of Applied Sciences (Turun AMK). The main aim of the survey is to collect data and information about Consumer Adoption in Mobile Wallet. I would like to thank you for your contribution to my thesis by answering this survey. It may take you approximately 10 minutes to complete it.

Mobile Wallet is called when your smartphone functions as a leather wallet: it can have digital coupons, digital money (transaction), digital cards, digital receipts...etc. all in your phone. Which means, you install the application created by some companies such as Google, Apple or PayPal in your phone, and use those applications to pay directly for the products you have purchased (online/offline).

Before doing the survey, please take a look at the video (1:40) attached here [Mobile Wallet - Tap & Go](#). This illustrates a concrete example one type of Mobile Wallets that uses Near Field Communication technology (NFC). It enables devices within a few centimeters of each other to exchange information and data.

The major "players" of Mobile Wallet according to www.mobilepaymentinsider.com include: PayPal, Google Wallet, Passbook (Apple Inc.), PayPass (MasterCard), V.me (Visa), Starbucks or ISIS from AT&T, T-Mobile and Verizon.

General Questions

***1. Your age**

- 18 - 25
- 26 - 35
- 36 - 45
- Above 45

***2. Do you use smartphone?**

- Yes
- No
- I used to. Not anymore

***3. Have you used a smartphone for making (online) payment?**

- Yes
- No

***4. Do you have any application for payment in your phone? (e.g: application from the bank)**

- Yes
- No

5. What payment methods you used to pay for the products that you have purchased ONLINE recently?

- Visa Card / Master Card / Credit Card
- PayPal
- Online Banking
- Other (please specify)

***6. How much do you know about Mobile Wallet?**

- This is the first time I've heard about it.
- Yes, I have heard about it. But I have never used it.
- Yes, I know about it, and I have been using it. (Or I used it before)

Group 1 - The Unknown

***7. In case you are introduced to use Mobile Wallet, please rate the factors below which could affect in your decision of using Mobile Wallet.**

	Very Unimportant	Unimportant	Neither Unimportant nor Important	Important	Very Important
Pricing (transaction fee, service fee...)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Convenience (in purchasing products online)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Ease of Use	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Brand Loyalty (e.g: Android users/"fan" will use Google Wallet which is created by Google)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Secured Privacy	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Secured Transaction	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Utility of Innovation Service, In other words, you would like to try out new technology	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Usefulness of Mobile Wallet	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

8. Would you like to use the Mobile Wallet service when it is widely available in Finland? (In case you are not clear about Mobile Wallet, please watch this example video [Mobile Wallet - Tap & Go Payment](#))

- Very Likely
- Likely
- Neutral / It does not matter
- Unlikely
- Very Unlikely. Can you tell me why?

Group 2 - Yes, I've known/ I've heard but I've never used.

9. Where did you get information about Mobile Wallet?

- Internet
- Magazine / Television
- Social Media
- Words-of-mouth
- Academic Places (conference, seminar...)
- Other (please specify)

***10. In case you are introduced to use Mobile Wallet, please rate the factors below which could affect in your decision of using Mobile Wallet.**

	Very Unimportant	Unimportant	Neither Unimportant nor Important	Important	Very Important
Pricing (transaction fee, service fee...)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Convenience (In purchasing products online)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Ease of Use	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Brand Loyalty (e.g: Android users/"fan" will use Google Wallet which is created by Google)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Secured Privacy	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Secured Transaction	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Utility of Innovation Service, in other words, you would like to try out new technology	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Usefulness of Mobile Wallet	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

***11. How do you agree with these statements?**

	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
Mobile Wallet can be an alternative choice payment	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Mobile Wallet can substitute the original payment methods	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Mobile Wallet can support the original payment methods	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Mobile Wallet is not necessary	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

12. Would you like to use the Mobile Wallet service when it is widely available in Finland? (In case you are not clear about Mobile Wallet, please watch this example video [Mobile Wallet - Tap & Go Payment](#))

- Very Likely
- Likely
- Neutral / It does not matter
- Unlikely
- Very Unlikely. Can you tell me why?

Group 3 - The Experienced

***13. What Mobile Wallet service have you used/ used?**

- PayPal
- Google Wallet
- Passbook
- V.me / PayPass
- Starbucks Mobile Wallet
- Other (please specify)

***14. How do you rate the Mobile Wallet service that you have used/ used?**

Very Unsatisfied	Unsatisfied	Neutral	Satisfied	Very Satisfied
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

***15. Would you want to continue using Mobile Wallet?**

- Very Likely
- Likely
- Neutral
- Unlikely
- Very Unlikely
- I stopped using Mobile Wallet

16. Are there any obstacle(s) when you use Mobile Wallet?

- No
- Yes. Which?

***17. Please rate the factors below which could affect in your decision of using Mobile Wallet.**

	Very Unimportant	Unimportant	Neither Unimportant nor Important	Important	Very Important
Pricing (transaction fee, service fee...)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Convenience (in purchasing products online)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Ease of Use	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Brand Loyalty (e.g: Android users/"fan" will use Google Wallet which is created by Google)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Secured Privacy	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Secured Transaction	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Utility of Innovation Service, in other words, you would like to try out new technology	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Usefulness of Mobile Wallet	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

***18. How do you agree with these statements?**

	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
Mobile Wallet can be an alternative choice payment	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Mobile Wallet can substitute the original payment methods	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Mobile Wallet can support the original payment methods	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Mobile Wallet is not necessary	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>