

UNIVERSITY OF JYVÄSKYLÄ
School of Business and Economics

**THE FACTORS AFFECTING THE USE OF
CONTACTLESS PAYMENTS**

Master's Thesis, Marketing

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ABSTRACT

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| <p>Abstract</p> <p>Mobile technology has become a significant part of our everyday life. The technology develops rapidly and in the past few years numerous of companies have made payments possible through mobile equipments. The most used technology for conducting such a payments is called near field communication (NFC), which enables fast and convenient payments using countless of different instruments for paying.</p> <p>The objective of this research is to shed light on the use of contactless payments via NFC. To achieve the objective we explored the factors that might have influence on intention to use and use of contactless payments. Thus, the research questions are: <i>Is there significant relationship between the chosen factors and continuous use of contactless payments? How do the chosen factors affect the continuous use of contactless payments?</i></p> <p>The theoretical background of this research lies strongly on the UTAUT2 model by Venkatesh et al. (2012). In our research we modify the initial UTAUT2 by adding there constructs that are noticed in prior literature to have influence on customer's behaving. The added constructs are perceived risk, overall satisfaction, affective engagement, cognitive engagement and commitment. The constructs adopted from UTAUT2 model are habit, effort expectancy, performance expectancy, hedonic motivation, intention to use and use.</p> <p>Because we wanted to explore the relationships between the constructs, a quantitative research method was used. The data of 1165 respondents was first analyzed in SPSS Statistic 22 program and the further and deeper analysis was made via SmartPLS 2.0. The questionnaire was developed by using existing and according to the prior literature relevant questions and scaling.</p> <p>The results of the study indicate that habit has very strong influence on the use of contactless payments. The findings of prior literature in technology acceptance context in general have also discussed about the strong role of habit. Hence, our research supports such statements. However, if habit is removed from the model, the impact of intention to use grows significantly. Overall, the study enhances the understanding of customer technology acceptance in payment context.</p> | |
| Keywords Contactless payments, mobile payments, satisfaction, perceived risk, commitment, engagement, habit, intention to use, performance and effort expectancy, hedonic motivation, perceived value | |
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1 INTRODUCTION

1.1 Research background

Continuously developing mobile technology has become a relevant element of our everyday life (Kim, Mirusmonov & Lee, 2010). Luo, Li, Zhang and Shim (2010) say that the convergence of Internet, wireless technologies and development of mobile devices have enabled mobile commerce. Nowadays also money has been digitalized. It has become bits of data stored to the servers of service providers and moved as bytes of information in the form of so called e-cash. Because of such technological development, the goods and services can now be paid by using new methods and instruments. It is expected, that the role of traditional payment instruments such as cash and debit and credit cards is getting weaker and weaker. For instance, the international ICT-corporation Garner has predicted that by 2018, half of consumers in mature markets will use smartphones or wearable such as smart watches for paying.

One reason behind the rapid development of such a trend is the establishment of the technology called near-field-communication (NFC). NFC has made paying more convenient than ever by enabling fast and secure contactless payments. NFC is a technology, which can be included into the countless of objects in a form of a chip. The most common instruments to which NFC has been adapted to are mobile devices but also debit and credit cards. Additionally, also payment stickers including NFC chip do exist.

Well functioning mobile payment technology via NFC is fairly new. Although contactless payment technology seems to be easier and faster to use than traditional payment instruments, consumers have not widely adopted it. Especially mobile payments via NFC may still feel uncomfortable for many. However, payment terminals in the retail shops have just recently, during the past two years, been widely updated to support the NFC payments.

Contactless payment is a topical phenomenon to observe closer because traditional finance and bank sector is going through revolutionary times. The upcoming new directives (PSD2) by EU force banks to share their technological interfaces to the third parties. Because of such a change, bank's monopoly on their customers' account information will disappear and the market might turn to be attractive for new players. For a customer the change may mean better and more innovative services but also uncertainty considering security. All in all, the phenomenon is topical and in future it is interesting to see how the changes affect customers' behaving in payment and finance context.

Traditionally, a number of studies have supported their theoretical basis on the well-known Technology Acceptance Model (TAM) by Davis (1989), and extended versions of it (Venkatesh et al. 2012; Venkatesh et al. 2003). Many of these studies (Kim et al. 2010; Schierz, Schilke & Wirtz, 2010) have focused on the factors affecting intention to use a mobile payment technology in general. However, the term "mobile payment" means various different things and the concept is getting more and more fragmented in such a way that customers are

able to conduct several different kinds of payments in different environments by their mobile devices. For instance, customer can make payments online via mobile devices and at the same time send money to a friend via specific mobile application like Mobilepay made by Danske Bank.

Overall, the mobile payment technology is developing fast creating new kinds of forms of payments and therefore it is apparent that there are numerous of different factors behind the several forms of mobile payments. For instance, online payments via mobile device might have the same but also different predictors than mobile payments conducted via contactless NFC technology in grocery store. In this paper we want to outline the discussion to the contactless payments in general. Therefore, the objective of this paper is to examine the factors affecting *intention to use* and the *use* of contactless payment technology.

In a number of technology acceptance and adoption studies (Parameswaran, Kishore & Li, 2015; Kim et al. 2010; Schierz et al. 2010; Davis, 1989) research has often concentrated to the antecedents of *intention to use* and the typical studied variables in the context have usually been perceived usefulness and perceived ease of use. However, in addition to intention to use, the prior literature (Venkatesh et al. 2012) has also examined the concept of actual *use*, too.

Because of the rapid development of technological innovations in various different contexts, we think that there is still need for additional research. Evanschitzky, Iyer, Pillai, Kenning, and Schütte (2015) state that the factors contributing trial are distinct from those that are contributing to adoption. They also argue that trial does not always lead to continuous use. Thus, in our research we examine not only the intention but also the actual use.

Eriksson and Nilsson (2007) argue that continued use in consumer context deserves explicit focus on factors such as satisfaction and acceptance of the technology. Hence, in this paper we go through the factors that have not earlier been involved in such discussion with the traditional constructs in technology acceptance research context.

Based on the discussion above, we will partly adapt the theoretical model called the Unified theory of Acceptance and Use of Technology (UTAUT2) by Venkatesh et al. (2012) as a main theoretical basis for our research. Yet, following the statements of Evanschitzky et al. (2015) and Eriksson and Nilsson (2007) we will modify the UTAUT2 with the new constructs that are noticed in different consumer contexts to have influences on customers' behaving. Such constructs are affective engagement, behavioral engagement, cognitive engagement, perceived risk, commitment and overall satisfaction. From initial UTAUT2 model we have adopted habit, hedonic motivation, performance expectancy and effort expectancy and intention to use and use. The research model is shown in Figure 4.

This study explores the Finnish telecom operator's customers who have used the contactless payment methods. This research is about the factors affecting the use of contactless payments.

1.2 Research objectives and problems

There are already thousands of places where consumers can use contactless payment instruments to pay their purchases. However, traditional payment instruments such as credit and debit cards but also cash are still common payment methods among the Finnish consumers. Therefore the research problem is: Which are the factors that affect the continuous use of contactless payments? To answer such an extensive question we have explored the prior literature and selected constructs that are seen to have significant influences on consumers' behaving in general. The selected factors and variables are:

- Perceived risk
- Engagement (affective, behavioral and cognitive)
- Commitment
- Performance expectancy
- Effort expectancy
- Hedonic motivation
- Habit
- Intention to use
- Use
- Overall satisfaction

To achieve the objective of the research the following research questions are posed:

- *Is there significant relationship between the chosen factors and continuous use of contactless payments?*
- *How do the chosen factors affect the continuous use of contactless payments?*

In this study we take a deep overview of the selected factors above and examine their affection around the consumer's behaving and especially around the concept of intention and use of contactless payment technology.

1.3 Terminology

Contactless payment instrument

In this study contactless payment instrument is seen as an item, which includes NFC microchip, the combination that can be used for contactless payments. Therefore, contactless payment instrument could be mobile phone, payment sticker, credit and debit card with NFC and so on.

Mobile payment

Also known as m-payment, mobile payment is a fairly new and alternative payment method where a mobile device is involved to the process of payment (Zhong, 2015). M-payment includes various different payment methods. For example it involves such dimensions: sending money via mobile phone (peer-to-peer money message) or sending SMS or calling to a specific service number. Mobile payment is also making payments using mobile devices NFC-capability in retail shop for instance. In this study a mobile payment is seen as a payment conducted via NFC.

NFC (Near Field Communication)

NFC is a technological solution for contactless communication between two devices at a maximum distance of around 20cm or less. Having a device such as mobile phone fitted with an NFC chip will enable contactless data sending and exchanging between users. (Curran, Millar & Mc Garvey, 2012)

PIN (Personal Identification number)

PIN is a numeric password that is used to authenticate user to a certain system such as teller machines. PIN is also used in payment terminals for conducting payments with bank card in retail shops, for instance.

PSD2 (Revised Payment Service Directive)

Revised payment service directive is an upcoming EU directive that enables bank customers to use third party providers to manage their finance. Because of the directive, banks are forced to open their interface to the third party providers if customer gives permission.

2 LITERATURE REVIEW

This chapter begins with an overview of the development of mobile payment technology. It will then go through the chosen constructs that are seen in the prior literature to have significant roles in customer behaving. The constructs may also have influence on intention and use of new technologies such as contactless payments.

2.1 The concept of contactless payments

In this part we take an overview of the contactless payment solutions including mobile payments and NFC technology in payment context in general. Because of NFC technology, almost every item could be used as an instrument of payments. NFC microchip can be basically installed into countless of objects such as into mobile phones, into traditional bankcards or watches for instance. There have been controversial conversations of including NFC chip even into human's body. Depending on the service provider the sum of money enabled to pay using NFC without PIN is limited generally to maximum 25 euros because of the security risk involved in the payment transaction.

2.1.1 The development of mobile payment solutions

The evolution of information systems (IS), including mobile payment technology, has rapidly developed during the past decades (Shaikh & Karjaluoto, 2015). We see necessary to introduce mobile payments in this study because as Shaikh and Karjaluoto (2015) state the technological possibilities for mobile payments have been spreading fast during the past years. Just to name few, Apple and Samsung have launched their own mobile payment services called Apple Pay and Samsung Pay and also Google has put effort to mobile payment market by inventing Android Pay. In addition, there are plenty of smaller corporations in the market too. For example, in 2013 Finnish operator Elisa brought its own solution, Elisa Lompakko, to the m-payment market. Common for all is that their contactless payment solutions are functioning via NFC.

Although workable mobile payment technology is quite new, it has gone through different forms since its first days till today. One of the first inventions to use mobile phone for paying was launched by the Finnish telecom operator Sonera. The company created a service in which goods were purchased from vending machines by calling or sending short message (SMS) to a specific service number seen in the machine. Hence, the goods were paid for with mobile operators' service bills together with other mobile telephony services. (Dahlberg, Mallat & Öörni, 2003) However, during the time and via such technology, mobile payments were possible to conduct mainly just from

vending machines. During that time there wasn't possibilities for conducting such payments generally in retail shops.

Ondrus and Pigneur (2007) argue that in order to facilitate the uptake of mobile payment, companies were using already existing technological solutions for conducting the m-payment. Hence, in Europe and U.S mobile payments were still based on the SMS, USSD (Unstructured Supplementary Service Data) or WAP (Wireless Application Protocol). Yet, the technology was developing rapidly and new generation solution for contactless payments was invented in Japan and South Korea. There they founded a smartcard including RFID-chip (Radio Frequency Identification), which was seen advanced technology enabling more convenient payments than older technologies made possible. (Ondrus & Pigneur, 2007)

The arrival of smartphones enabled mobile payments via the mobile phone's internet connection (Mallat, 2007). Now mobile phone could be used also as an access channel or platform of special mobile applications to existing payment solutions such as bank accounts. For instance, this enabled the use of mobile bank applications and therefore customers were able to shop online using their phones instead of personal computers.

Although the technology was developing rapidly, for a long time there was no really functioning solution for consumers to use only their mobile phone in retail shop for paying goods or services. This was because payment terminals accepted, depending on the region, only traditional payment instruments like debit and credit cards, and cash (Ondrus & Pigneur, 2007). Nowadays, however, most of the payment terminals support and accept payments functioning via NFC.

Ondrus and Pigneur (2007) explain that NFC is the combination of a contactless smartcard (RFID) and because NFC is a common feature in modern smart phones, the phones can be seen as contactless smart cards. Actually, in addition to Bluetooth and Wifi, NFC has nowadays become a general feature of modern mobile phone's communication system. During the past few years as a most functional technology, NFC has become the widest adopted technology for conduction payments in retail shop via mobile phone.

2.2 Factors influencing to the relationship with service provider

Next, the concepts of engagement, perceived risk and commitment are presented. The constructs are included to our research model (Figure 4). Here we also see it important to talk about perceived value because the concept has seen to have major influence on customer behavior especially on new technology adoption (Gallarza & Saura, 2006).

2.2.1 Engagement

Even though the notion "engagement" has been under scientific examination in several studies including social psychology and organizational behavior, the

concept has emerged to the marketing literature just recently during the past few years (Brodie et al., 2011). This trend is more than welcome because several studies (Hollebeek et al. 2014; Bijmolt et al. 2010; Calder et al. 2009) have stated consumers' engagement with a certain brand to have positive influences on organizational performance outcomes such as sales growth, cost reduction, online advertising effectiveness and superior profitability.

Depending on the research background, engagement has got plenty of different definitions in marketing literature. While Brodie et al. (2011, 260) say customer engagement to be "a psychological state that occurs by virtue of interactive, co-creative customer experiences with a focal agent/object (e.g., brand)", Mollen and Wilson (2010, 12) construe engagement as "a cognitive and affective commitment to an active relationship with the brand..." Calder et al. (2009, 322) say clearly that engagement is "antecedent to outcomes such as usage, affect, and responses to advertising." The definitions above show that engagement is a complex construct and it is hard to be generalized to mean one specific issue.

Partly because of fragmented field of the concept of engagement, Hollebeek, Glynn and Brodie (2014) discussed in their examination extensively about the previous studies of engagement in marketing literature. According to their findings Hollebeek et al. (2014, 1) conceptualized customer engagement as "consumer's positively valenced brand-related cognitive, emotional and behavioral activity during or related to focal consumer/brand interactions." As Hollebeek et al. (2014) and other researchers (Brodie et al. 2011; Hollebeek et al. 2014; Brodie et al. 2013) state, customer engagement is seen to be a multi-dimensional concept comprising cognitive, emotional and behavioral dimensions although Hollebeek et al. (2014, 6) remind that "the specific expression of focal 'engagement' may vary across contexts."

For instance, engagement exhibits conceptual distinctiveness from other related constructs such as overall satisfaction - defined in the further chapters - that has been seen as an engagement consequence with a potential positive relationship between these two concepts (Hollebeek et al. 2014). The authors including Brodie et al. (2011) also distinguish engagement from the concept of involvement by arguing that customer engagement "transcends beyond the mere exercise of cognition," and "unlike involvement, requires the satisfying of experiential value, as well as instrumental value."

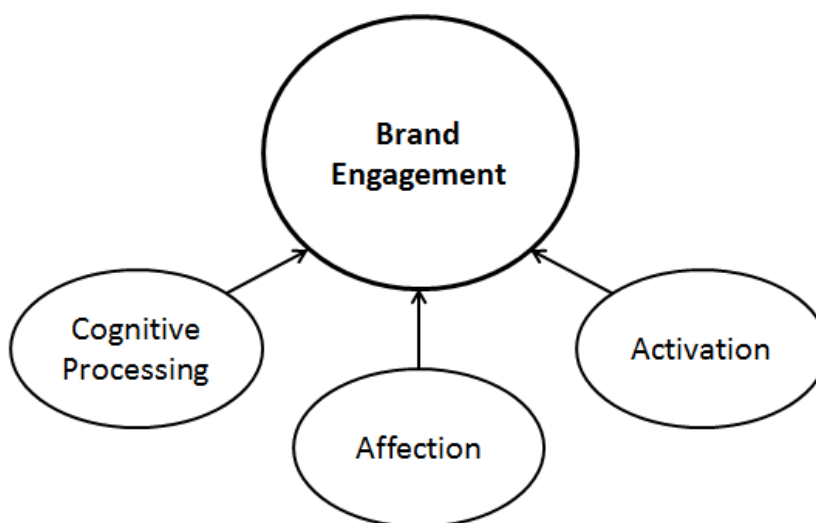


FIGURE 1: The formation of brand engagement (Hollebeek et al. 2014)

However, in this paper engagement is observed from the perspective following the research of Hollebeek et al. (2014) who state customer brand engagement (CBE) to include three components that are: cognitive processing, affection and activation (see Figure 1). First, Hollebeek et al. (2014, 10) define *cognitive processing* as “a consumer’s level of brand-related thought processing and elaboration in a particular consumer/brand interaction.” Second, *affection* is seen as an emotional dimension of CBE and the component is defined as “a consumer’s degree of positive brand-related affect in a particular consumer/brand interaction.” Third, *activation* is seen as a behavioral dimension of CBE and it is defined as “a consumer’s level of energy, effort and time spent on a brand in a particular consumer/brand interaction.” (Hollebeek et al. 2014)

In this research Hollebeek et al.’s (2014) multidimensional concept is used when observing customers engagement in the concept of a contactless payment usage. However, to simplify the names of the constructs we have named these three forms again as cognitive, affective and behavioral engagement.

We believe that when consumer has strong engagement toward a service provider he or she will be more commitment to use the products and technologies of the service provider. Thus, we posit:

H1: Affective engagement has a positive effect on commitment.

H2: Cognitive engagement has a positive effect on commitment.

H3: Behavioral engagement has a positive effect on commitment.

2.2.2 Perceived risk

For over decades perceived risk has been popular area of research within consumer psychology (Dholakia, 2001). According to Dholakia (2001) risk perception is generally viewed as “arising from unanticipated and uncertain consequences of an unpleasant nature resulting from the product purchase.” Dholakia (2001) say that within consumer psychology risk is thought to arise only from potentially negative outcomes, which is an important property of risk conceptualization. Thus, someone worries about the durability of just bought used car while other thinks whether the clothes ordered from online are the right size or not. Therefore, as Karjaluoto, Töllinen, Pirttiniemi and Jayawardhena (2014) argue, numerous dimensions of risk have been recognized and they differ across different products and services.

While in product purchase context Kaplan, Szybillo, and Jacoby (1974) identified five risk components including psychical, psychological, social, and financial and performance risk, Thakur and Srivastava (2014) examined mobile payment adoption in their research and identified three risk dimensions: security, privacy and monetary risk. Security risks relate to the technical aspects of the certain system whereas privacy risks refer to the illegal or inappropriate use of users’ personal information (Karjaluoto et al. 2014).

In the context of our study, security, privacy and monetary risks are likely to be present in several ways. First, the contactless payment operates without PIN authorization and therefore payment instrument functioning via NFC is susceptible to thefts and therefore may cause monetary losses in wrong hands. Second, the third parties may intercept the data that is transmitted over contactless networks. Third, becoming of NFC technology has drawn new companies to the finance sector, which means that the third parties are able to take care of payments traffic between consumer, bank and retailer and are not as trustworthy as traditional banks are. For instance, Apple Pay enables payments using mobile phones NFC attributes. Therefore, as a customer, you are able to use your iPhone as a payment instrument but only when adding your bankcard information into the system. This may cause certain level of uncertainty.

However, as Kaplan et al. (1974) above, also Luo et al. (2010) listed different dimensions of risks such as performance risk, financial risk, time risk, psychological risk, social risk, privacy risk, physical risk and overall risk. In the context of contactless payments, in addition to financial and security risks, also performance, social and psychological risk get involved to the payment process via contactless payment instrument. For instance, performance, social and psychological risks may appear in the situation where the contactless payment instrument is not functioning, as it should. If this scenario occurs in a congested retail shop the customer may get embarrassed because of causing longer queue behind him or her. The situation is not comfortable and can lower her or his self-image in one way or another.

Li, Hess and Valacich (2008) aim that trust is a relevant construct in an IS context because before using a novel technology, users must overcome uncertainty and perceptions of risk. Hence, before using a new technology such

as contactless payment customers evaluate the possible risks and uncertainty of the payment method. However, Li et al. (2008) also say that trust is a dynamic concept that develops over time. Hence, after certain period of time, user's trust toward a novel technology might get stronger and the user may overcome the perception of risk and uncertainty.

For instance, because of NFC, consumer can conduct contactless payments without using PIN. This might cause some form of uncertainty because anyone can therefore use the item as a payment instrument till certain limit without any verification. Thus, according to Luo et al. (2010) trust plays a critical role in mitigating perceived risks especially for transactions involving uncertainty. In addition, because contactless payment solutions are still in the initial adoption stage, consumers may be unclear about the reliability and security of the wireless communication channels in delivering their sensitive financial data, among other concerns discussed above.

Kim, Ferrin and Rao (2008) explored the role of trust and perceived risk in customer-decision process in electronic commerce (e-commerce). They argued that trust is relevant in situations where one must enter into risks but has incomplete control over the outcome. Hence, there could be seen similar risks in the concept of e-commerce and contactless payment because in the both concepts, payment process involves parties and technology to which customer has no control.

Overall, NFC is a fairly new technology to conduct payments hence in addition to the listed risks above there might arise numerous of other forms of uncertainty and perceived risks in the near future. As told earlier, mobile banking could be seen closely related to contactless payments because of the generalization of mobile payments working via NFC. As an example, according to Luo et al. (2010) mobile banking is prone to similar risks as Internet banking which we think may indirectly impact also to the perceived risk of the mobile phone use as a payment instrument via NFC technology. Based on the past research and discussion above, we state following hypotheses:

H4: Perceived risk is negatively related to affective engagement.

H5: Perceived risk is negatively related to cognitive engagement.

H6: Perceived risk is negatively related to behavioral engagement.

H7: Perceived risk is negatively related to commitment.

H8: Perceived risk is negatively related to intention to use.

2.2.3 Commitment

A number of studies have examined the effects of commitment in consumer's behaving towards a certain product, brand or organization in general (Dwyer et

al. 1987; Gundlach et al. 1995; Meyer & Allen, 1991). One objective of this chapter is to shed new light on the concept of commitment towards company serving new kind of technology as contactless payment.

There are plenty of definitions of commitment. While Moorman, Zaltman and Deshpande (1992, 316) defined the construct as “an enduring desire to maintain a valued relationship” Garbarino and Johnson (1999) describe the commitment in their study as customer’s psychological attachment, loyalty, concern of future welfare, identification, and pride being associated with the organization. Gundlach, Achrol and Mentzer (1995) highlighted the importance of commitment by saying that the construct is a significant ingredient of any successful long-term relationship. Furthermore, customers who are committed to the organization have even shown some kind of willingness to make a short term sacrifices to realize long-term benefits (Dwyer, Schurr & Oh, 1987).

Gundlach et al. (1995) argued in their study that commitment is noticed to be closely related to mutuality, loyalty and forsaking of alternatives. However, they also mentioned irrationality to have a significant role in commitment because when customers are exploring the alternatives it is irrational in the short-run sense to favor old partners and ignore alternatives that are in reality better. This is because in an uncertain environment it feels better to choose an alternative with the idea of small but steady versus maximum but risky returns.

In pervious literature commitment has seen hard to be conceptualized in general manner (Gundlach et al 1995; Meyer & Allen, 1991). A longitudinal study of the concept of commitment to the organization by Meyer and Allen (1991) divided the construct of commitment as a psychological state into the three core components. In their article they went beyond the existing distinction between attitudinal and behavioral commitment and instead they argued that commitment as a psychological state has at least three different components reflecting, first, affective commitment, second, continuance commitment and third, normative commitment. According to their study, each component is seen to have different implications to humans’ behavior and to develop as a function of different antecedents.

Although the examination of Meyer and Allen (1991) pertains to the employee’s commitment to the organization, they made a strong standpoint to the construct of commitment that has later used in consumer context studies. For instance Gundlach et al. (1995) supported their viewpoint of commitment to have three dimensions also. Firstly, commitment has an instrumental component of some form of investment that a person puts on a relationship. Second, commitment has an attitudinal component where person forms an affective and/or psychological attachment with an object. Third and the last component is a temporal dimension indicating that the relationship exists over time.

In this paper, as in Garbarino’s and Johnson’s (1999) study, commitment has seen in a perspective including four key aspects: personal identification with the organization, psychological attachment, concern to the future welfare of the organization and loyalty. Based on the discussion above, we believe that when consumer has some level of commitment towards the service provider he or she is more willing to use the service provider’s product. Moreover, we

know that committed consumer is often satisfied customer (Gundlach et al. 1995). Therefore, we posit:

H9: Commitment has a positive effect on overall satisfaction.

2.3 Perceived value in the context of technology use

The concept of value in business context is widely studied area in marketing literature and rightly because value has for a long time seen to be a fundamental basis for all marketing activity (Eggert & Ullaga, 2002). Moreover, not only academic world but marketing practitioners also have stated that perceived value has major influence on customer behavior (Gallarza & Saura, 2006). Hence, the construct would be essential to introduce in this study also.

Im, Bhat, and Lee (2015) examined the concept of creativity where perceived value played a pivotal role. They aim that creativity embedded in new products offers superior value to customers, which can lead to higher profitability. Hence, the construct is essential to take into consideration in this paper because contactless payment technology could be seen as a fairly new product that can deliver value for its users in several different ways. To understand how relevant element value is in consumers' behaving we take an overview about the concept.

A number of authors (Babin, Darden & Griffin, 1994; Dhar & Wertenbroch, 2000; Im et al. 2015) argue that perceived value includes 1) utilitarian and 2) hedonic dimensions. Im et al. (2015, 167) state that "utilitarian value refers to product's functional, instrumental or practical benefits whereas hedonic value refers to a product's aesthetic, experiential or sensory benefits." For example and generally speaking, hedonic goods provide more excitement, pleasure and fun (etc. luxury watches and sport cars) while utilitarian things are mainly functional like toothpaste or a t-shirt. However, this two are not exclusionary concepts because product can deliver both, utilitarian and hedonic value like personal computers nowadays, for instance.

According to Im et al. (2015) without a prior knowledge, hedonic and utilitarian values may come from the new product's novelty and meaningful attributes or features and the meaningful dimension emphasizes the products functionality and usefulness and ability to fulfill customer needs. Im et al. (2015) argue that the process of judging meaningfulness normally requires extensive cognitive effort involving evaluation if a product can solve a certain consumption problem.

A new product with new features has a novelty dimension which emphasizes qualities such as uniqueness, and also assessing the novelty of a product is easier and quicker because customer only needs to consider how unusual the new product is (Im et al. 2015). However, any impact of novelty matters only if the new product features are also cool (Im et al., 2015). This fact leads to the evaluation of hedonic value of the product because evaluating the

coolness of a novelty product; the sensory and experiential dimensions may come into the picture.

2.4 The factors behind the acceptance of contactless payments

Venkatesh, Thong and Xu (2012) formulated UTAUT2 model, an extended version of the initial model called Unified Theory of Acceptance and Use of Technology (UTAUT). While the original UTAUT focused on technology acceptance in organizational and employee context, UTAUT2 is built to examine acceptance and use of technology in a consumer context. Based on their study, Venkatesh et al. (2012) noticed several constructs to have direct effects on technology use. UTAUT2 proposes a theoretical basis for this study and we have adapted following constructs from UTAUT2 to the current research: habit, hedonic motivation, performance expectancy and effort expectancy. The UTAUT2 model is shown in the Figure 2 where the bolded lines represent the constructs that are adapted from the initial UTAUT2 model.

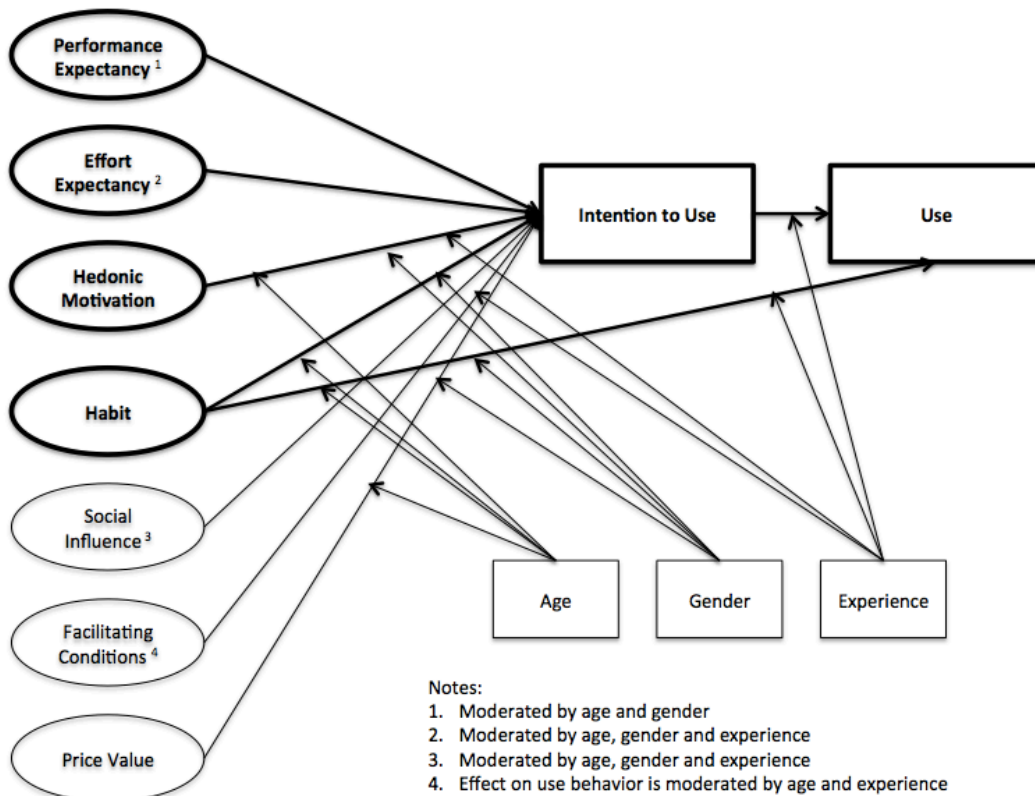


FIGURE 2 The modified UTAUT2 model (Venkatesh et al. 2012)

2.4.1 Habit

Venkatesh et al. (2012) state that the strength of the relationship between behavioral intention and later technology use is getting weaker if consumer has already formed some level of habit about the issue. Therefore habit is an essential construct to observe in this paper also.

Habit has been defined in various ways in the prior literature. While Limayem, Hirt and Cheung (2007, 709) see habit as “the extent to which people tend to perform behaviors automatically because of learning”, Kim, Malhotra and Narasimhan (2005) parallel habit to be automaticity because of repetition. This so called habit/automaticity perspective (HAP) assumes that behavior can be activated directly by stimulus cues because repeated and familiar performance of a behavior produces habituation (Venkatesh et al. 2012; Kim et al. 2005; Ouellette & Wood, 1998). The competitive perspective to HAP is the instant activation perspective (IAP), which assumes that repeated performance of behavior can result in well-established attitudes and intentions that can be triggered by the cues or attitude objects in the environment (Venkatesh et al. 2012; Ajzen & Fishbein, 2000). According to Venkatesh et al. (2012, 164) the key difference between the HAP and the IAP is “whether the conscious cognitive processing for the makeup of intention is involved between the stimulus and the action.”

For instance, if habit is established as HAP suggests, a customer will, without conscious thinking, react immediately to the context of queuing in retail shop by pulling out his or her contactless payment instrument such as mobile phone. In this example attitudes or intentions are not involved. In the example, the context cue (queuing in retail shop) has been directly associated with the action (pulling out contactless payment instrument). But then, if habit is established as IAP suggests, after an extended period of repeated payments used with contactless payment instrument, customer may have developed a positive view toward contactless paying and an associated behavioral intention to use it. Thus, when settling to the queue in retail shop for instance, the trigger for using contactless payment instrument can be something in an environment or in contexts. However, Venkatesh et al. (2012) state that both, the IAP and the HAP, require a stable environment meaning that when the context remains unchanged, habitual behavior has barely conscious control.

In the longitudinal study about automaticity Kim et al. (2005) cited Kim and Malhotra (2005) and Venkatesh, Morris and Ackerman (2000), by saying that especially in the context of information technology use, the HAP perspective implies that past use increases automatic processing and decreases conscious thinking. This is an automatic mode where evaluations or intention will no longer affect on subsequent use (Kim et al. 2005). Moreover, Kim et al. (2005) supported the notion of habit or automaticity over the competing view of the IAP by noticing that the evaluations-intention-usage relationship was weaker among heavier users comparing to lighter users. As a conclusion they aim that user behavior becomes less evaluative and intentional if the past use has been great enough.

The moderating variables in the UTAUT2 model are experience, gender and age. First, experience has often been linked to the habitual behavior (Limayem et al., 2007). Venkatesh et al. (2012, 161) concluded that especially in the context of technology use "...habit is a perceptual construct that reflects the results of prior experiences." However, Venkatesh et al. (2012) say that there are at least two pivotal differences between experience and habit. The first distinction is that experience is seen to be a necessary condition for the formation of habit. A second key notion is that depending on the extent of interaction and familiarity developed with a certain technology, the formation of differing levels of habit can result from the passage of chronological time meaning that every individual can form various levels of habit depending on their use of a certain technology. In sum, Venkatesh et al. (2012) argue that habit will have stronger influence on intention and use itself for more experienced consumers.

Second, Venkatesh et al. (2012) say that people's differences in information processing are reflected by age and gender. According to them, age and gender can in turn affect people's reliance on habit to guide behavior. Many researchers have noted that older people seem to rely mainly on automatic information processing (Hasher & Zacks, 1979) and already formed habits prevent new learning. Thus, when older consumers have formed a habit by repeated use of a specific technology, such as using traditional bank cards for paying, it is hard for them to override their formed habit (Venkatesh et al. 2012). In addition, the effect of habit will also be moderated by gender (Venkatesh et al. 2012). Meyers-Levy and Maheswaran (1991) state that men process stimulus and information in schema-based manner and are tended to ignore some relevant details. By contrast, women are noticed to manage new information in "a piece-meal" and more elaborately (Meyers-Levy & Maheswaran, 1991; Venkatesh et al. 2012). Thus, Venkatesh et al. (2012) sum that because female are more sensitive to new cues or cue changes; the effect of habit on intention or behavior will be weaker among women.

Venkatesh et al. (2012, 165) state that "experience will work in tandem with age and gender to moderate the effect on use behavior" and in such a way that the strengthening effect of experience on habit differs across different segments defined by age and gender. Venkatesh et al. (2012) aim that as age increases, the gender differences become more significant and that aging in general leads to a decreasing capability of information processing. Venkatesh et al. (2012) also argue that older men with more usage experience seem to rely more on their habits.

Generally speaking, it is entitled to say that the traditional payment instruments such as credit and debit cards could be seen familiar to use for the adult consumers among Finnish consumers to whom this study focuses on. As discussed in the first chapter, there are several ways of payments that can count as a contactless payment. Due to NFC, several items can be used for contactless payments such as mobile phone or NFC functioning debit and credit card. Although this study focuses contactless payment in general it is essential to note that for a consumer, NFC functioning payment cards may feel more comfortable to use than NFC functioning mobile phones. This is because we

assume that mobile phone is entirely new payment instrument comparing to credit or debit card that just has a new attribute, NFC-chip. Basically, the technology in a both methods is a same. Consumers may, however, feel more comfortable using credit card for paying as they likely associate it to payment rather than another object. However, based on the example of Venkatesh et al. (2012) and the discussion above we hypothesize:

H10: Habit has a positive effect on intention to use.

H11: Habit has a positive effect on use.

2.4.2 Hedonic motivation

As seen in the previous chapter voluptuousness is an essential part of perceived value in consumption context. Venkatesh et al. (2012) added hedonic motivation as a predictor of consumers' behavioral intention to use a technology that is why we are also including the construct into our research model.

Brown and Venkatesh (2005) define hedonic motivation as the fun or pleasure that consumer gets when using a certain technology. They also state that the construct plays a pivotal role in new technology use and acceptance. Although their study was focusing on technology acceptance in households, Van der Heijden (2004) noticed in his IS research that hedonic motivation has noticed to affect technology acceptance and use directly (Van der Heijden, 2004). Van der Heijden (2004) draws differentiation between utilitarian and hedonic systems. He states that the objective of utilitarian information system is to increase the user's task performance while encouraging efficiency. In turn, the value of hedonic system is a function of the degree to which the user experiences fun when using the system (Van der Heijden, 2004)

In Van der Heijden's (2004) study hedonic motivation was conceptualized as perceived enjoyment, which was noticed to be a strong predictor of intention to use. Also Venkatesh et al. (2012) found according to UTAUT2 model that hedonic motivation is a critical determinant of behavioral intention to use technology. We believe that contactless payments deliver not just utilitarian but also hedonic value hence we believe that hedonic motivation is positively related to intention to use contactless payment technology. However, Venkatesh et al. (2012) noticed that age, gender and experience moderated the effect of hedonic motivation on intention to use such that it was stronger among younger men in early stages of experience. Venkatesh et al. (2012, 163) aim that "as experience increases, the attractiveness of the novelty that contributes to the effect of hedonic motivation on technology will diminish and consumers will use the technology for more pragmatic purposes, such as gains in efficiency or effectiveness." Gender and age could also affect hedonic motivation because according to Chau and Hui (1998) younger men are seen to exhibit a greater tendency when they are in the early stages of using a new technology. Thus, based on the discussion above we posit:

H12: Hedonic motivation has a positive effect on intention to use.

2.4.3 Performance and effort expectancy

According to UTAUT intention to use a certain technology can be predicated by four antecedents: performance expectancy, effort expectancy, social influence and facilitating conditions (Venkatesh et al. 2012). In our study we focus on the performance expectancy and effort expectancy that are included to the research model also (see Figure 4).

According to Venkatesh et al. (2003) performance expectancy is pertained to the five constructs from the different models including TAM for instance. The constructs are perceived usefulness, extrinsic motivation, job-fit, relative advantage and outcome expectations. Originally, in the context of work environment, performance expectancy was defined by Venkatesh et al. (2003, 447) as “the degree to which an individual believes that using the system will help him or her to attain gains in job performance.”

However, regardless of the type of environments, Luo et al. (2010) aim that the concept of performance expectancy has been considered the most powerful tool for explaining the intention to use a certain system. Thus, in UTAUT2 model, as in our study also, Venkatesh et al. (2012, 159) defined performance expectancy as “the degree to which using a technology will provide benefits to consumers in performing certain activities.” In the context of contactless payments the easiness and rapidity of the payment process may reduce queuing time, which could be considered as a benefit.

As performance expectancy also the concept of effort expectancy is formulated from the constructs of the existing models because of the similarities of the construct definitions. The constructs are perceived ease of use (TAM/TAM2), complexity (Model of PC Utilization, MPCU) and ease of use (Innovation Diffusion Theory, IDT) (Venkatesh et al. 2003). Initially in organization context, Venkatesh et al. (2003, 450) defined effort expectancy “as the degree of ease associated with the use of the system.” However, similar to performance expectancy Venkatesh et al. (2012, 159) generalized the definition in their further UTAUT2 study as follows: “Effort expectancy is the degree of ease associated with consumers’ use of technology.” In the context of contactless payments the easiness and rapidity of payment process itself could be seen as a benefit gotten because using such a technology.

As Venkatesh et al. (2012) state performance expectancy is closely tied to utility and has continuously aimed to be the most significant predictor of behavioral intention to use a technology. In same study they also noticed effort expectancy to have significant effects on intention to use technology. In the original UTAUT (Venkatesh et al. 2003) there were made hypotheses that the relationship between intention to use and performance expectancy is moderated by gender and age. In addition, the other hypotheses were that the relationship between effort expectancy and intention to use is moderated by age, gender but experience too. Their findings supported their hypotheses such that

the effect of performance expectancy on intention to use was more salient to younger workers, particularly men. The hypotheses of the effect of effort expectancy on the intention to use were also supported in such a way that the effect was noticed to be more salient to women and more so to older women. Venkatesh et al. (2003, 461) also state that “effort expectancy was more significant with limited exposure to the technology”, therefore, the effect of effort performance on intention to use was decreasing when the user had more experience. Hence, we posit following hypotheses:

H13: Performance expectancy has a positive effect on intention to use.

H14: Effort expectancy has a positive effect on intention to use.

2.5 The relationship between intention and use of technology

IS research has studied for decades how and why individuals adapt new information technologies (Venkatesh et al. 2003). As discussed above, during the past few decades a number of models have been formulated about the acceptance and adoption of technology in several different contexts and the terms *intention* and *actual use* are common features in all of them. Figure 3 presents the basic conceptual framework underlying the class of models explaining individual acceptance of IS technology. The framework forms the basis for UTAUT and UTAUT2 as the fundamental basis for our research also.

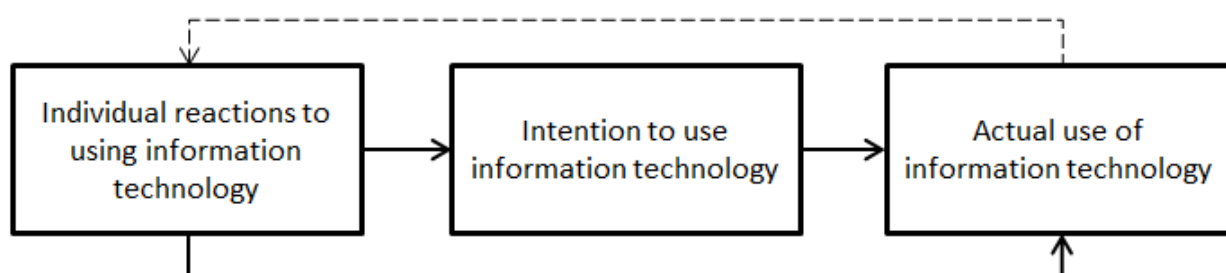


FIGURE 3 Basic concept underlying user acceptance models (Venkatesh et al. 2003)

The essential role of intention as a predictor of consumer behavior is well established in Ajzen’s (1991) examination about customers’ behavior. In his study there was built model called Theory of Planned Behavior (TPB) that suggests behavioral intention (in this study conceptualized as intention to use) to be the most significant predictor of consumer’s behavior. The prior literature shows that behavioral intention correlates with actual behavior and therefore

measuring intention will give acceptable indication of consumer behavior (Thakur & Srivastava, 2014; Venkatesh et al. 2012).

Venkatesh et al. (2012) argue that earlier experiences influence on the effect of intention on behavior. In the context of new technology acceptance Venkatesh et al. (2012) found that the effect of behavioral intention on use will decline with increasing experience. Such findings get support from the prior research. For instance Kim and Malhotra (2005) state that when the experience of using a certain system increases, a consumer has more opportunities to reinforce his or her habit because he or she has more time to follow the cues and then perform the associated behavior. Also according to Jasperson, Carter and Zmud (2005), in some contexts with increasing experience, routine behavior becomes automatic and is more and more guided by the associated cues. Hence, we also believe that experience will have influence on the relationship between the intention and the actual use of contactless payments. It might be that customer having more experience about different payment technologies in general are more likely to use the contactless payment technology. Therefore we posit:

H15: Intention to use will have a positive effect on use.

2.6 Overall satisfaction

In this part we discuss about the concept of satisfaction in consumer context. According to Garbarino and Johnson (1999) satisfaction has noticed to have pivotal role in customer's behavior and the construct has been under scientific research for decades. Satisfaction has for instance seen to be pivotal determinant of positive word-of-mouth, repeat sales and customer loyalty (Bearden & Teel, 1983). Also Oliver (1993) states a satisfactory purchase experience to be one requirement for the reason leading to repeat purchasing or using a product or service. In the light of such examinations we aim satisfaction to be an essential construct to introduce in the context of new technology acceptance - as contactless payment is.

There are plenty of different definitions of satisfaction. Anderson, Fornell and Lehmann (1994) defined overall satisfaction as "an overall evaluation based on the total purchase and consumption experience with a good or service over time" while Tsiotsou (2006, 209) defined satisfaction retelling Giese's and Cote's (2000) study more scientifically as "a summary affective response of varying intensity with a specific time point of determination and limited duration rejected toward focal aspects of product acquisition and/or consumption." However, when discussing about the *overall* satisfaction, Garbarino and Johnson (1999) summarized it as a cumulative construct that sums satisfaction with certain products and services of the organization and satisfaction with various facets of the company.

All the definitions above see satisfaction as a variable that plays a significant role behind the process of customer behavior and relationship with a

certain brand. Contactless payment is a technology that should make payments more convenient than traditional payment methods and therefore increase customers' satisfaction. When the technology is functioning as it should and customer feel satisfied towards service provider, we expect that the use of contactless payments will affect positively customers overall satisfaction about the payment process. Therefore, we posit:

H16: Overall satisfaction has positive effect on intention to use.

2.7 Research model

Drawing on previous studies of technology adoption (Venkatesh et al. 2003; Venkatesh et al. 2012) including mobile payment adoption (Schierz et al. 2010) we present our research model in the Figure 4. Hirsjärvi, Remes and Sajavaara (2008) argue that it is typical for quantitative research to develop a research model that is based on the prior findings about the subject. Our model presents continuous use of contactless payments as a multidimensional concept that has various antecedent factors.

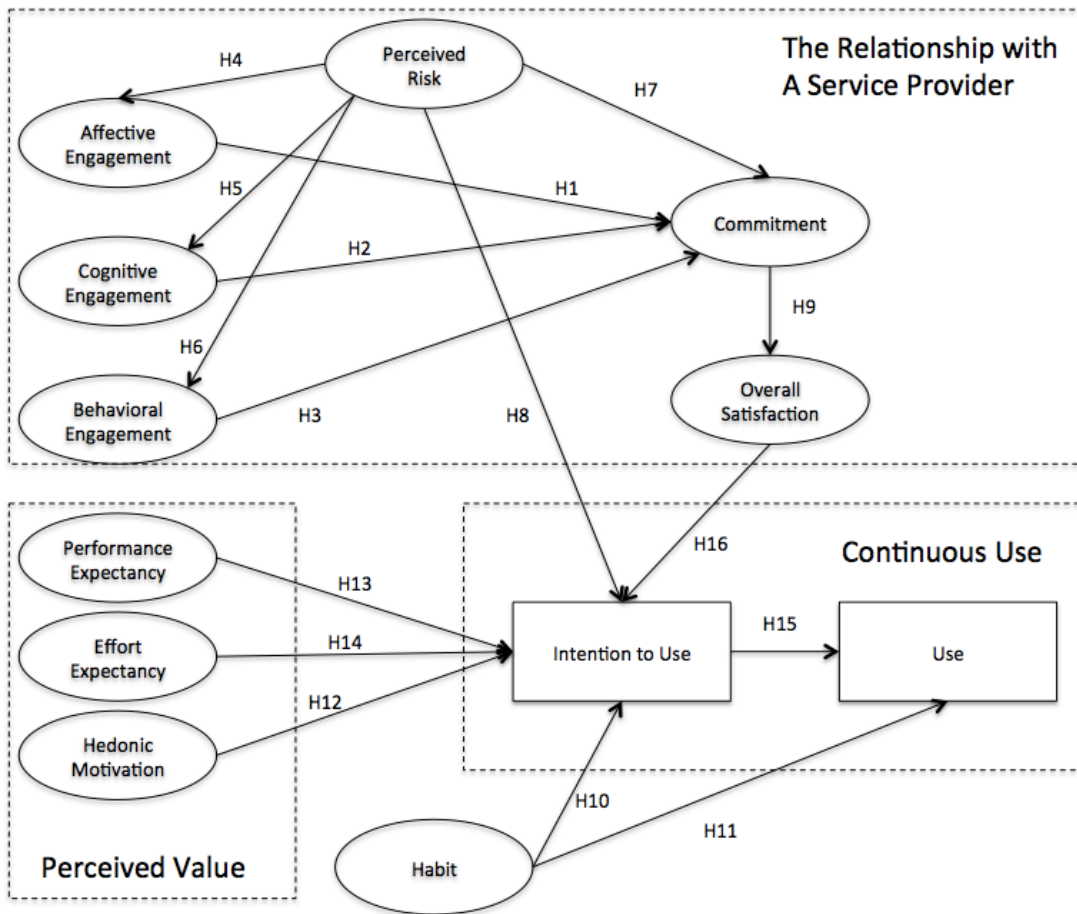


FIGURE 4 Research model

To clarify the concept, the research model is divided into three sections. The first section, *the relationship with a service provider*, consists of the constructs that are related to the customer's thoughts toward a service provider. The constructs in this section are commitment, perceived risk and affective, cognitive and behavioral engagement but also overall satisfaction. The second section is named as *perceived value*. It deals with the constructs that are related only to the technology itself. The constructs in this section are performance expectancy, effort expectancy and hedonic motivation. Yet, it is noteworthy to say that perceived risk and overall satisfaction are partly related to the second section also.

Finally, the third section named as *continuous use* consists of intention to use and actual *use* of contactless payments. With respect to the initial UTAUT2 model *habit* is added to the research model also. The previously presented hypotheses in research model are drawn into the Figure 4.

3 METHODOLOGY

This chapter is about the research methods used in the study. The chapter begins with the short discussion about the nature of quantitative research and then takes deeper overview of data collection, questionnaire development and practical implementation. At the end of the chapter the utilized data analyzing methods are presented.

3.1 Research approach and quantitative research

The perspective of our research is strongly based on previous literature about the discussed research topic. The objective of the study is to observe the relationship between the selected factors and continuous use of contactless payments. According to the prior literature the chosen constructs seem to have a certain relation with each other. In order to achieve the research objectives, we utilized quantitative research methods in this study.

It is argued that quantitative research is heavily influenced by previous theories (Bryman & Bell, 2007). Hirsjärvi et al. (2008) state that by using quantitative methods, the causality and relationships between different constructs can be observed. Alkula, Pöntinen and Ylöstalo (1994) state that based on the theories and findings of the prior literature, the researcher can present hypotheses and test them empirically. Hirsjärvi et al. (2008) remind that the researcher must clearly indicate the utilized background literature and theories. In this way the perspective of the examination and the presented hypotheses can be validated.

3.2 Data collection

The quantitative survey data is typically collected through a questionnaire. Notable is that, in a standard research, survey questions should be the same for each respondent. There are many advantages of using surveys when collecting data. While Hirsjärvi et al. (2008) argue that numerous questions can be encompassed in a single questionnaire Bryman and Bell (2007) aim that especially online questionnaire survey is cost-effective way to collect research data.

3.2.1 Questionnaire

The questionnaire is built to fit to the objectives of the research developed. The questionnaire is formed by adapting available measurement models from the prior literature. It consists of multiple-choice questions. The questions in the form are adapted from the articles below:

- Perceived risk - Featherman & Pavlou (2003)
- Engagement - Hollebeek et al. (2014)
- Commitment - Keiningham, Frennea, Aksoy, Buoye & Mittal (2015)
- Performance expectancy - Venkatesh et al. (2012)
- Effort expectancy - Venkatesh et al. (2012)
- Hedonic motivation - Venkatesh et al. (2012)
- Habit - Venkatesh et al. (2012)
- Intention to use - Venkatesh et al. (2012)
- Use - Venkatesh et al. (2012)
- Overall satisfaction - Mittal & Frennea (2010)

The questionnaire begins with a brief introduction presenting the purpose and subject about the study being an examination about the factors affecting the use of contactless payments and the differences between existing contactless payment solutions he or she has used. In the introduction part it was clearly highlighted that individual responses could not be linked to a particular respondent. However, if respondent wanted to take part to the prize draw offered for the all respondents he or she needed to write his or her contact information to the data field. Anyway, the information was used to the draw lots only which was explicitly stated. There in the introduction it was also informed that the required time to conduct the survey was estimated to be approximately 10 minutes.

In the first question the respondents were asked to choose the usage frequency for each of presented contactless payment instrument. In total the survey consisted of 48 multiple choice questions which were presented, depending of the construct, in five-, seven- or ten-point Likert scale. In the end of the questionnaire demographics about respondents' gender and age were asked.

3.2.2 Practical implementation

The questionnaire survey was conducted in early May 2016 using Webropol 2.0 program. The direct link leading to the survey was sent by email to the customers of Finnish operator. Besides the link the email also contained motivational info text about the examination. The motivational letter was also placed at the beginning of the questionnaire itself to inform respondents about the background of the examination and their possibility to take part to the lottery upon survey completion. The email was sent to 22 000 people and the survey link was open for answers for one week and a total number of respondents were 1165.

3.3 Data analysis

After the complete data collection in the Webropol 2.0 program, the data was transferred first to Microsoft Excel and then to IBM SPSS Statistics 22 program. The raw data were processed to identify missing values and insufficient answers. Although all the questions were supposed to be mandatory, two missing values were identified. The missing data were then replaced by the mean of other responses in order to prevent data distortion due the missing values. According to Tabachnik and Fidell (2007) the action was eligible because they say that substitution minimally affects variance. In order that only a moderate number of values are missing.

According to Metsämuuronen (2006) exploratory factory analysis is typically used to identify an explanatory model from responses. He also states that factor analysis can be implemented to upsurge hypothesized model's reliability. Factor analysis is an analysis tool that is primarily intended to categorize variables into small subgroups, wherein the variables exhibit stronger correlation with themselves comparing to the other variables. In addition, these variables show how indicators load to a certain factor.

In this examination the exploratory factory analysis was conducted in the SPSS Statistic 22 environment to prepare the data for confirmatory factor analysis. However, first the variables were named again according to the factors that they were expected to load on. This was done in order to categorize the data in a more effective manner.

After the preparations, confirmatory analysis was performed using SmartPLS 2.0 program (Ringle, Wende & Will 2005). In exploratory and confirmatory factor analysis sample size should exceed at least 300 and also sufficient correlations between variables have to be spotted in order to enable the formulation of relevant factors (Metsämuuronen, 2006). In this study the required conditions were fulfilled, as the sample of the study comprises 1165 respondents.

4 RESULTS

In this chapter the results of the study are presented. The chapter begins by introducing demographic profiles followed by factor analysis, measurement and structural model.

4.1 Demographic factors

The total number of respondents is 1165 which of the most (71,3%) are under the age of 50. However, 35,7% of all the respondents is located between the ages of 36-50. The majority of respondents are male (71,2%) which seems to support the notion that the most of the active users of the studied payment service provider are men. The sample demographics are shown in the Table 1.

Table 1 Demographics factors

| DEMOGRAPHIC FACTORS | FREQUENCY | VALID PERCENT |
|---------------------|-----------|---------------|
| Age | | |
| Under 18 | 16 | 1.4 |
| 18-25 | 169 | 14.5 |
| 36-35 | 229 | 19.7 |
| 36-50 | 416 | 35.7 |
| 51-65 | 253 | 21.7 |
| Over 66 | 82 | 7 |
| Total | 1165 | 100 |
| Gender | | |
| Male | 830 | 71.2 |
| Female | 335 | 28.8 |
| Total | 1165 | 100 |

4.2 Factor analysis

In order to run a factor analysis successfully Karjaluoto (2007) states that the required amount of data is presented to be over 100 observations. Therefore the total number of observations being 1165, the size of the data can be seen perfectly suitable for conducting factor analysis. Also the value of .947 in the Keiser-Meyer Olkin's (KMO) test illustrates more than good potential in proceeding with the analysis as Karjaluoto (2007) aims that the limiting value for excellent preconditions should be higher than 0.90. The zero hypotheses were tested using Barlett's test to ensure a required amount of correlation

between the variables. When Bartlett's test is having a significance value smaller than 0.01, it indicates good preconditions to continue factoring (Karjaluoto, 2007). In this study, the Bartlett's test result (Sig.) was 0.000.

Next we explore the communalities. Metsämuuronen (2006) says that communality measures the variable variance that can be explained with factors. Karjaluoto (2007) aims that the communality that exceeds 0.30 points has satisfactory correlation in forming a relevant factor. In this study, CUSE4 got low loading and was then removed from further factor analysis.

To ensure the optimal factor structure the factor analysis was conducted several times. Following Karjaluoto's (2007) example principal axis factoring and varimax rotation were chosen. According to Tabachnic and Fidell (2007) by emphasizing high values and decreasing the possibility of low values varimax rotation maximizes variance of factor loadings.

Before viewing the total variances we take a look of the initial eigenvalue indicating how many factors explain the total variance (Metsämuuronen, 2006). In our study, the factor structure based on the exploratory factory analysis done in SPSS and the eigenvalue, give rise to nine different factors which all seem to explain 63.2% of the total variance. Perceived Risk (RISK) got low loadings and was not included to the nine factors.

When observing individual factors based on the eigenvalue, we see that the first factor, commitment (COM) and affective engagement (AFF_ENG) explain 14.2% of the total variance. The second factor, effort expectancy (EFFE) explains 11%, third factor (intention to use, IUSE) explains 10% and fourth factor (overall satisfaction, OSAT) explains 8.2%. The fifth factor, behavioral engagement (BEH_ENG) explains 7.1% and the sixth factor, hedonic motivation (HEDO) explains 4.1% of the total variance. The rest three factors - habit (HABI), cognitive engagement (COG_ENG) and performance expectancy (PERE) explain 3.7%, 2.8% and 2.6% of the total variance.

4.3 Measurement model

In this chapter a confirmatory factory analysis, based on the exploratory factory analysis above, is conducted using the structural equation model program of SmartPLS 2.0. Bagozzi and Yi (2012) say that in the program the relationships between different constructs can be observed in a detailed way.

The complete factor structure was constructed in SmartPLS 2.0 in the following way: ENG1, ENG2 and ENG3 indicating cognitive engagement (CON_ENG), ENG4, ENG5 and ENG6 as variables for affective engagement (AFF_ENG), ENG7, ENG8 and ENG9 for indication of behavioral engagement (BEH_ENG). OSAT1, OSAT2 and OSAT3 indicated overall satisfaction (OSAT) when HABI1, HABI2, HABI3 and HABI4 were variables for habit. Performance expectancy (PERE) included factors such as PERE1, PERE2, PERE3 and PERE4 continuing effort expectancy (EFFE) that was indicated by EFFE1, EFFE2, EFFE3 and EFFE4. Commitment (COM) got loadings from six factors: COM1, COM2, COM3, COM4, COM5 and COM6 when perceived risk (RISK) included RISK1,

RISK2, RISK3, RISK4 and RISK5. The next construct, hedonic motivation (HEDO), included HEDO1, HEDO2 and HEDO3. IUSE1, IUSE2 and IUSE3 were indicating intention to use (IUSE) and finally CUSE1, CUSE2, CUSE3, CUSE4 and CUSE5 in order to measure continuous use (USE).

Measurement model's reliability can be measured with Cronbach's alpha and factor loadings (Bagozzi and Yi, 2012). Cronbach's alpha test is very commonly used method in the evaluation of measurement model's reliability, and test result is in good level when it gets higher than .70 (Nunnally, 1978). A satisfactory factor loading should not be lower than .60 and t-value that express the statistical significance of factor loadings should be higher than 1.96 in order to be considered statistically significant (Karjaluoto, 2007). In this paper, all the factor loadings exceed the satisfactory level, alpha values are getting values higher than .70 and also the t-values are in required level. On the whole, the results indicate good reliability of the measurement. The factor loadings, Cronbach's alphas and t-values in the study are listed in the table 2.

Average variance extracted (AVE) is a method used to measure the convergent validity of a measurement model and the AVE should be above .50 in order to ensure that the measurement errors are lower than the actual variance due to the construct (Fornell & Lacker, 1981). In this study, the AVE values are greater than .50 including all factors and also the squared AVEs exceed the AVE-values. Therefore, the measurement model can be evaluated as valid. The AVEs, squared AVE values and composite reliability are presented in the Table 3.

Table 2 Factor loadings, Cronbach's alphas and t-value in SmartPLS 2.0

| FACTOR | CRONBACH'S | | STANDARDIZED | | T-VALUE |
|------------------------|------------|-------|--------------|--------|---------|
| | ALPHA | ITEM | LOADINGS | | |
| Cognitive Engagement | .751 | ENG1 | .810 | 51.45 | |
| | | ENG2 | .840 | 59.13 | |
| | | ENG3 | .795 | 55.23 | |
| Affective Engagement | .893 | ENG4 | .896 | 120.25 | |
| | | ENG5 | .913 | 131.79 | |
| | | ENG6 | .913 | 133.14 | |
| Behavioral Engagement | 0.936 | ENG7 | .911 | 125.18 | |
| | | ENG8 | .954 | 194.22 | |
| | | ENG9 | .961 | 236.85 | |
| Commitment | .869 | COM1 | .830 | 84.03 | |
| | | COM2 | .777 | 53.96 | |
| | | COM3 | .708 | 56.30 | |
| | | COM4 | .759 | 51.44 | |
| | | COM5 | .822 | 70.43 | |
| | | COM6 | .765 | 54.70 | |
| Perceived Risk | .900 | RISK1 | .832 | 50.98 | |
| | | RISK2 | .871 | 72.34 | |
| | | RISK3 | .864 | 72.29 | |
| | | RISK4 | .790 | 42.03 | |
| | | RISK5 | .864 | 64.77 | |
| Overall Satisfaction | .920 | OSAT1 | .931 | 154.75 | |
| | | OSAT2 | .944 | 219.59 | |
| | | OSAT3 | .911 | 111.63 | |
| Intention to use | .874 | IUSE1 | .881 | 108.10 | |
| | | IUSE2 | .873 | 102.06 | |
| | | IUSE3 | .927 | 153.50 | |
| Performance Expectancy | .814 | PERE1 | .786 | 67.32 | |
| | | PERE2 | .757 | 43.92 | |
| | | PERE3 | .835 | 66.55 | |
| | | PERE4 | .805 | 60.20 | |
| Effort Expectancy | .884 | EFFE1 | .799 | 33.20 | |
| | | EFFE2 | .872 | 73.39 | |
| | | EFFE3 | .895 | 91.10 | |
| | | EFFE4 | .876 | 68.20 | |
| Hedonic Motivation | .919 | HEDO1 | .913 | 147.41 | |
| | | HEDO2 | .942 | 194.20 | |
| | | HEDO3 | .929 | 167.52 | |
| Habit | .787 | HABI1 | .903 | 127.56 | |
| | | HABI2 | .672 | 30.90 | |
| | | HABI3 | .579 | 22.50 | |
| | | HABI4 | .884 | 100.10 | |
| Use | 1.000 | CUSE1 | .280 | 33.74 | |
| | | CUSE2 | .419 | 33.74 | |
| | | CUSE3 | .426 | 33.74 | |
| | | CUSE4 | .552 | 33.74 | |
| | | CUSE5 | .485 | 33.74 | |

Table 3 AVE-values, Squared AVE and Composite reliability

| FACTOR | AVE | SQUARED AVE | COMPOSITE RELIABILITY |
|------------------------|------|-------------|-----------------------|
| Cognitive Engagement | .665 | .815 | .856 |
| Affective Engagement | .824 | .908 | .933 |
| Behavioral Engagement | .888 | .942 | .960 |
| Perceived Risk | .714 | .845 | .926 |
| Overall Satisfaction | .862 | .928 | .949 |
| Intention to use | .799 | .893 | .923 |
| Performance Expectancy | .634 | .796 | .874 |
| Effort Expectancy | .742 | .861 | .920 |
| Hedonic Motivation | .861 | .927 | .949 |
| Habit | .597 | .773 | .851 |
| Use | n/a | n/a | n/a |

4.4 Structural model

In this part the results of the study are evaluated as the structural model has been shown to be satisfactory considering validity and reliability. Therefore, the relationships between different constructs are next observed by analyzing path coefficient values that according to Bagozzi and Yi (2012) indicate the strength of the relationships between the different constructs. However, path coefficient values do not alone show the significance of the relationships' strengths. Therefore, the t-values, presented in Table 2, are also evaluated by running the bootstrapping algorithm in SmartPLS 2.0 program. Bootstrapping is a nonparametric approach evaluating the accuracy of PLS estimates (Chin, 1998). The results of the PLS estimation for direct effects are presented in Table 4.

According to Metsämuuronen (2006), R^2 value is the percent level of which the factors overall can be explained by the specific variables observed. Hence, the higher the value is the more the factor can be explained by the observed variables. In our research, as an antecedent to *use*, 68% of the factor *intention to use* can be explained by the utilized variables seen in the research model. *Commitment* can be explained to the level of 66% and *overall satisfaction* to the level of 34%. The R^2 values are presented in Table 4.

Table 4 Structural model results

| | β | R^2 |
|--|-------------|-------|
| Perceived Risk -> Commitment | -0.124*** | |
| Perceived Risk -> Cognitive Engagement | -0.036 (ns) | |
| Perceived Risk-> Affective Engagement | -0.233*** | |
| Perceived Risk -> Intention to use | -0.111*** | |
| Perceived Risk -> Behavioral Engagement | -0.111*** | |
| Cognitive Engagement -> Commitment | 0.175*** | |
| Affective Engagement -> Commitment | 0.584*** | |
| Behavioral Engagement -> Commitment | 0.204*** | |
| Commitment -> Overall Satisfaction | 0.584*** | |
| Overall Satisfaction -> Intention to Use | 0.288*** | |
| Performance Expectancy -> Intention to Use | 0.188*** | |
| Effort Expectancy -> Intention to Use | 0.110*** | |
| Hedonic Motivation -> Intention to Use | -0.044 (ns) | |
| Habit -> Intention to Use | 0.351*** | |
| Intention to Use | | 0.683 |
| Commitment | | 0.659 |
| Overall Satisfaction | | 0.339 |

Notes: *** $p < 0.01$; ** $p < 0.05$, ns: not significant

4.4.1 Total effects

Table 5 Total effects

| | Use |
|-------|----------|
| Habit | 0.425*** |

Notes: *** $p < 0.01$; ** $p < 0.05$, ns: not significant

In this study the results indicate that *habit* has the greatest total effect on *use*. Surprisingly, when the habit is included into the model, *intention to use* does barely affect *use* and in addition the relationship is not scientifically significant (See Figure 5). But interestingly, when removing *habit* from the model, it seems that the effect of *intention to use* grows significantly. The path coefficient values and their significances are shown in Table 5 and Table 6.

Table 6 Total effects when the factor habit is not included

| | Use |
|------------------|----------|
| Intention to Use | 0.391*** |

Notes: *** p < 0.01; ** p < 0.05, ns: not significant

4.4.2 Testing hypotheses

Next, we explore the previously presented hypotheses individually. The path coefficient values and t-values are shown in the Figure 5.

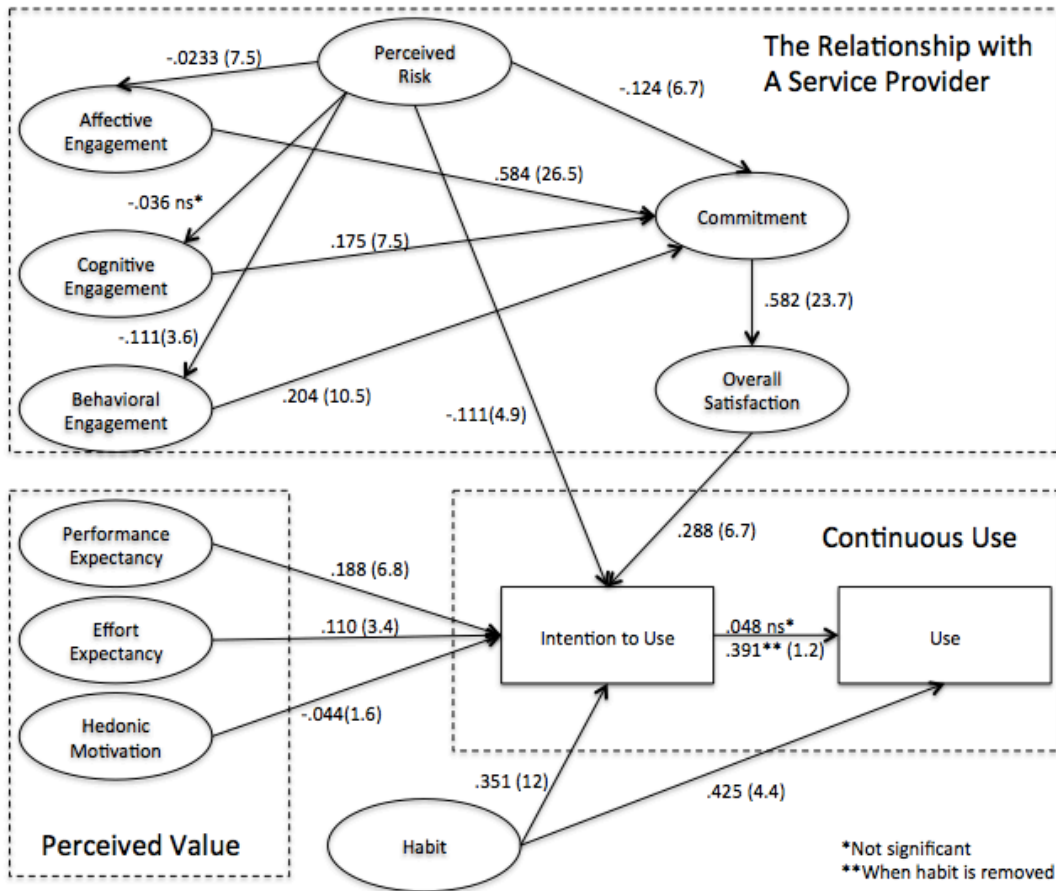


FIGURE 5 Empirical model (t-values presented in the parentheses)

H1: Affective engagement has a positive effect on commitment.

As seen in Table 4 the path coefficient value between affective engagement and commitment is .584 and t-value 26.5. This indicates that the constructs have a strong, positive and significant relationship. Also, based on the results, it seems that from all three forms of engagement the affective engagement is the most significant predictor for commitment. Hence, the hypothesis is supported.

H2: Cognitive engagement has a positive effect on commitment.

The path coefficient value between cognitive engagement and commitment is .175 and t-value 7.5. Based on this, it is justified to say that relationship between the constructs is positive and can also be classified as statistically significant. The hypothesis is supported.

H3: Behavioral engagement has a positive effect on commitment.

Behavioral engagement has a positive and lightly strong effect on commitment, as the path coefficient value is .204. T-value is 10.5, thus the relationship is also significant. Therefore, H3 is supported.

H4: Perceived risk is negatively related to affective engagement.

The path coefficient value between perceived risk and affective engagement is -.233 while t-value is 7.5, which indicates that perceived risk has a strong negative and significant relationship between affective engagement. Comparing to other relationships where perceived risk is involved, to affective engagement the perceived risk has the most major negative effect. Thus, the hypothesis is supported.

H5: Perceived risk is negatively related to cognitive engagement.

H5 is only partly supported as results show that the path coefficient value between perceived value and cognitive engagement is -.036. Also, t-value is only 1.1 in addition that the result is not scientifically significant.

H6: Perceived risk is negatively related to behavioral engagement.

The path coefficient value between perceived risk and behavioral engagement is -.111 and t-value 3.6. The results point that the constructs have a negative and lightly significant relationship between each other. Hence, H6 is supported.

H7: Perceived risk is negatively related to commitment.

The path coefficient value between the constructs is -.124 as t-value is 6.6 which shows that perceived risk has a negative and scientifically significant effect on commitment. Thus, H7 is supported.

H8: Perceived risk is negatively related to intention to use.

It is justified to say that perceived risks is negatively related to intention to use because as Table 4 shows the path coefficient value between these two constructs is -.111. The relationship is also statistically significant as t-value is 4.9. Therefore, a consumer may respond negatively to intention to use if he or she perceives risks about the concept. H8 is supported.

H9: Commitment has a positive effect on overall satisfaction.

The path coefficient value between commitment and overall satisfaction is .584 and t-value 23.7. Thus, the relationship between the constructs is highly and positively strong and also statistically significant. Hence, the hypothesis H9 is strongly supported.

H10: Habit has a positive effect on intention to use.

Habit and intention to use are constructs that have a positive strong and significant relationship as the path coefficient and t-value between them is 0.351 and 12.0. The results show that habitual behavior of a consumer affects positively on intention. Therefore, H10 is supported.

H11: Habit has a positive effect on use.

As discussed in the chapter 4.4.1 habit has a strong positive effect on use. Table 5 shows that, as a total effect, the path coefficient value between the construct is .425 and t-value 1.8. Thus, the hypothesis is supported.

H12: Hedonic motivation has a positive effect on intention to use.

The path coefficient value between hedonic motivation and intention to use is -.044. In addition the result is not scientifically significant neither. The hypothesis is not supported.

H13: Performance expectancy has a positive effect on intention to use.

The hypothesis is supported, as path coefficient value is .188 between performance expectancy and intention to use. T-value is 6.8, which points that relationship is also statistically significant.

H14: Effort expectancy has a positive effect on intention to use.

The results point that effort expectancy has a positive effect on intention to use as the path coefficient value between the construct is .110. T-value being 3.4 indicate result to be statistically significant. The result gives the right to say: H14 is supported.

H15: Intention to use will have a positive effect on use.

Surprisingly, the path coefficient value between intention to use and use itself is only .048. Hence, by looking the path coefficient value only, the hypothesis would be slightly supported. However, the result is not scientifically significant and therefore H15 is not supported.

Nevertheless, we wanted to see how the path coefficient value of intention to use acts when removing habit from the model. The result was notable because when removing habit from the model, the H15 is strongly supported, as the path coefficient value is rises to .391.

H16: Overall satisfaction has positive effect on intention to use.

Overall satisfaction affects positively and significantly to use, as the path coefficient value between the constructs is .288 and t-value 6.7. The last hypothesis, H16, is supported.

5 DISCUSSION

In the final chapter of this study the empirical findings alongside the theoretical background are presented. Also the research questions will be answered. In addition in this chapter the possible limitations but also suggestions for future research are discussed.

5.1 Theoretical contributions

One of the main objectives of this paper was to shed a light on the factors affecting use of contactless payments in consumer context. We modified the initial UTAUT2 model by adapting relevant constructs into it and then discovering the relationships between them.

As discussed in the second chapter, information system research has been studying the adoption of information technologies for tens of years. Initially the examinations used to focus on the employee context and later the consumer context came into the picture (Venkatesh et al. 2003). Mainly the examinations about the technology use are based on the initial TAM and on the extended versions of it. Even though our theoretical basis mainly lies on such a theory, marketing literature has shown that consumer's behaving includes numerous of other aspects and factors too. Therefore, based on prior marketing literature we have chosen relevant constructs and evaluated how they act with the other initial constructs from the UTAUT2.

As seen in the research model we divide the model into three parts. First, we focused on the relationship with service provider by observing how perceived risk was affecting on commitment, intention to use and affective, behavioral and cognitive engagement. In this section we also evaluated the relationship between those three forms of engagement to commitment and how commitment therefore was affecting on overall satisfaction and on top of that we explored the relationship between overall satisfaction and intention to use.

Then, with respect to initial UTAUT2 model we evaluated the relationship between performance expectancy, effort expectancy and hedonic motivation on intention to use. Finally on the continuous use section we evaluated the relationship between habit and intention to use on use itself.

From these perspectives, doing such a relationship evaluation between the constructs, we try to find the answers to the listed research questions:

- *Is there significant relationship between the chosen factors and continuous use of contactless payments?*
- *How do the chosen factors affect the continuous use of contactless payments?*

First, when concentrating on the constructs in the section relationship with service provider, we found interesting relations between the factors. Despite on the context, perceived risk is a factor that often causes uncertainty and affects negatively on the consumers' thoughts and behavior (Kaplan et al., 1974). The technology context is not an exception because we noticed that perceived risk influence on engagement and commitment negatively. Also it seems that according to our results the influence of perceived risk on intention to use contactless payments was negatively enough that consumer consider whether to use the payment instrument or not. The result is not a surprise as numerous of researchers (Karjaluoto et al. 2014; Thakur and Srivastava, 2014; Kaplan, 1974) aim that especially in the payment context the risks are always present in a form or another. We believe that because of the fairly new technology people tend to act even more carefully. However, we believed that the impact of perceived risk on intention to use would have been even stronger but surprisingly the impact of risk was weaker than expected. This may occur because the sample of the research consisted mainly of the customers who have used contactless payments at least once and therefore had some level of experience about the technology.

Next we focus on the relationship between engagement, commitment and overall satisfaction and finally how overall satisfaction affects intention to use. As the results indicate, all the three forms of engagement had a positive effect on commitment, especially affective engagement that seem to have very strong connection to commitment. The result is not a surprise because also earlier studies have pointed that engagement and commitment often go hand in hand (Vance, 2006).

But how does commitment affect overall satisfaction and therefore how overall satisfaction affects intention to use contactless payments? Numbers of authors have stated commitment to have great impact on satisfaction (Garbarino and Johnson, 1999; Gundlach et al., 1995). Also the results of our study seem to indicate such a phenomenon. According to the results we aim that committed customers are likely to be satisfied too and as the results show, overall satisfaction affects therefore intention to use contactless payments. All in all, if you are engaged and committed consumer feeling positive overall satisfaction about the service provider, there is possibility that you have some level of intention to use contactless payments.

Next we evaluate impacts of the factors adopted from the initial UTAUT2 model on intention to use contactless payments. The contracts are observed from a technology aspect. As Venkatesh et al. (2012) state, performance expectancy is a strong predictor of behavioral intention to use a technology. Also our findings indicate similar results. Hence, if consumer feels that contactless technology makes the payment easier, he or she may find some intention to use it. Venkatesh et al (2012) also noticed effort expectancy to have remarkable influence on intention to use a technology. Our study points similar results, although the relationship between effort expectancy and intention to use was not very significant. Yet, based on the results it is justified to say that technological barriers, for instance, affect intention to use contactless payments.

Brown and Venkatesh (2005) say that the hedonic motivation plays a pivotal role in new technology use. However, we found that the relationship between hedonic motivation and intention to use was negative and not that significant like weak t-value also pointed. Such a result seems to indicate that payment transaction itself is not a process including feelings of enjoyment or pleasure. Maybe a payment is seen always as compulsory process whether it is conducted with cash, credit card or some other method. Therefore making the payment transaction process easier or faster to conduct does not mean that the process becomes more hedonic for consumer.

How does habit affect intention to use and use itself? Venkatesh et al. (2012) noticed that habit is a strong predictor for intention and use itself and therefore can weaken the actual technology usage adoption. The results of this study support the observation, as habit seems to have a great influence on both. The results indicate that even though contactless payment technology makes transaction easier to conduct, the old habits may drive us to use old and familiar payment methods such as credit or debit cards with PIN. Additionally, Venkatesh et al. (2012) also stated that the older the consumer is the more influence the habit will have. 57% of the respondents of this study were between the ages of 36-65. Thus the result supports the statement of Venkatesh et al. (2012) even more.

Finally, when focusing on how intention to use contactless payments affect use itself, we found interesting outcomes. The most considerable result of this paper is that according to our results intention to use does not have a significant relationship with use itself. However, when removing habit from the model, the influence of intention grows significantly. Such results indicate that in certain situations intention has an impact on use but when the habit is present, intention barely affect use.

5.2 Managerial implications

The purpose of current study was to examine the factors affecting contactless payments usage. The subject could be seen relevant because number of companies around the world have recently invested plenty of resources for developing new and innovative payment solutions. Just to name few, Apple has launched Apple Pay and Google has its own Google Wallet. Both of the corporations seem to lean on the Garner's assumption that in future consumers will use their smartphones more often for paying their purchases. The traditional banks in Finland are doing the same. First they adapted NFC into the traditional credit and debit cards and now they are developing their own solutions for mobile payments: Osuuspankki has Pivo, Nordea has Nordea Pay and Aktia just launched Aktia Wallet.

NFC technology is present in all of the payment solutions above. In addition to NFC the previously mentioned "mobile wallets" may have another features that affect consumer's behavior. Thus the NFC payment possibility might not be the only significant feature for all consumers. Yet, it can be

predicted that NFC is and will be the basic attribute in the most payment applications. Therefore, the current study aims to provide useful information about how customers behave in the context of contactless technology usage.

As Venkatesh et al. (2012) state habit has a great influence on use of technology. The results of our study also pointed such an observation but especially in the contactless payment context. Considering the observation that habit has a great influence on contactless payment usage, managers should enhance their knowledge about which factors drive consumers to use traditional payment methods and how to break down the old habits.

This examination is topical and sheds new light on the consumer behavior in contactless payment context. The study and its results may be useful especially for managers who work around with new business development in banking and financials. It is predicted that the PSD2 directive will revolutionize the whole banking and financing field enabling new kind of innovations. Thus the current study is extremely timely.

In general the study reminds managers about the importance of such constructs as commitment, engagement and overall satisfaction in context of consumer behavior. As numerous of studies have stated there are remarkable relationships between the constructs (Garbarion and Johnson, 1999; Gundlach et al. 1995), also our examination indicates such significance. Overall, the study provides a comprehensive picture of consumer behavior in financial technology context.

5.3 Evaluation of the research

Reliability and validity must be observed when evaluating the research. Hirsjärvi et al. (2008) say that reliable research is an examination that can be repeated and when doing so, similar results should be received. The idea is that if different researchers complete the same research by doing same procedures, he or she would get similar results. Validity of a research instead measures whether the study truly observes the actual phenomenon. Validity itself can be divided into internal and external validity. Internal validity observes if the concepts are correct and base theory carefully selected. Internal validity also evaluates if the measurement model really is capable to measure the focused phenomenon. External validity points if the results can be generalized or not. (Metsämuuronen, 2006)

This paper has gotten a strong influence by the research of Venkatesh et al. (2012) as the research and measurement model is widely based on their findings and scales. Also hypotheses especially regarding the adopted factors from UTAUT2 are designed by the influence of their theoretical views. However, when it comes to reliability and repetition, all the phases in our research are described and methods are clarified, thus, the repetition of the study in same manners is possible. The questions asked in the questionnaire were adopted from prior literature and then translated from English to Finnish. The

questionnaire is shown in the appendix to ensure latter replication of the study. Overall, internal validity and reliability could be stated strong.

Next, we discuss about the external validity and generalization of the research. The sample of our study consists of Finnish consumers. Although the sample size of the research is fairly high (1165) all the respondents were also customers of the specific service provider, Elisa Lompakko. This may cause limitations at least regarding generalization and therefore will be discussed later in the next chapter.

When evaluating validity and reliability of the measurement model, all the AVE values and Cronbach's alpha values exceed the satisfactory levels. Fornell and Lacker (1981) state that satisfactory level for AVE is .50. Satisfactory value for Cronbach's is at least .70 (Bagozzi and Yi, 2012). All the values in the research exceed these levels. Overall, the validity and reliability of the measurement model could be seen strong.

5.4 Limitations

Bryman and Bell (2007) say that the generalization is one of the main purposes for quantitative research. Therefore a studied sample should represent the entire population. The sample of this research was collected through voluntary participation. The sampling method was convenience sampling that is according to Bryman and Bell (2007) accessible approach for a researcher to conduct. The first limitation is that because the participating the survey was voluntary, we assume that only the most active and technology oriented consumers would have participated the survey. Therefore we tried to attract as many as possible by the prize drawn. At the end, the total number of respondents was more than satisfactory and the usage experience about the different contactless technology seems to be quite varied.

The greatest limitation regarding generalization of the results is that the sample consisted of the consumers of one specific contactless payment service provider, Elisa Lompakko. Also it was known that all the respondents had used their service at least once. Therefore, the respondents already had some sort of experience and attitude about the contactless payments at least towards Elisa Lompakko. This may affect their answers regarding perceived risk about the contactless payments for instance. However, Elisa Lompakko markets itself as an alternative payment solution that eases routines in payment context so it was predicted that the respondents had used also contactless payment instruments provided by other companies too. Therefore, the respondents were asked about their usage experience regarding contactless payment solutions made by other service providers such as their own bank too.

As stated earlier the reliability and validity of the measurement model reached satisfactory level as Cronbach alpha and AVE values were evaluated to be on satisfactory levels. Slight limitation may be caused by the translation because the original language of the utilized questionnaire is English. However, the questions are carefully translated into Finnish by keeping mind the possible

cultural differences that could cause misunderstandings if used wrong words in a wrong context. The utilized questionnaire is shown in the appendix 1.

5.5 Future research

The concept of mobile payment is fairly new and the technology development is rapidly progressing. Although NFC technology seems to be an essential part of mobile payment context, it would be interesting to get more information about mobile payment acceptance in general. This would, however, demand such an extensive examination because of the multidimensionality of the concept of mobile payment.

Like numerous of technology acceptance studies before, also our research has gotten its theoretical basis partly from the initial technology acceptance model (Davis, 1989). Although TAM and extended versions of it are proven models, performing a qualitative research about the concept could give deeper insights of the factors affecting use of contactless payments and mobile payment in general.

The results of our study indicate that habit has a great influence on intention and use of contactless payments. However, banking and financial sector is in turning point because of the PSD2 directive that enables third party providers such as Apple and Google to get their hands on the banks' customer information in case of receiving permission by the customer. Therefore traditional banks are not any more the only organizations offering financial services. In future, it would be interesting to explore how strong factor habit is in the changing financial sector.

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APPENDIX 1

SURVEY IN FINNISH



Kysely kuluttajan suhtautumisesta lähimaksamiseen

1. Kuinka usein koet käyttäväsi seuraavia lähimaksuvälineitä? (1= ei koskaan, 7= päivittäin) *

| | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
|---|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|
| Elisa Lompakko (Maksutarra) | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| Matkapuhelimen lähimaksu (NFC, Lähimaksu SIM) | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| Osuuspankin lähimaksukortti | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| Nordean lähimaksukortti | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| Jokin muu lähimaksuväline | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |

2. Elisa Lompakko on palveluntarjoaja, joka pitää hyvää huolta asiakkaistaan. *

| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | |
|-------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|---------------------|
| Täysin eri mieltä | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | Täysin samaa mieltä |

3. Elisa Lompakko on vilpitön. *

| | 1 | 2 | 3 | 4 | 5 | |
|-------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|---------------------|
| Täysin eri mieltä | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | Täysin samaa mieltä |

4. Ottaen huomioon kaikki tekijät liittyen lähimaksamiseen, miten riskialttiina pidät lähimaksamisen käyttöä? *

| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | |
|---------------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|------------------------|
| Ei lainkaan riskialttiina | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | Erittäin riskialttiina |

5. Elisa Lompakon käyttö saa minut ajattelemaan Elisa Lompakkoa. *

| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | |
|-------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|---------------------|
| Täysin eri mieltä | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | Täysin samaa mieltä |

6. Pidän lähimaksamista hyödyllisenä elämässäni. *

| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | |
|-------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|---------------------|
| Täysin eri mieltä | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | Täysin samaa mieltä |

7. Ajattelen paljon Elisa Lompakkoa, kun käytän sitä.

| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | |
|-------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|---------------------|
| Täysin eri mieltä | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | Täysin samaa mieltä |

8. Elisa Lompakko toimii aina ammattimaisesti. *

| | 1 | 2 | 3 | 4 | 5 | |
|-------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|---------------------|
| Täysin eri mieltä | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | Täysin samaa mieltä |

9. Ostosten tekeminen lähimaksulla on riskialtista. *

| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | |
|-------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|---------------------|
| Täysin eri mieltä | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | Täysin samaa mieltä |

10. Lähimaksamisen käyttäminen ostosten maksamisessa lisää huomattavasti epävarmuutta maksutapahtumaan. *

Täysin eri mieltä 1 2 3 4 5 6 7 Täysin samaa mieltä

11. Lähimaksamisen käyttäminen altistaa kokonaisvaltaiselle riskille. *

Erittäin epätodennäköisesti 1 2 3 4 5 6 7 Erittäin todennäköisesti

12. Saan Elisa Lompakon käytöstä (tai asiakkaana olemisesta) takaisin sen mitä siihen annan/laitan. *

Täysin eri mieltä 1 2 3 4 5 6 7 8 9 10 Täysin samaa mieltä

13. Lähimaksamisen käyttäminen kasvattaa mahdollisuuksiani saavuttaa asioita, jotka ovat tärkeitä minulle. *

Täysin eri mieltä 1 2 3 4 5 6 7 Täysin samaa mieltä

14. Lähimaksaminen auttaa minua saavuttamaan asioita paljon nopeammin. *

Täysin eri mieltä 1 2 3 4 5 6 7 Täysin samaa mieltä

15. Oikeanlaisen arvomaailman takia, Elisa Lompakon asiakkaana oleminen tuntuu oikealta. *

Täysin eri mieltä 1 2 3 4 5 6 7 8 9 10 Täysin samaa mieltä

16. Lähimaksamisen käyttäminen parantaa tuottavuuttani. *

Täysin eri mieltä 1 2 3 4 5 6 7 Täysin samaa mieltä

17. Lähimaksaminen on vaarallinen maksutapa. *

Täysin eri mieltä 1 2 3 4 5 6 7 Täysin samaa mieltä

18. Lähimaksamisen käytön opettelu on minulle helppoa. *

Täysin eri mieltä 1 2 3 4 5 6 7 Täysin samaa mieltä

19. Elisa Lompakko on erittäin vastuullinen. *

Täysin eri mieltä 1 2 3 4 5 Täysin samaa mieltä

20. Lähimaksamisen käyttäminen on selkeää ja ymmärrettävää. *

Täysin eri mieltä 1 2 3 4 5 6 7 Täysin samaa mieltä

21. Elisa Lompakko ymmärtää asiakkaita. *

Täysin eri mieltä 1 2 3 4 5 Täysin samaa mieltä

22. Mielestäni lähimaksaminen on helppo käyttää. *

Täysin eri mieltä 1 2 3 4 5 6 7 Täysin samaa mieltä

23. On helppoa tulla taitavaksi lähimaksamisen käyttäjäksi. *

Täysin eri mieltä 1 2 3 4 5 6 7 Täysin samaa mieltä

24. Lähimaksamisen käyttäminen on hauskaa. *

Täysin eri mieltä 1 2 3 4 5 6 7 Täysin samaa mieltä

25. Lähimaksamisen käyttäminen on nautinnollista. *

Täysin eri mieltä 1 2 3 4 5 6 7 Täysin samaa mieltä

26. Lähimaksaminen on viihdyttävä maksutapa. *

Täysin eri mieltä 1 2 3 4 5 6 7 Täysin samaa mieltä

27. Lähimaksamisesta on tullut minulle tapa. *

Täysin eri mieltä 1 2 3 4 5 6 7 Täysin samaa mieltä

28. Olen riippuvainen lähimaksamisesta. *

Täysin eri mieltä 1 2 3 4 5 6 7 Täysin samaa mieltä

29. Minun on pakko käyttää lähimaksamista. *

Täysin eri mieltä 1 2 3 4 5 6 7 Täysin samaa mieltä

30. Lähimaksamisen käyttämisestä on tullut minulle luonnollista. *

Täysin eri mieltä 1 2 3 4 5 6 7 Täysin samaa mieltä

31. Elisa Lompakon aiomukset ovat hyviä. *

Täysin eri mieltä 1 2 3 4 5 Täysin samaa mieltä

32. Aion jatkaa lähimaksamisen käyttöä tulevaisuudessa. *

Täysin eri mieltä 1 2 3 4 5 6 7 Täysin samaa mieltä

33. Elisa Lompakko on erittäin luotettava. *

Täysin eri mieltä 1 2 3 4 5 Täysin samaa mieltä

46. Käytän useimmiten Elisa Lompakkoa, kun maksan ostokset lähimaksulla. *

1 2 3 4 5 6 7
Täysin eri mieltä Täysin samaa mieltä

47. Olen mielelläni Elisa Lompakon asiakas. *

1 2 3 4 5 6 7 8 9 10
Täysin eri mieltä Täysin samaa mieltä

48. Pidän Elisa Lompakosta enemmän kuin muista saman alan palveluntarjoajista, koska sen arvot ovat minulle tärkeitä. *

1 2 3 4 5 6 7 8 9 10
Täysin eri mieltä Täysin samaa mieltä

Vastaajan taustatiedot

49. Vastaajan sukupuoli. *

Mies Nainen

50. Vastaajan ikä. *

- alle 18 vuotta
- 18-25 vuotta
- 26-35 vuotta
- 36-50 vuotta
- 51-65 vuotta
- yli 66 vuotta

APPENDIX 2

SURVEY IN ENGLISH

Engagement

Using (brand) gets me to think about (brand).

I think about (brand) a lot when I'm using it.

Using brand stimulates my interest to learn more about brand.

Using (brand) makes me happy.

I feel good when I use (brand).

I'm proud to use (brand).

I spend a lot of time using brand compared to other (category) brands.

Whenever I'm using (category), I usually use (brand).

(Brand) is one of the brands I usually use when I use (category).

Trust

XYZ brand is very honest

XYZ brand is very reliable

XYZ brand is responsible

XYZ brand understands consumers

XYZ brand is always professional

XYZ brand acts with good intentions

Commitment

I take pleasure in being customer of firm/brand.

Firm/brand is the provider that takes the best care of its customers.

I get back what I put into my relationship with firm/brand.

My attachment to firm/brand) is mainly based on the similarity if our values.

Because of the values firm/brand stands for, being a customer feels like the right thing to do.

I prefer firm/brand to others because it stands for values that are important to me.

Perceived risk

(If using mobile payment devices and applications...)

On the whole, considering all sorts of factors combined, about how risky would you say it would be to sign up for and use XXXX? (Not risky at all/very risky)

Using XXXX to pay my bills would be risky. (Strongly disagree/agree)

XXXX are dangerous to use. (Strongly disagree/agree)

Using XXXX would add great uncertainty to my bill paying. (Strongly disagree/agree)

Using XXXX exposes you to an overall risk. (Improbable/probable)

Performance Expectancy

I find XYZ useful in my life.

Using XYZ increases my chances of achieving things that are important to me.

Using XYZ helps me accomplish things more quickly.

Using XYZ increases my productivity.

Effort Expectancy

Learning how to use XYZ is easy to me.

My interaction with XYZ is clear and understandable.

I find XYZ easy to use.

It is easy for me to become skillful at using XYZ.

Hedonic Motivation

Using XYZ is fun.

Using XYZ is enjoyable.

Using XYZ is very entertaining.

Habit

The use of XYZ has become a habit for me.

I am addicted to using XYZ.

I must use XYZ.

Using XYZ has become natural to me.

Intention to use

I intend to continue using XYZ in the future.

I will always try to use XYZ in my daily life.

I plan to continue to use XYZ frequently.

Overall satisfaction

Overall, how satisfied are you with...? (1 =extremely dissatisfied, 5 = extremely satisfied)

Please rate your agreement with the following item: I am very satisfied with....
(1 = strongly disagree, 10 = strongly agree)

How would you rate your experience with...? (1 = poor, 7 = excellent)