• Copenhagen Business School •
• MSc Management of Innovation and Business development •

MASTER THESIS

The Effect of Value Added Services on consumers' intention to adopt proximity mobile payments

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Executive Summary

This thesis investigates the importance of mobile payment Value Added Services by asking:

How do Value Added Services affect consumer intention to adopt mobile payments?

Two literature reviews were conducted: The first scrutinized mobile payment adoption research, and resulted in the identification of four parameters found to affect consumers' intention to adopt mobile payments: Perceived Usefulness, Perceived Ease of Use, Compatibility, and Convenience. The second review examined literature on the role of supplementary services, and found that supplementary services positively affect perceived value and intention to adopt. Through the juxtaposition of these two literature reviews, two hypotheses was developed:

1. Value Added Services will positively affect the intention to adopt mobile payments

2. Value Added Services will positively affect the attitude towards using mobile payments

The first hypothesis addresses the research question directly and hypothesizes an increase in Intention to Adopt as a result of Value Added Services.

The second hypothesis addresses the underlying motivations behind the expected increase in Intention to Adopt, by investigating Attitude Towards Use – a mediator between the four identified parameters and the Intention to Adopt.

Through an experimental design in which the experimental group was presented with a proximity mobile payment solution together with Value Added Services, and the control group was presented with a proximity mobile payment alone, it was shown that Value Added Services positively affect consumers' intention to adopt mobile payments, and that this effect is the result of Value Added Services' positive effect on Perceived Usefulness, Compatibility, and Convenience.

This study offers several implications for mobile payment providers in regards to boosting the adoption of mobile payments. Additionally, it suggests that future research on mobile payment adoption broadens to scope to include Value Added Services.

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1 Introduction

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Payments as we know them today have come a long way since the trading of seashells for goods. Four major innovations have helped shape the contemporary payment industry: 1) the birth of money in the form of metallic coins, 2) the creation of checks, 3) the creation of paper money, and 4) the rise of electronic money through payment cards and the like (Evans et. al, 2005).

Now we are facing another innovation that is likely to disrupt the payment industry: Mobile payment. Mobile payments are payments for goods and services authorized, initiated, or realized with a mobile device (Schierz et al., 2010).

Mobile payment has existed for many years; one of the first ways in which it was seen was in the form of premiumSMS, or pSMS, in which a buyer pays for a good or service via his phone bill. Since the introduction and proliferation of smartphones, however, mobile payment has developed and can now be seen in various forms, for instance as app-payments[1], "iZettle" solutions[2], or NFC payments[3].

Where mobile payments become really interesting and are likely to replace cash and cards is when used for proximity payments, or point-of-sales (POS) payments. These are defined as "in-store or location-based payments with a smartphone to a point of sale" (Forrester, 2012). The focus in this thesis is on these proximity payments, and the term "mobile payment" will in the remaining parts of this thesis reflect this focus.

1.1 Mobile Payments in Denmark

Despite the fact that most people are aware that it is possible to pay with a mobile phone, mobile payments still only make up a fraction of payments in Denmark (Danish Competition and Consumer Authority, 2012). Of course, the access to making mobile payments in Denmark

[1] In which a payment card is linked to an app and payment is deducted from a bank account via the payment card

[2] In which a payment card reader is attached to the phone

[2] In which a payment card reader is attached to the phone

[3] In which the phone is tapped on an NFC-reading terminal and an NFC chip inside the phone is used for payment, which is deducted via a payment card or directly form the bank account

is still somewhat limited, mainly being focused on pSMS payments, app-purchases, and peer2peer (p2p) transferring services. In Denmark, the most successful attempt of mobile payment so far is Danske Bank's p2p platform, MobilePay, which after six months[4] has been downloaded 761,290 times[5] (Danske Bank, 2013), and is receiving excellent reviews from users. People seem comfortable with transferring money via mobile phones – and some are even complaining that the transfer size limit is 1,500 DKK, and would like to see a higher limit (Danske Bank).

Similarly, commerce[6] via the mobile phone is not unfamiliar to Danes. Especially the rapid proliferation of smartphones in Denmark has led to fast growth of m-commerce. In 2011, 7% of the Danish population had purchased goods or services from a webshop via a mobile phone. In 2012, that number had risen to 19%. When looking at smartphone owners, the share was 33% (Dansk Statistik, 2013). Hence, the comfort with commerce via the mobile phone is increasing, which is likely to have a positive effect on people's comfort with mobile payments.

It is especially the younger segment that uses m-commerce. Figure 1 shows that 25-34 year-olds are most frequent users of m-commerce, followed by the age groups 15-24 and 35-44.

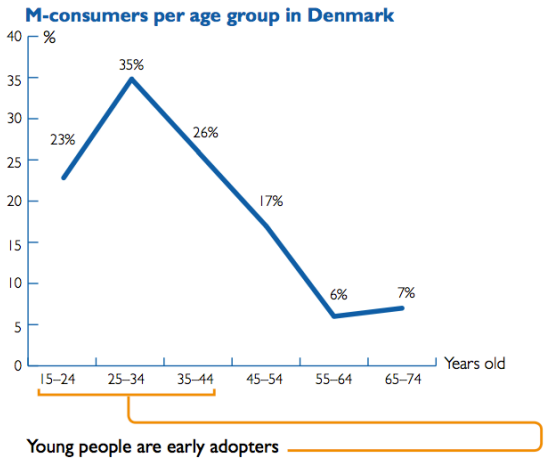


Figure 1 - m-commerce by age group (from DIBS e-commerce survey, 2013)

[4] As of today's date, November 21, 2013

[5] This shows the number of downloads, not number of users registered. It is likely that the same people have downloaded the app several times (due to new phone, rebooting of system, etc.)

[6] Mobile commerce and mobile payments are two different things: Mobile commerce means "the use of wireless handheld devices such as cellular phones and laptops to conduct commercial transactions online" (investopedia, 2013), whereas mobile payments are payments initiated by the phone. The relevance of commerce in this section is consumers' comfort with using their phone to make payment

The above shows that Danish consumers are comfortable with paying over their mobile phone, which may indicate that the perceived security is quite high amongst Danish consumers – something that is otherwise mentioned in the mobile payment adoption literature as being a frequent obstacle (Dahlberg, 2007; Keramati et al., 2012; Pousttchi et al., 2008).

1.2 Proximity Mobile Payment in Denmark

At the moment of writing (November, 2013) there are no successful proximity payment solutions in Denmark. However, there are several companies that are working on a solution. 4T, a joint venture between the four mobile network operators (MNOs) in Denmark, are planning to launch a solution by the end of 2013. Nets has announced the implementation of a payment method that uses NFC. Coop will be changing all their terminals to NFC terminals an are launching a bank and an NFC-payment app. And finally, Danske Bank is working on an in-store solution for MobilePay.

As these mobile payment initiatives are being launched within the near future, it is important that payment service providers offer the right value proposition to the consumers or the launch will fail (IBM, 2012)

Several attempts have been made worldwide to develop proximity payments but only few of these initiatives have been successful. Many consumers are of the opinion that mobile payment in itself does not offer enough value for consumers to choose it over traditional payment options such as cards and cash, which are already established standards. A few studies focus on the failure of mobile payment to become widespread. DIBS found that 34% of (European) consumers say that the main reason for not using mobile payments is that they cannot see the need (DIBS, 2013). Additionally, a 2013 survey published by Accenture concludes that the technology of mobile payments is not enough and that providers should offer added value. The survey suggests that providers should consider incorporating "*other value-added tools in order to encourage broad adoption as quickly as possible. Today's consumers expect their smartphones to improve and simplify their lives*" (Accenture, 2013:9). While mobile payment essentially offer the same as card payments, the true value lies in the potential additional offerings when paying via mobile phones (Hayashi, 2012). For instance, in the 2013 survey of that entailed 4,000 smartphone users in USA and Canada, Accenture found that rewarding consumers when making mobile payments, for instance through loyalty points

or coupons, would increase consumers' use of mobile payments: "*60 percent of consumers who already make mobile payments said they would probably do so more often if they received instant coupons as a result*" (Accenture, 2013:6)

Therefore, while adoption of a new technology is often driven by an unmet need, mobile payment in itself does not offer to do so. The success and rapid diffusion of mobile payments in Africa is often cited as an example of a good strategy for implementing solutions for mobile payment[7], but the success is due to its ability to address a pain point; namely that consumers in several African countries lacked sufficient access to non-cash payments and P2P transfers. Similarly, the success of Danske Bank comes from identifying a non-fulfilled need of Danish consumers: Danske Bank has in their advertising of Mobile Pay especially focused on payments within areas that are currently cash-dominated, such as flea markets and smaller payments between friends. This way, they are aiming to fill a gap that exists in the Danish payment market, which is otherwise characterized by very high penetration levels of digital payments, and has as a result been very successful.

In the majority of developed countries, and especially in Denmark, existing payment forms are already highly developed, and consequently the pain point is hard to find. In Denmark, it is possible to pay with both cash and card almost anywhere and the system is reliable and efficient; while most people agree that it appears smart to pay with a mobile phone, many say that it works just fine paying with card or cash (DIBS, 2013). For these reasons, IBM (2012) note that, "*new payment alternatives need to provide a persuasive value proposition that doesn't necessarily resolve a pain point, like in emerging markets, but creates a new type of value in the form of direct savings or significantly improved experiences*" (IBM, 2012:12).

1.3 Mobile Payment Value Added Services

As mentioned above, Accenture (2013) found that mobile payment providers need to offer a more compelling value proposition, for instance by offering additional services that add value. In telecom, the term "Value Added Services" explains services that add value beyond the core service, telephony. Thus, for traditional telephony, SMS and voicemail are Value Added Services. If we take this further to the case of mobile payments, mobile payments are the core service, and other services that can be offered in connection with this are considered VAS. Examples of these are digital loyalty cards and digital receipts (Accenture, 2013).

[7] These are non-proximity payments. They consist mainly of p2p transfer.

It is evident from the above that mobile payment providers need to offer a more compelling value proposition than merely the ability to pay with one's mobile phone, and that Value Added Services could offer this. However, the extent to which Value Added services affect this value proposition as well as in what sense is unknown.

1.4 Purpose

The purpose of this thesis is to investigate how Value Added Services affect consumer intention to adopt proximity mobile payments. This is done by measuring the change in consumer intention to adopt as a result of introducing Value Added Services to consumers. Additionally, the thesis aims to understand the underlying motivations behind this change, i.e. the factors that affect the intention to adopt. Thus, the thesis seeks to uncover factors that influence the decision making process of adopting proximity mobile payments and examine how Value Added Services affect this. In this way, an understanding of how Value Added Services affect consumer intention to adopt proximity mobile payments is developed.

1.5 Research Question

The following research question has been developed to guide this research:

How do Value Added Services affect consumer intention to adopt proximity mobile payments?

1.5.1 Terminology

Value Added Services (VAS): VAS are services that are offered in connection with mobile payments, but do not include the payment in itself. Essentially it can mean anything that relates to payments, but for this thesis it is only services that are used while or in connection with carrying out a payment. This and the specific VAS investigated in the research are elaborated upon in section 4.13.

Intention to Adopt: This is defined as "*the degree to which a person formulates conscious plans to perform or not perform some specified future behavior*" (Venkatesh and Davis, 2000), where "some specified behavior" refers to the adoption of mobile payment. This is a useful concept as empirical evidence underscores the idea that intention to adopt is an appropriate predictor or later usage (Venkatesh and Davis, 2000; Sheppard et al., 1988).

Proximity mobile payments: In this thesis, mobile payments are defined as "payment for goods and services authorized, initiated, or realized with a mobile phone"[8]. Since the focus is on consumer intention to adopt, the scope is limited to B2C payments. Furthermore, as mentioned earlier, the focus in this thesis is on proximity payments, defined as "*in-store or location-based payments with a smartphone to a point of sale*" (Forrester, 2012).

1.6 Findings

To address the research question, six hypotheses are developed. The data shows support for five of these. Overall, the findings show that Value Added Services positively affect the intention to adopt proximity mobile payments, and that this effect is manifested in the increase of Perceived Usefulness, Compatibility, and Convenience.

1.7 Delimitations

The following delimitations apply to the research scope of the thesis:

Firstly, mobile devices may include mobile phones, PDAs, wireless tablets and any other device that connects to a mobile telecommunication network and make it possible for payments to be made (Karnouskos and Fokus, 2004). In this thesis, the focus will be on payments initiated with mobile phones (smartphones) and consequently, the discussion will be limited to this.

Secondly, mobile payments can be broadly defined but is in this thesis restricted to proximity payments.

Thirdly, payments fall broadly into two categories: payments for purchase and payments of bills/invoices (Karnouskos & Fokus, 2004). The focus of this thesis is on payments for purchase and thus delimits itself to this category;

Fourthly, while proximity payments arguably have several user groups, the focus of this thesis will be on end-users (consumers);

Fifthly, much discussion in relation to mobile payments is around security and consumers' perception of this. This relates both to trust in the payments service provider and to trust that the system will not fail. However very interesting and relevant, this issue will not be

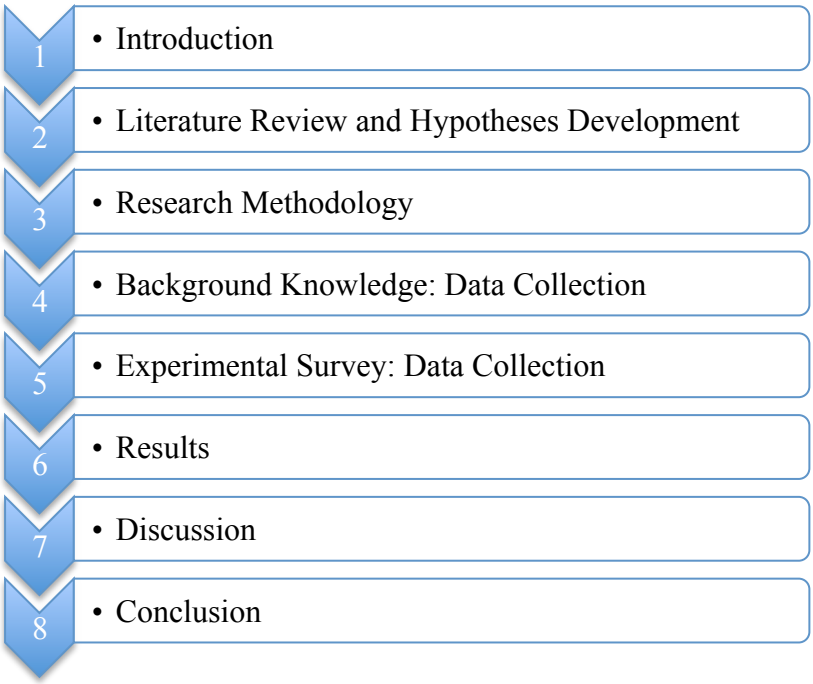
[8] This definition is adapted from Schierz et al (2010) who define mobile payments as "payment for goods and services authorized, initiated, or realized with a mobile device". For the purpose of this thesis, with the focus on proximity payments, the definition has been narrowed down to include only mobile phones (smartphones).

considered in this thesis. It is in the research process assumed that consumers have no issues with security.

Sixthly, the focus of this research is on Danish consumers.

1.8 Thesis Structure

This section describes each chapter in order for the reader to gain a quick insight into the overall structure of the thesis. The thesis is structured as follows:



The first chapter seeks to provide the reader with an understanding of the purpose and research area of this thesis. This is done by introducing the reader to the problem area, which leads to a research question.

The second chapter presents two literature reviews; one about mobile payment adoption and another about the role of Value Added Services. From this, a set of hypotheses is formulated about how Value Added Services will affect consumer intention to adopt mobile payments. This chapter also introduces the reader to the research model.

Chapter three presents the research methodology, and discusses research approach, data collection process, and the research design. The overall design of the thesis is experimental, but in order to design the survey that makes up the experimental design, solid background knowledge is required. This is obtained through additional data collection methods. These additional methods consist of a mini-survey for selecting Value Added Services, and a focus

group for understanding consumer perception of mobile payments and Value Added Services. The focus group thus supplements the literature review. The findings from these two methods are combined with the literature review to form the background knowledge required to design the experimental survey. Hence, the first step of the research process has been to obtain background knowledge (literature review, pre-survey and focus group), and the second step has been to collect data that answers the research question (experimental survey). Following this, the population and sampling methods are explained, and a couple of limitations discussed.

Chapter four presents the first step of the primary data collection: The pre-survey and the focus group. The methods for each of these two data collection techniques are presented, followed by the respective findings. This chapter is separated from the experimental survey data collection chapter as the findings from the pre-survey and the focus group are not used directly in the answering of the research question.

Chapter five presents the experimental survey and describes the data collected. The chapter first presents the full survey along with considerations about the survey. Then the findings about demography and payment habits of the control group and the experimental group are compared on to show that there is adequate internal validity. Finally, the data from the mobile payment related questions is presented. This data is the focal point of the thesis, as it is what will be used to validate the hypotheses and thus answer the research question.

Chapter six presents the results from the experimental survey and addresses the hypotheses established in chapter two.

Chapter seven discusses the findings of the thesis in relation to existing literature.

Chapter eight concludes on the findings of the thesis and answers the research question.

2 Literature Review and Hypotheses

Literature Review • Synthesis of Literature Review and Hypothesis Development • Research Model • Academic Relevance of Thesis Topic • Sub Conclusion

This chapter consists of a literature review and hypotheses development.

The first section presents the literature review, which consists of two separate reviews; one about mobile payment adoption and another about Value Added Services (VAS). The purpose is to find out what is already known about these two areas, in order to synthesize the findings and develop a set of hypotheses about the role of VAS on adoption of mobile payments.

On the basis of this literature review, the second section develops the hypotheses that will be addressed throughout the thesis in order to answer the given research question.

The third section introduced the research model applied in the thesis.

This is then followed by a discussion of the academic relevance of the thesis topic.

2.1 Literature Review

Emerald Management Insight, EBSCOhost, and Google Scholar were used by searching for keywords and combinations (a search criteria of scholarly works/peer reviewed journals was set). The keywords used to find literature are presented in tables along with the number of search hits in which the keywords resulted. This gives an idea of the amount of research that has been done within that field.

Although the focus in this thesis is on proximity payments, mobile payment in general is used in this literature review, meaning it may include other mobile payment solutions. Although it would be ideal to find literature only considering proximity payments, the amount of literature focusing only on proximity payments is limited (see Table 1). And even though the location of purchase may differ, the item of payment is still a mobile phone and therefore very similar in this aspect. Additionally, the models applied in the research are general models of technology adoption and therefore not restricted to mobile payments. Consequently, it is not perceived as an obstacle that the literature reviewed uses a broader definition of mobile payments than this thesis.

2.1.1 Mobile Payment Adoption

The purpose of this first literature review is to find out what is already known about mobile payment adoption, in terms of consumers' use or intention to adopt.

The below keywords were used to find relevant literature.

Search item	Emerald; hits	EBSCOhost; hits	Google Scholar; hits
"Mobile payment"	19	1,244	10,900
"Mobile payment adoption"	5	23	209
"Mobile payment acceptance"	2	9	71
"Technology adoption"	770	9,172	92,400
"Mobile commerce adoption"	15	61	288
"Proximity mobile payment adoption"	None	None	None

Table 1 - Search keywords, mobile payment adoption

The suggested articles were skimmed according to the following criteria: 1) As the possibilities and environment for mobile payments have changed dramatically after the introduction of smartphones, only literature that dates after the launch of the first smartphone (iPhone in 2007) will be used. 2) Additionally, as discussed in the introduction, the value proposition of mobile payments for developed countries is different from the value proposition in developing countries, and therefore literature that does not target developed countries will be excluded.

The above search criteria and a general criterion of relevance, resulted in 12 articles and journals that were scrutinized in order to understand factors that affect consumer intention to adopt mobile payments.

Table 2 shows a literature matrix summary of these key references.

Table 2 - Reviewed literature, mobile payment adoption

Author	Purpose	Theory*	Data	Limitations
Chen (2008)	To propose a research model that examines the parameters which determine consumer acceptance of m-payment	TAM/IDT	Survey (n=299)	Focuses on US university students and professionals (limits applicability to general public)
Dahlberg (2007)	To find out if the generic technology adoption models are sufficient to explain parameters consumers consider when they decide whether or not to adopt new payment services	TAM	Survey (n=976)	Not longitudinal Only Finnish consumers (but arguably close to Danes, so not problem)

Keramati et al. (2012)	To investigate customers' adoption of mobile payment services	TAM/IDT	Survey (n=623)	Focuses on Iranian consumers
Kim et al. (2010)	To empirically assess the determinants of the intention to adopt m-payment.	TAM	Survey (n=269)	No user classification. Actual technology usage behavior no incorporated in data collection (research tested for early vs late adopter)
López-Nicolás et al. (2008)	To investigate consumers motivation for adoption of mobile payment service	TAM/IDT	Survey (n=542)	Used a mobile payment design that looked like an internet page (whereas it is likely to look different in an app)
Lu (2011)	To develop a trust-based customer decision-making model of the non-independent, third-party mobile payment services context	IDT	Survey (n=960)	Chinese consumers
Mallat (2007)	To explore consumer adoption of mobile payments by empirically detecting the adoption determinants that are relevant for the new mobile payment context	IDT	Focus group interviews	Only exploratory, difficult to draw generalizations
Pousttchi et al. (2008)	Introduce a consumer acceptance model that addresses perceived usefulness, perceived ease of use, subjective security, and task-technology fit	TAM	Survey & experiment both online (n=1104)	Focused on only two use cases
Schierz et al. (2009)	Test factors determining consumers' acceptance of mobile payment services	TAM + individual mobility	Survey (n=1447)	Only considered German sample (but arguably close to Danes, so not problem)
Shin (2009)	To validate a comprehensive model of consumer acceptance in the context of mobile payment	UTAUT	Survey (n=296)	Focused on mobile wallets, not payments Only US consumers
Viehland et al. (2007)	To examine factors that have effect on consumer willingness to use mobile payment services	TAM	Survey (n=132)	Defined mobile payment as pSMS, Low sample size
Yang et al. (2011)	To identify the determinants of pre-adoption of mobile payment services and explore the temporal evolution of these determinants across the pre-adoption and post-adoption stages from a holistic perspective including behavioral beliefs, social influences, and personal traits.	UTAUT	Survey (n=639)	Chinese consumers

**TAM= Technology Acceptance Model; IDT= Innovation Diffusion Theory; UTAUT= Unified Theory of Acceptance and Use of Technology*

The two theories mainly used for researching mobile payment adoption are the Technology Acceptance Model (TAM) by Davis et al. (1989) and the Innovation Diffusion Theory (IDT) by Rogers (2003, originally proposed in 1962). Two of the articles applied UTAUT, which is a construct of various behavioral models, including TAM and IDT. All theories propose parameters that affect consumers' intention to adopt mobile payments. While they have different foci, some of the factors overlap, which is also mentioned in a few papers (Keramati et al., 2012). "Ease of Use" (TAM) and "Complexity" (IDT) are often considered similar, and "Perceived Usefulness" (TAM) and "Relative Advantage" (IDT) appear to focus on the same.

While TAM and IDT guide the research papers, many of the authors have added additional constructs that are relevant to mobile payments. Examples are security, cost, and trust (in payment service provider).

Constructs of both theories have proven to affect mobile payment adoption. Table 3 summarizes the factors investigated and shown to affect mobile payment adoption.

Table 3 - Researched parameters that affect mobile payments

Parameter	Author
Compatibility	Kim et al. (2010); Schierz et al (2009); Dahlberg (2007); Mallat (2007); Yang et al (2011); Keramati et al. (2012); Chen (2008)
Complexity	Mallet (2007)
Convenience	Kim et al. (2010); Keramati et al. (2012); Chen (2008); Viehland et al. (2007); Dahlberg (2007)
Mobility	Kim et al. (2010); Schierz et al (2009)
Mpay Knowledge	Kim et al. (2010)
Perceived Ease of Use	Pousttchi et al. (2008),; Schierz et al (2009); Dahlberg (2007); Shin (2009); Keramati et al. (2012); Chen (2008); Viehland et al. (2007)
Perceived Risk	Mallet (2007); Yang et al. (2011); Chen (2008)
Personal Innovativeness	Kim et al. (2010); Yang et al (2011); Viehland et al. (2007)
Perceived Usefulness	Dahlberg (2007); Pousttchi et al. (2008); Schierz et al (2009); Shin (2009); Keramati et al. (2012); Chen (2008); Yang et al. (2011)
Reachability	Kim et al. (2010)
Relative Advantage	Mallat (2007); Chen (2008); Lu (2011)
Security	Dahlberg (2007); Keramati et al. (2012); Pousttchi et al. (2008); Shin (2009); Chen (2008)
Subjective Norm	Schierz et al (2009); Dahlberg (2007); Shin (2009); Yang et al. (2011)
Task technology fit	Pousttchi et al. (2008)
Trustworthiness	Dahlberg (2007); Shin (2009); Keramati et al. (2012)

As seen in Table 3, some parameters appear to be considered more influential on consumers' adoption of mobile payments. As there are limits to the amount of parameters that can be investigated in this thesis, the four parameters that appear most often in the literature are applied. These four are Perceived Usefulness, Perceived Ease of Use, Compatibility, and Convenience. These are discussed below.

2.1.1.1 Perceived Usefulness (Relative Advantage)

Perceived Usefulness is a parameter in the TAM and is defined as "*the degree to which a person believes that using a particular system would enhance his or her job performance*" (Davis et al., 1989:320). The term "job performance" reflects Davis' focus on technology adoption in an organizational context. Some researchers argue that the organizational context is a flaw in Davis' theory in terms of applying it to consumer technologies (Keramati et al., 2012; Yang et al., 2011), whereas others deem it applicable in a non-organizational context (Schierz et al., 2009; Dahlberg, 2007; Chen, 2008). In spite of this critique, Perceived Usefulness has proven to be relevant when studying consumer adoption of mobile payment. The research highlighted in this section investigated aspects about Perceived Usefulness that target the private consumer and his or her daily life, and in this context Perceived Usefulness showed an effect.

Perceived Usefulness has been researched in two ways: 1) Consumers' Perceived Usefulness of mobile payments in itself, measured by asking them direct questions regarding this, and 2) other parameters' affect on Perceived Usefulness, asking them how these parameters affect the Perceived Usefulness of mobile payments. For instance, Poutsttchi et al. (2007) found that a better task-technology fit caused a significant increase in Perceived Usefulness, and Chen (2008) found that transaction convenience and transaction speed influenced Perceived Usefulness.

While most research shows a positive correlation between Perceived Usefulness and Intention to Adopt mobile payments, Schierz et al. (2009) find that Perceived Usefulness by itself does not score very high, but that exogenous variables, such as Compatibility and Individual Mobility have an effect on Perceived Usefulness, which then in turn affects Intention to Adopt mobile payments. This is interesting for this thesis, as it shows that consumers do not necessarily see mobile payments in itself as being useful, but that it is the extra constructs that add value.

While not exactly the same, Perceived Usefulness can for this purpose be compared to Relative Advantage (from the IDT), which is defined as "*the degree to which an innovation is perceived as better than the idea it supersedes*" (Rogers, 2003:14). Therefore, they will henceforth be combined under one terminology, Perceived Usefulness, due to their great similarity in definition. This comparison has been drawn by several authors (Davis et al., 1989; Moore and Benbasat, 1991; Plouffe et al., 2001), and has even been combined into a parameter in a new model, UTAUT (Venkatesh et al., 2003), called Performance Expectancy.

Chen (2008) found that Relative Advantages over other means of payment are important to consumers and should a company fail to demonstrate these advantages to potential users, the new system is likely to experience a low rate of adoption.

As this thesis focuses on consumers, not employees, the focus will not be on "gains attained in job performance" but simply gains attained in payment and payment related activities. Consequently, the following definition is applied in this thesis: *"The degree to which a person believes that using mobile payment would enhance his or her performance in payment related tasks*".

Perceived Usefulness has proven to have a significant effect on the Intention to Adopt mobile payments by several authors (Dahlberg, 2007; Pousttchi et al., 2008; Schierz et al., 2009; Shin, 2009; Keramati et al., 2012; Chen, 2008; Yang et al., 2011).

The literature thus leads to the following proposition:

Perceived Usefulness positively affects the Intention to Adopt mobile payment

2.1.1.2 Perceived Ease of Use (Complexity)

Perceived Ease of Use is the second parameter in the TAM and is defined as "*the degree to which a person believes that using a particular system would be free of effort*" (Davis, 1989:320). Thus, it measures the perceived ease of using the technology.

While Perceived Ease of Use has been investigated by many researchers, it is usually shown to only have a somewhat small effect on Intention to Adopt mobile payments. For instance, Schierz et al. (2009) found that Perceived Ease of Use has a relatively small effect on Intention to Adopt mobile payments when compared to other parameters such as Compatibility. There is, however, research that disagrees: Dahlberg and Mallat (2002) found Ease of Use to be the most important aspect of mobile payments.

Perceived Ease of Use has been found to affect Perceived Usefulness. Pousttchi et al. (2008) found "*a significant positive influence of perceived ease of use on perceived usefulness, implying that those who consider mobile payment to be easy to use also perceive it to be more useful*" (Pousttchi et al., 2008:12). This is supported by Schierz et al. (2009) who find that Perceived Ease of Use affects Perceived Usefulness.

In a similar manner, there are parameters that affect Perceived Ease of Use. For instance, Mallat (2007) found that whether consumers characterize themselves as Early Adopters or Late Adopters, has a significant impact on their Perceived Ease of Use.

Similar to the above comparison of Perceived Usefulness and Relative Advantage, Perceived Ease of Use (Davis, 1989) and Complexity (Rogers, 2003) can be compared (Davis et al. 1989; Moore and Benbasat, 1991; Plouffe et al., 2001; Thompson et al., 1991) and has also been combined into one construct in the UTAUT model: Effort Expectancy (Venkatesh et al., 2003), which is defined as "*the degree of ease associated with the use of the system*" (Venkatesh et al., 2003:450).

It is important to note that complexity *decreases* the Intention to Adopt a technology (Rogers, 2003) whereas Perceived Ease of Use *increases* the Intention to Adopt a technology (Davis, 1989). For this reason, it is easier to combine the two constructs into one. Therefore, Perceived Ease of Use and Complexity will henceforth be combined under the construct Perceived Ease of Use. The definition used in connection with mobile payments is "*the degree to which a person believes that using mobile payment would be free of effort*".

Perceived Ease of Use has proven to have a significant effect on the Intention to Adopt mobile payments by several authors (Dahlberg, 2007; Pousttchi et al., 2008; Schierz et al., 2009; Shin, 2009; Keramati et al., 2012; Chen, 2008; Viehland et al., 2011).

The literature thus leads to the following proposition:

Perceived Ease of Use positively affects the intention to adopt mobile payment

2.1.1.3 Compatibility

Compatibility is a parameter in the IDT and is defined as "*the degree to which an innovation is perceived as consistent with the existing values, past experiences, and needs of potential adopters*" (Rogers, 2003: 15).

When looking at compatibility's effect on intention to adopt mobile payments, it is found to be highly significant. In fact, in a number of studies, it was found to be the most significant factor of all the factors studied (Chen, 2008; Schierz et al., 2009; Yang et al., 2011; Dahlberg, 2007). Mallat (2007) find that mobile payment are advantageous because: "*people carry mobile phones with them most of the time and the phone is therefore conveniently available in most situations*" (Mallat, 2007;421). Additionally, Dahlberg (2007) write that, "*with mobile payments, Finnish consumers seem to require compatibility to their current payment habits*" (Dahlberg, 2007:2). Furthermore, Schierz et al. (2009) write: "*We find that perceived compatibility has the greatest impact on the intention to adopt mobile payment services*." (Schierz et al., 2009:215).

Schierz (2009) go on to describe another parameter investigated in their research: Individual's mobility (Schierz et al., 2009). While this and Compatibility are considered separate in Schierz et al.'s research paper, it can be argued that as society becomes more and more mobile, consumers want items that fit this mobile lifestyle, i.e. that are compatible with it.

Combining Rogers' definition of compatibility with this thesis' topic of mobile payments, we get the definition: "*the degree to which mobile payment is perceived as consistent with the existing values, past experiences, and needs of potential adopters*".

The literature on compatibility thus leads to the following proposition:

Compatibility positively affects the intention to adopt mobile payment

2.1.1.4 Convenience

Convenience is neither part of TAM nor IDT, but is frequently mentioned in mobile payment adoption literature and has been identified as one of the most important parameters in the success of mobile commerce (Kim et al., 2010). Convenience is related to the "*elements generating time and place utility for users*" (Kim et al., 2010:314), which are clearly important characteristics of mobile payment. In support of this, Hedman et al. (2013), who defines convenience as "*the time and effort consumers spend on obtaining the service*" (Hedman et al., 2013), found that service convenience was an important parameter in consumer decision-making regarding the choice between cash and credit card use. As mobile payment is not just a new technology but also a new payment instrument, convenience is highly likely to be an

important parameter in consumers' decision to choose mobile payment over traditional payment instruments. In support of this, Ching and Hayashi (2008) find that "*overall, Comfortable and Convenient seem to be the most crucial perception variables that influence consumer payment choices*" (Ching and Hayashi's 2008:21).

While convenience usually includes the degree of ubiquity of a payment method (Berry, 2002), this aspect will be excluded in this thesis as proximity payments in Denmark has not yet been rolled out. The "place" aspect of Kim et al.'s (2010) definition offer a similar perspective and will also be left out. Finally, as transaction time in itself if difficult to evaluate as the service does not yet exist in Denmark (and is already measured in Perceived Usefulness), Convenience in this thesis will measure the effort spent obtaining the payment service. Thus, building on Hedman's (2012) definition, the definition used in this thesis will be "*the effort consumers spend on obtaining the payment service*".

The definitions of Perceived Ease of Use and Convenience appear somewhat similar, but it is important to note that they measure very different things. Perceived Ease of Use refers to the easiness of using the system itself, i.e. on an application level, whereas Convenience refers to the increased easiness in everyday life by using the system, i.e. everyday tasks that are made easier.

While Dahlberg (2007), Kim et al. (2010), and Keramati et al. (2012) investigate convenience's influence on behavioral intention to adopt mobile payments, Chen (2008) and Kim et al. (2010) investigate its influence on Perceived Usefulness and Perceived Ease of Use (the latter is only investigated by Kim et al. (2010)). However, in this thesis, Convenience will only be viewed from a perspective of its direct effect on intention to adopt.

The literature thus leads to the following proposition:

Convenience positively affects the intention to adopt mobile payment

2.1.1.5 Summary

The four parameters that are found to have the biggest effect on mobile payment adoption are Perceived Usefulness, Perceived Ease of Use, Compatibility, and Convenience[9]. From the literature, the following propositions follow:

[9] Security is also an important factor, but as discussed in the introduction it appears not to be a great inhibitor for Danish consumers. This was later confirmed in the focus group, in which the respondents said that they knew the laws

1. Perceived Usefulness positively affects consumers' intention to adopt
2. Perceived Ease of Use positively affects consumers' intention to adopt
3. Compatibility positively affects consumers' intention to adopt
4. Convenience positively affects consumers' intention to adopt

2.1.1.6 Definitions of Parameters

Construct	Definition
Perceived Usefulness	The degree to which a person believes that using a particular system would enhance his or her performance in payment related tasks
Perceived Ease of Use	The degree to which a person believes that using mobile payment would be free of effort
Compatibility	The degree to which mobile payment is perceived as consistent with the existing values, past experiences, and needs of potential adopters
Convenience	The effort consumers spend on obtaining the payment service

Table 4 - Definitions of four parameters

2.1.1.7 Limitations

Nearly all the literature that exists on mobile payment use/adoption is based on TAM or IDT. While these theories have been proven applicable to research of this topic, it appears to be a somewhat limited approach.

Additionally, some of the parameters in IDT have received none or little support in explaining mobile payment use, and as such the model only partly explains consumer attitude, which further suggests that there may be other parameters not included in IDT or TAM that affect consumer attitudes.

Furthermore, most of the literature has focused on mobile payments as a technology and not as a tool for payment.

Finally, for this literature review, some of the parameters were used together as similar parameters. While the argument for this is well supported, it may be that there are some slight differences.

2.1.2 The Role of Value Added Services

The purpose of this second literature review is to find out what research has already been carried out on the concept of Value Added Services.

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around financial services in Denmark are extremely tight and they therefore do not fear for the security surrounding a new payment instrument.

As Value Added Services originally is a term used in telecom and relates to the extra services added to the basic service of telephony, it is necessary to consider the concept from a more traditional management discipline. From service economics and marketing, the term "core products and supplementary services" has developed. A core product is " *the central component that supplies the principal, problem-solving benefits customers seek*", and supplementary services "*augment the core product, both facilitating its use and enhancing its value and appeal*" (Lovelock, 2007:70).

In connection to this thesis, the core service is the mobile payment, and the supplementary services are the VAS. Hence, this thesis looks at the role of supplementary services in consumers' intention to adopt a core service. It is therefore interesting to look into what is already known about the role of supplementary service and the effect it has on consumer behavior, which is the purpose of this literature review.

"Supplementary" services are also called "complementary" services or "peripheral" services (Goyal, 2004), so each search was run three times, each time using either rof the three terminologies.

Table 5 shows the keywords used to find relevant literature and the outcomes.

Search item	Emerald; hits	EbscoHost; hits	Google Scholar; hits
"Core services" "supplementary services"	4	17	254
"Supplementary services" "role"	2 / 2 / 0	5 / 15 /1	5,510 / 8,620 / 1,360
"Supplementary services" "effect"	1 / 5 / 0	1 / 11 / 1	4,670 / 7,290 / 1,130

Table 5 – Search keywords, Value Added Services

The suggested articles were skimmed in order to find relevant material to answer the three areas of interest stated above.

The research area is very limited, and only resulted in 8 articles and journals that were of some interest. These were scrutinized in order to understand the role of supplementary services. The articles and their theoretical assumptions and data sources are listed in Table 6 below.

Author	Purpose	Theory	Data	Limitations
Ahn et al., (2011)	To analyze and distinguish the potential prospects of VAS. To suggest an integrated scoring model for prospect prediction for VAS (melody bells)	CRM	Survey (#=3080)	The study was conducted while mobile VAS was still considered an emerging market, so the pool of service users was smaller than anticipated. Based on South Korean consumers whom are likely to have different behaviors than Danish consumers
Bhattacharyya et al., (2011)	To explain the proposition that just providing VAS is not sufficient to create and internalize value	Value net	Secondary data analyzed	Focuses on strategies of Indian MNOs.
Chen (2008)	To propose a theoretical framework as a foundation for better understanding and further analyzing the adoption of ONSs	IDT/TAM Uses and Gratificati on Theory	Interviews	Consumption of an e-portal
Ching and Hayashi (2008)	To estimate the direct effects of rewards card programs on consumer payment choice for in-store transactions.	Two-sided market theory	Survey	American consumers
Goyal (2004)	To study the role of supplementary services in the purchase of credit card services in India	Perceived service quality	Survey (#=720)	Indian consumers, different culture and economy
Goyal (2007)	To examine whether the supplementary services are helpful in controlling the functional risk and psychological risk perceived to be associated with credit cards	Perceived risk	Survey (#=720)	Indian consumers, different culture and economy
Gwinner (2008)	To investigate determinants of customer loyalty	n/a	Focus group interviews	Initial exploratory research, need for further testing
Naipaul (2013)	To investigate the difference in overall consumer evaluation of a convention site with supplementary services and without supplementary services.	Flower of Services (Lovelock 2007)	Survey (#=86)	Group demographics (not tested for similarities – no internal validity) Very small sample
Van Riel et al., (2001)	To study the effects of core and supplementary services on customer satisfaction	e-service e-service quality	Survey (#=52) Interviews	Studies the post-consumption effect – this thesis looks at pre-evaluation Very small sample

Table 6 - Reviewed literature, VAS

The approach to this second literature review is somewhat different than the previous literature review. While the purpose in the first literature review was to find specific

parameters that affect intention to adopt mobile payment, the purpose of this literature review is to understand the role of VAS. This means that, while for the first literature review the specific findings were fairly comparable and simple to list as the majority applied the same two theories and the research tended to be deductive, the literature in this review is very differentiated and the theory scattered. Therefore, rather than identifying the most important parameters affecting adoption behavior like in the first literature review, this review seeks to understand 1) why supplementary services exist, 2) what effect they have, and 3) what kind of supplementary services exist. These three are discussed in turn in the sections below.

2.1.2.1 Why Supplementary Services?

The literature proposes two reasons for attaching supplementary services to a core product: 1) To increase the perceived value of the core product (van Riel et al., 2001), and, 2) to make up for low or declining revenue from core product sales (Ahn et al., 2011; Goyal, 2007). While cost/pricing of mobile payment is outside this thesis' scope, the latter is highly relevant as payment fees in Denmark currently are not imposed on consumers (unless paying with a credit card), which means that mobile payment providers most likely will not impose payment fees on consumers, as this will make them less competitive (when a 0.50DKK fee was imposed on Dankort payments in 2005, it resulted in a great decline of Dankort payments (Nationalbanken, 2007)). Therefore, mobile payment providers are likely to find ways to gain revenue, other than from the payment itself. Supplementary services could do this.

An important aspect is the fact that consumers have come to expect high core product quality and to take this high quality largely for granted (Gwinner et al., 1998). Therefore, supplementary services will be an important driver in adding value to the product (Gwinner et al., 1998; van Riel et al., 2001). Payments in Denmark are ubiquitous and nearly flawless (Nets, 2013; Nationalbanken, 2011), so functionality is an expectation, not a value adding item.

2.1.2.2 The Effect of Supplementary Services

Limited research has been done on the effect of supplementary services on adoption and consumer behavior (Goyal, 2007), but the research that exists shows that supplementary services are very important to both perceived quality and adoption of the core product (van Riel et al., 2001). In fact, Van Riel et al. (2001) found that supplementary services often had an

even stronger effect on perceived value than did the core product. Similarly, Goyal (2004) found that supplementary services are heavily relied upon when deciding on a credit card provider by the large majority of consumers.

Not only do supplementary services play a role in perceived value and adoption, they are also important in consumers' decision to continue using a core product. van Riel et al. (2001), found that the added value of supplementary services could be an important driver of intentions to continue using the core product. Additionally, Goyal (2004) found that the offered peripheral services played a great parameter in credit card consumers' post-evaluation of the core product. Finally, Naipaul (2007) concluded that consumers who were offered supplementary services perceived the product and the company selling the product, as offering higher value than those who did not offer supplementary services.

2.1.2.3 What Kind of Supplementary Services?

The added value of a supplementary service will depend not only on its individual quality, but also on the degree of fit with the core product offering (van Riel et al., 2001). Hence, it is important to offer supplementary services that not only are useful but also are in line with the core product. The same author also found that when supplementary services are not customized to the target consumer segment, their added value can be limited (van Riel et al., 2001). This is seen through the mass customization we see today, in which consumers buy a standardized product, which they can then customize themselves (an example is the smartphone that is customized with apps and system setup). Thus, it is important not just to provide all supplementary services to all consumers but to allow them to choose which services they wish to use.

2.1.2.4 Summary

To summarize, the main findings from this literature are the following:

- Supplementary services affect consumers' perceived value of the core service
- Supplementary services affect consumers' intention to adopt
- Supplementary services affect consumers' intention to continue using the core service
- Supplementary services affect consumers' post-evaluation of the core service
- The supplementary services must fit with the core service
- The ability to customize bundle is important for perceived quality

As the focus of this thesis is on the intention to adopt mobile payment, and thus on pre-consumption behavior, supplementary services' effect on intention to continue using the core service and its role in post-evaluation is not included. Likewise, the fit with the core service and consumers' ability to customize bundled services appear more to be a factor than an effect, so this is not included either. This leaves us with two propositions:

Supplementary services affect the perceived value of a core service

Supplementary services affect the intention to adopt a core service

2.1.2.5 Limitations

Peripheral services differ immensely across business areas and product categories, and as such it is difficult to generalize their effect. Even within these categories and areas, there are huge differences; in telecommunications supplementary are usually introduced to make up for declining profits of the core service (telephony) and to increase perceived value due to a stagnated market, but the market for mobile payments has hardly begun to develop, and therefore the reasons are likely to be different. Whether the effect is different is difficult to say, as little or no research has been conducted in this area as of yet.

2.2 Synthesis of Literature Reviews and Hypotheses Development

In order to answer the given research question, "*How do Value Added Services affect consumer intention to adopt proximity mobile payments?*", a set of hypotheses addressing this problem area are formulated in this section.

The literature review has resulted in a set of propositions that are studied in order to answer the research question. The first proposition is that supplementary services (in this thesis referred to as Value Added Services) affect the perceived value and the intention to adopt the core service (referred to as mobile payments). Thus, this is the proposition that sets the foundation for the thesis:

Value Added Services will positively affect
the perceived value of and the intention to adopt mobile payments

From the above proposition, two hypotheses can be established: One about VAS' effect on Intention to Adopt mobile payments, and another about VAS' effect on Perceived Value of mobile payments. These two will be discussed in turn in the following sections.

2.2.1 Intention to Adopt Mobile Payments

The relationship between VAS and Intention to Adopt is stated directly in the literature review findings and can therefore be introduced as a hypothesis:

Hypothesis 1:

Value Added Services will positively affect consumer Intention to Adopt mobile payment

Thus, this hypothesis directly addresses the research question by investigating VAS' effect on consumer Intention to Adopt.

2.2.2 Perceived Value: Attitude Towards Use and the Four Parameters

Davis et al. (1989) propose an item, "Attitude Towards Use", which is defined as "*the degree of evaluative effect that an individual associates with using the target system*" (Davis et al., 1989:477). This is a function of Perceived Usefulness and Perceived Ease of Use, and affects Intention to Adopt. This item can be compared to Perceived Value.

"Perceived value" is defined as "*the anticipated benefit from a consumer's perspective of a product or service*" (businessdictionary.com). "Evaluative effect" refers to the effect expected of using the system by an individual, which is comparable to the "anticipated benefit". Therefore, for the purpose of this thesis these two can be used interchangeably. Thus,

Perceived Value = Attitude Toward Use

For simplicity and according to already used literature, the term Attitude Towards Use will be adopted.

Whereas Perceived Usefulness and Perceived Ease of Use are originally proposed as functions of Attitude Towards Use (Davis et al., 1989), Compatibility and Convenience are not part of the original TAM. However, a relationship between these two parameters and the Attitude Towards Use has been drawn in other literature: Schierz et al. (2009) and Yang et al. (2011) show that Compatibility affects the Attitude Towards Use, and Chen (2008) and Kim et al. (2010) both show that Convenience affects Attitude Towards Use[10]. So,

[10] Technically, Chen does not include Attention to Adopt but measures Convenience's direct effect on Intention to Adopt. However, as explained in the TAM (Davis et al., 1989), the model used by Chen (2008), Attitude Towards Use is a mediatior between the parameters and the Intention to Adopt.

Attitude Towards Use =

Perceived Usefulness + Perceived Ease of Use + Compatibility + Convenience

Therefore, the following hypothesis can be deduced from the above:

Hypothesis 2:

Value Added Services will positively affect the Attitude Towards Using mobile payment

Thus, this hypothesis addresses the parameters that lead to Intention to Adopt, and thus investigates the underlying motivations behind Intention to Adopt.

In order to investigate how VAS affect Attitude Towards Use, this following section develops hypotheses for the four parameters that make up Attitude Towards Using. Applying the literature review and combining it with hypothesis 2, four hypotheses are proposed, one for each parameter.

2.2.2.1 Perceived Usefulness

Perceived Usefulness measures "the degree to which a person believes that using a particular system would enhance his or her performance in payment related tasks". Existing literature measures this mainly according to easiness (Kim et al., 2010; Shierz et al., 2010; Chen, 2008) and speed/efficiency (Kim et al., 2010; Shierz et al., 2010; Chen, 2008; Lopez-Nicolàs et al., 2008; Pousttchi et al., 2008).

VAS are likely to increase the ease of payment as consumers are not required to spend time taking out physical VAS items as these will be embedded in the phone. Similarly, VAS consist of services that are designed to improve the payment experience and therefore the usefulness is likely to be perceived as higher with VAS. Finally, if consumers are not required to handle physical VAS items (whether loyalty cards, receipts, or the like), but this is automatized, the efficiency of the transaction is likely to be higher.

Mobile payment with VAS is therefore expected to be perceived as more useful than mobile payment by itself. Thus, the following hypothesis is formed:

Hypothesis 2a.

Value Added Services will positively affect the Perceived Usefulness of mobile payments

2.2.2.2 Perceived Ease of Use

Perceived Ease of Use measures an individual's perception about the extent to which using a system will be free from effort. This means that it appears difficult to learn how to use the system or it is unclear how one should interact with the system, Perceived Ease of Use will e reduced. As often perceived with technology, the more features a system offers the more complex it appears to be. As VAS essentially add more features to mobile payment it is likely that consumers will expect it to require more effort to use. This is described by Hayashi (2008): "*...mobile payments could be difficult for some consumers to set up and learn to use. Compared with traditional payment methods ... setting up mobile payments will require more steps ... Consumers will also need to devote time and effort to learning how to use the application*" (Hayashi, 2008:44).

Therefore, the following hypothesis is defined:

Hypothesis 2b.

Value Added Services will negatively affect the Perceived Ease of Use of mobile payments

Perceived Ease of Use is the only construct that is expected to decrease as a result of VAS. This expected decrease means that Perceived Ease of Use is expected to have a negative effect on Attitude Towards Use.

2.2.2.3 Compatibility

Compatibility measures the degree to which mobile payment is perceived as consistent with the existing values, past experiences, and needs of potential adopters. Thus, Compatibility refers to how well mobile payment fits with a person's lifestyle. Danish consumers' lifestyles are highly characterized by mobility, and new technologies constantly enter the market to make tasks easier. Therefore, as VAS are essentially digitalized services which make us more mobile and make tasks easier, the presence of VAS is expected to increase the Compatibility of mobile payment. Likewise, as 90% of us have our smartphone within an arm's reach 100% of the time (IBM, 2012), using the smartphone for payment related tasks is likely to be perceived as being compatible with a consumer's lifestyle. Finally, VAS are designed to make tasks easier and simpler, and Chen (2008) finds that, "*many believe profoundly in the benefits of technology,*

but only when technology is premised on the intention to make life easier for people and to ameliorate the difficulty of common tasks" (Kim, 2010:314).

Thus, the following hypothesis is defined:

Hypothesis 2c.

Value Added Services will positively affect the Compatibility of mobile payments

2.2.2.4 Convenience

Convenience measures "the effort consumers spend on obtaining the service". The majority of smartphone users keep their phones near them all the time (IBM, 2012) and it therefore appears to be a convenient tool for payment, as consumers do not have to first find their wallets. In terms of VAS, the digitalization of the services will make using them easier as they will be digitalized and therefore require no extra effort from the consumer.

Additionally, using mobile payment instead of traditional methods means that consumers physically are required to carry less items and don't always need to bring their wallets. Similar to the above argument, consumers do not need to carry around physical VAS items, and this is likely to increase the perceived value.

Consequently, the following hypothesis is made:

Hypothesis 2d.

Value Added Services will positively affect the Convenience of mobile payments

2.2.3 Relationship Between Intention to Adopt, Attitude Towards Use, and the Four Parameters – and how Value Added Services Affect this

Figure 2 illustrates the relationship between Perceived Usefulness, Perceived Ease of Use, Compatibility, Convenience, Attitude Towards Use, and Intention to Adopt. This relationship is essentially the Technology Acceptance Model (Davis et al., 1989) but with two added parameters, Compatibility and Convenience.

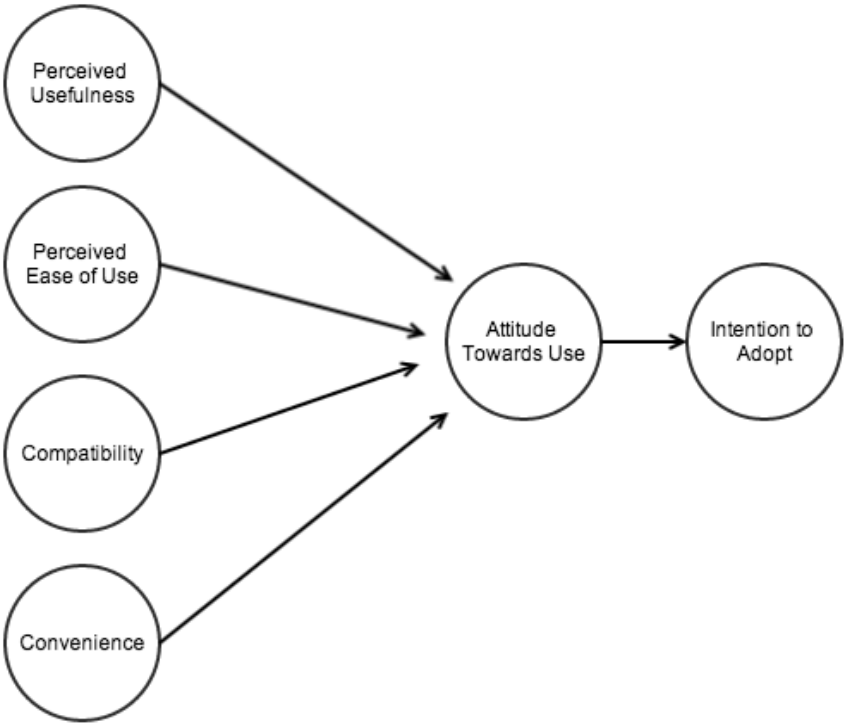


Figure 2 - Relationship between four parameters, Attitude Towards Use, and Intention to Adopt

As Figure 2 shows, the four parameters lead to Attitude Towards Use, which in turn leads to the Intention to Adopt. Several authors have already investigated this relationship. Therefore this thesis does not aim to further investigate this particular relationship but rather investigate how VAS affect the elements present in the above model.

As illustrated in Figure 2, Intention to Adopt is the result of the four parameters. Therefore, Value Added Services are expected to affect the Intention to Adopt through these four parameters. This expected effect is illustrated in Figure 3.

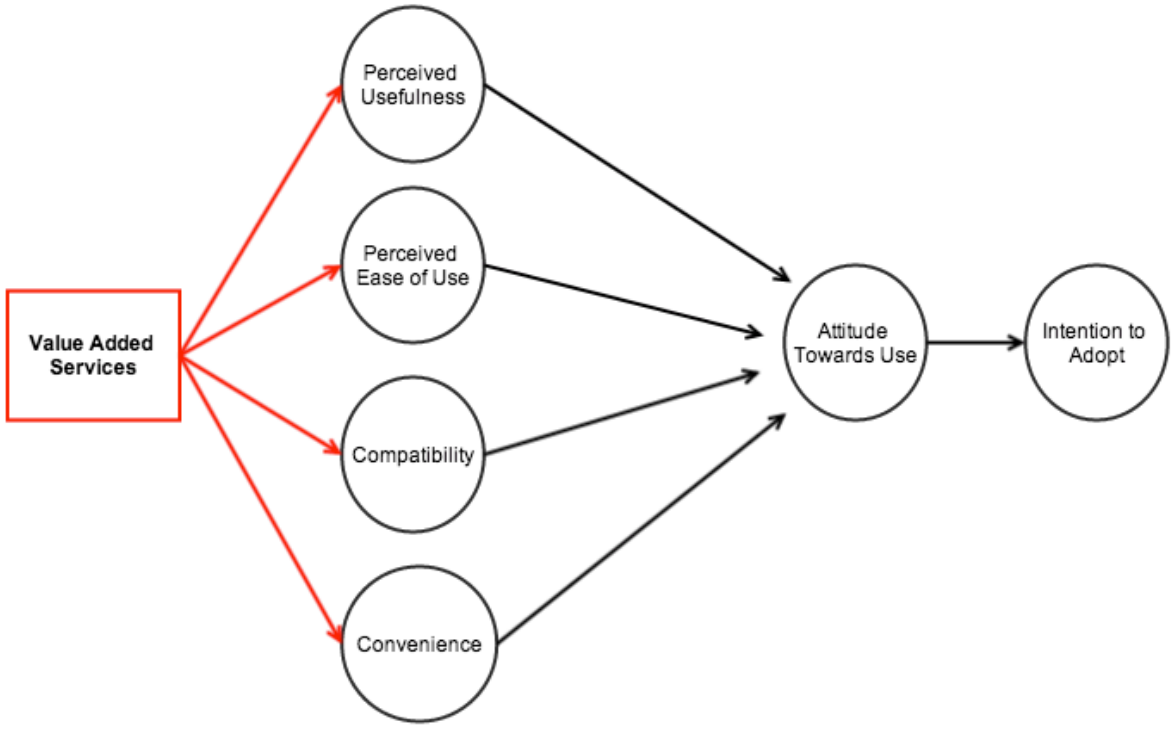


Figure 3 - Expected Effect of Value Added Services

2.3 Research Model

The first hypothesis, H1, addresses the research question directly by investigating the effect of Value Added Services on consumers' Intention to Adopt.

The second hypothesis, H2, addresses the underlying motivations of Intention to Adopt, and thus helps understand which parameters lead to the change of Intention to Adopt.

It is important to note that the hypotheses are interdependent: and the two groups of hypotheses are therefore not to be viewed as independent of each other. On the contrary, Intention to Adopt is the direct result of Attitude Towards Use.

The research model is illustrated in Figure 4.

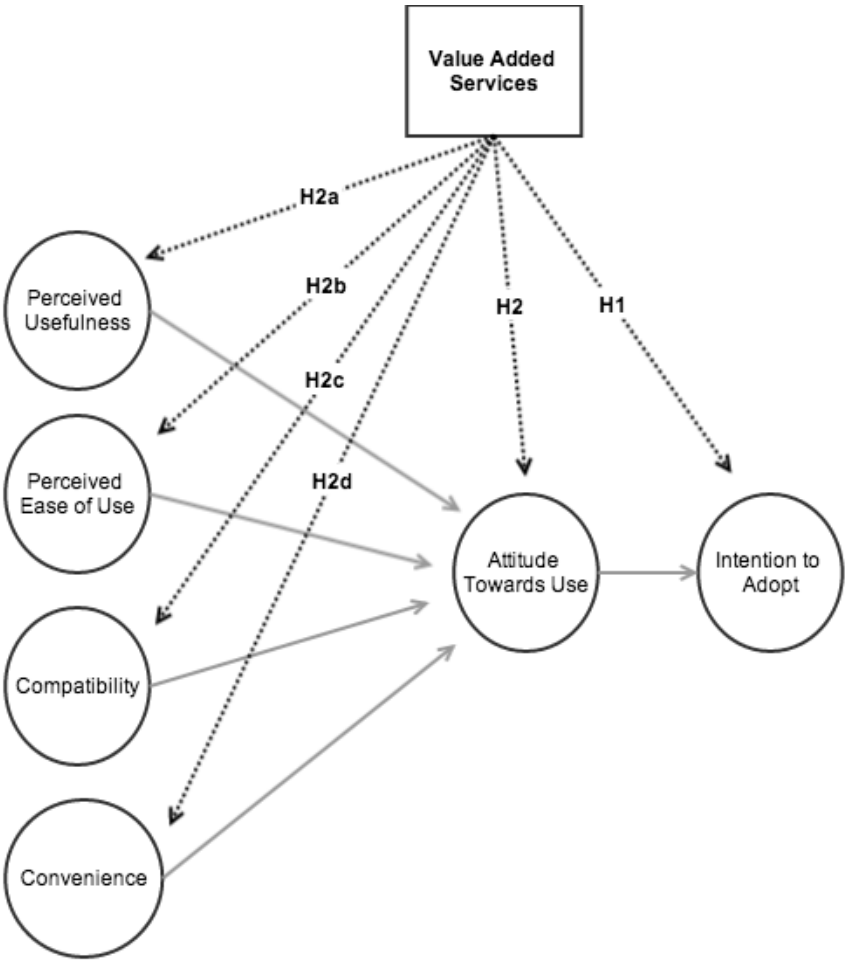


Figure 4 - Research Model

It is important to note that the effect of Value Added Services is not direct on Intention to Adopt or Attitude Towards Use, but rather indirectly through the four parameters, as illustrated in Figure 3. Hypotheses 1 and 2 thus refer to effects that are expected to happen as a result of expected effects on the four parameters, where H1 measures the Intention to Adopt and H2 investigates how the effect on Intention to Adopt is manifested.

2.4 Academic Relevance of Thesis Topic

As discussed from the given literature review, much research in the area of mobile payment adoption has been carried out. The majority applies the same theoretical framework: TAM and/or IDT to do so, but from different angles that shed light on consumers' intention to adopt mobile payments.

In regards to VAS of mobile payments, some research has been carried out on the role of supplementary services, but the number of studies looking at supplementary services of

mobile payments is extremely limited. Countless websites, blog posts, newspaper articles, and corporate white papers (mobilepaymentstoday.com, 2013; Accenture, 2013; IBM, 2011) discuss the importance and potential of VAS, but no academic research was found to have addressed this issue. Consequently, the author believes that a knowledge gap both in terms of academic and business research exists, and it is the closing of this gap to which this thesis seeks to contribute.

2.5 Sub Conclusion

This section has presented two literature reviews; one about mobile payment adoption, which resulted in the selection of four parameters that influence the intention to adopt mobile payment, and a second about the role of Value Added Services. Combining the findings has resulted in a set of hypotheses. The first hypothesis,

H1: Value Added Services will positively affect the intention to adopt mobile payments,

directly addresses the research question by investigating VAS' effect on consumer Intention to Adopt.

The second hypothesis,

H2: Value Added Services will positively affect the attitude towards using mobile payments.

addresses Attitude Towards Use, which leads to Intention to Adopt, and thus investigates the underlying motivations behind Intention to Adopt.

Attitude Towards Use is a construct of four parameters: Perceived Usefulness, Perceived Ease of Use, Compatibility, and Convenience, and will be measured accordingly. Therefore, four sub-hypotheses to Hypothesis 2 were made:

H2a: Value Added Services will positively affect the Perceived Usefulness of mobile payments

H2b: Value Added Services will negatively affect the Perceived Ease of Use of mobile payments

H2c: Value Added Services will positively affect the Compatibility of mobile payments

H2d: Value Added Services will positively affect the Convenience of mobile payments

Thus, the effect of Value Added Services on Attitude Towards Use is measured by investigating the effect of Value Added Services on the four parameters.

3 Research Methodology

Research Approach • Process • Methodological Plurality • Research Design • Reliability and Validity • Population of the Study • Limitations • Sub Conclusion

This section explains the framework for the research.

The first section describes the overall research approach. This is followed by a description of data collection process, which is also illustrated in Figure 5. Section three discusses the methodological plurality of the thesis, i.e. the use of several data collection techniques and the collection of both qualitative and quantitative data. This is then followed by a discussion of the choice of experimental design as the thesis' research design in section four. Section five discusses reliability and validity of the experimental survey. Reliability is evaluated using Cronbach's Alpha and shows that the majority of the results are highly reliable. Measures taken to ensure high validity are also discussed. Then, the population of the study is described including a discussion of sampling technique. Following, a couple of limitations of the research are presented.

3.1 Research Approach

The thesis' approach is abductive, which *"... constantly varies between empirical and theoretical work in an ongoing process in which they inform one another in a quest for empirically based and theoretically informed analytic knowledge"* (Halkier, 2001:44). The abductive strategy is chosen as the author on the one hand is theoretically informed before entering into the field and on the other hand is open to learn something new from the empirical evidence. Moreover, the author acknowledges that the research is characterised by a dynamic interaction, moving back and forth between empirical evidence and theory. By doing so, the researcher's ideas are constantly challenged and developed, and thus allows oneself to truly learn something new about Value Added Services' effect on consumer perception of mobile payments, and thereby to answer the research question. This abduction is seen throughout the thesis by means of the constant moving back and forth between the literature reviewed in chapter 2 and the empirical data collected.

3.2 Process

A literature review forms the basis of the theoretical background knowledge of this thesis. Investigating existing literature means that the research is proven and has been accepted in the academic world. Combining several articles into one literature review means that the general findings in those research areas are summarized to both shape and fit the purpose of this thesis. The result of the literature review is a set of hypotheses combined from the two literature reviews, which are tested empirically in the thesis.

As the focus on VAS is outside from what has been researched before, a more exploratory approach is taken after the literature review in order to find out which VAS are most relevant. In order to select a set of VAS, a small survey is sent out to a group of respondents (n=100), whom are asked to rate a set of possible VAS according to which they find most interesting and relevant. Asking a group of people instead of just choosing VAS by means of research ensures that the selected VAS are relevant to the target group. Finding the VAS that consumers find most attractive helps answer the research question more effectively rather than identifying three random VAS. This is due to the argument that consumers are more likely to use VAS that they find attractive than VAS, which they find less attractive. The survey was sent out through Facebook, which means that the respondents are personal friends of the author. This method can be criticized as it may compromise the generalizability of the outcome. However, as the findings were only used to select VAS and not to address the research question, this method was deemed appropriate and no extra measures taken to decrease potential bias.

Following this, a focus group was facilitated, in which participants were asked to discuss both mobile payment and the selected VAS. This in order to understand their perception of mobile payments and potential VAS, and thus create better and more targeted questions for the planned survey. The reason for including a focus group was that it allows for dynamic interaction amongst the participants, which often leads to insight that the researcher could not gain from literature reviews or surveys. By combining the results from the focus group with insights from the literature review, solid background knowledge is obtained. Only one focus group was conducted, which can be criticized, but as the conclusions of this research are not based on the focus group it was deemed sufficient to conduct only one. The participants were within the same age group (26-28) and were all users of smartphones, but represented

different occupations and educational backgrounds. The findings from this focus group influence the design of the experimental survey, and it is therefore important that the participants match the population of the study (the population is described in section 3.6). The participants are deemed good representatives of this population. A limitation is that the author knows the participants personally, but the potential bias resulting from this was reduced by selecting participants that did not know each other.

Finally, a survey was used to collect data from a larger sample by experimental design. The survey uses mainly closed-end statement questions, which respondents are asked to rate on a Likert scale of 1-7, but presents the respondents with optional open-ended comment boxes. The quantitative results from this survey are used to confirm or reject the hypotheses, and the qualitative findings are used to further understand the quantitative findings. The use of survey and the choice of an experimental design is further discussed below, in section 3.4, as this forms the basis of the research design for the thesis and requires more thorough explanation and discussion.

The research and data collection process and its purposes are illustrated in Figure 5. The figure summarizes the four steps of data collection: 1) literature review, 2) pre-survey, 3) focus group, and 4) experimental survey. The purpose of each of these four steps, i.e. their contribution to answering the research question, is summarized together with the type of data is collected, i.e. qualitative and/or quantitative.

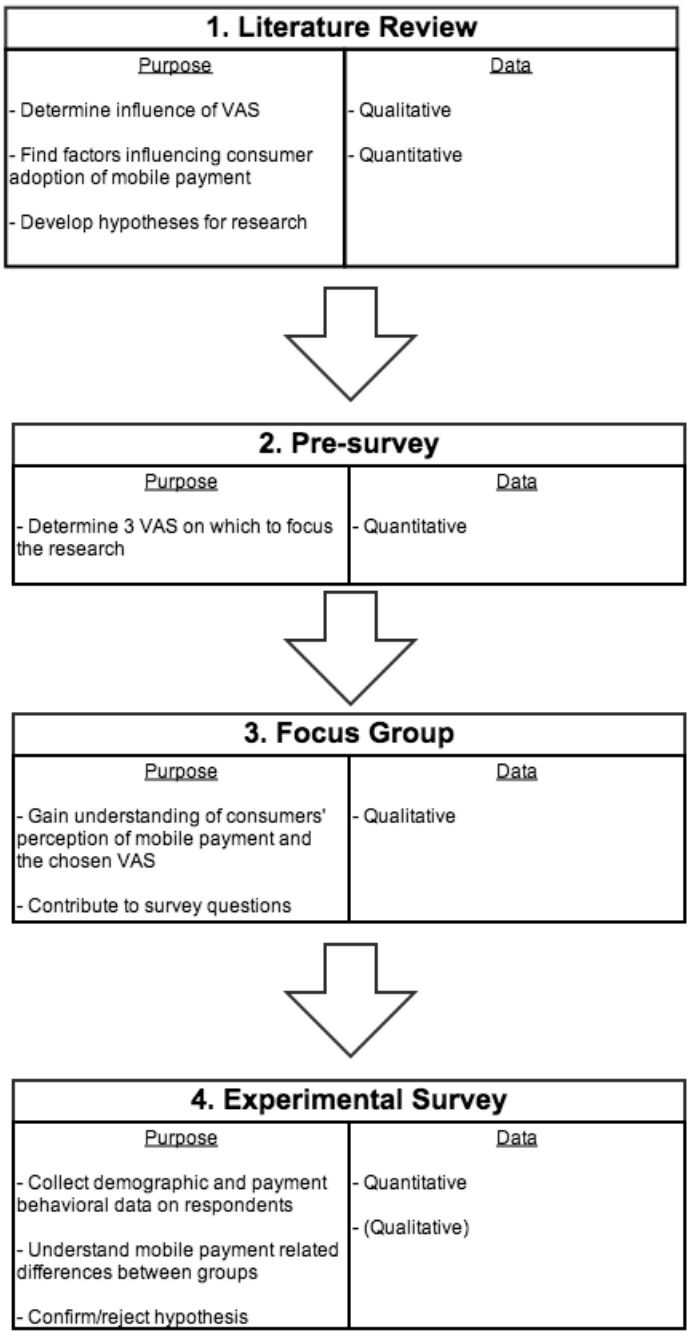


Figure 5 - Research and data collection process

While Figure 5 illustrates the process for data collection, Figure 6 illustrates how the data collected has been used amongst each other throughout the data collection process.

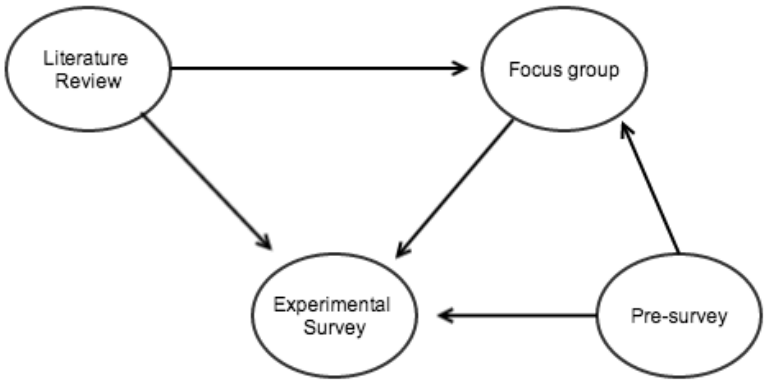


Figure 6 - Use of data throughout collection process

3.2.1 Data Collection Period

The data was collected over a period of three months.

Data	Collection dates
Pre-survey	2.7.13 – 9.7.13
Focus group	8.8.13
Pretesting	30.9.13 – 3.10.13
Survey	8.10.13 – 17.10.13

3.3 Methodological Plurality

As described in the above section, this research uses several different data collection techniques and combines qualitative and quantitative data collection methods. The strength of using a mixed methods design like this is that it can add insight and understanding that might be missed if using only a single method. By combining findings obtained from a literature review with primary qualitative data collected through a focus group, a broad level of background knowledge is obtained. The thesis seeks to understand underlying assumptions of consumer intention to adopt, which can be very difficult using quantitative data. Therefore, it is important that the measurement items of the quantitative survey are grounded in relevant knowledge, which requires a thorough understanding of the research field.

Although the survey is mainly quantitative, it also uses qualitative techniques by means of optional open-ended comment boxes. Relying solely on quantitative measurements means that respondents are forced to choose without being able to reason their choice. It is likely

that some respondents are not sure about an answer or that they interpret a question in two or more ways, and therefore feel a need to explain their choice. These qualitative findings can thus help further understand and interpret the quantitative findings. Hence, open-ended questions can lead to deeper insights than the researcher would obtain solely from quantitative measurements.

3.4 Research Design

As the thesis aims to understand the effect of VAS on consumers' intention to adopt mobile payment, and therefore study the causal relationship of this, a research design that allows for cause-and-effect investigation is required. An experimental design is therefore adopted, in which one group, the *experimental group*, receives some kind of intervention that forms the independent variable; in this case the intervention is VAS, and thus the independent variable is inclusion or non-inclusion of VAS. In another group, the *control group*, no intervention is made, meaning the control group will be asked purely about mobile payments, without including VAS. It was earlier hypothesized that VAS will positively affect both Attitude Toward Use and Intention to Adopt, and if this holds true the answers will differ from the control group to the experimental group. The effect of the independent variable, VAS, can thus be measured on the dependent variable, which is mobile payment adoption. This research design is illustrated in Figure 7.

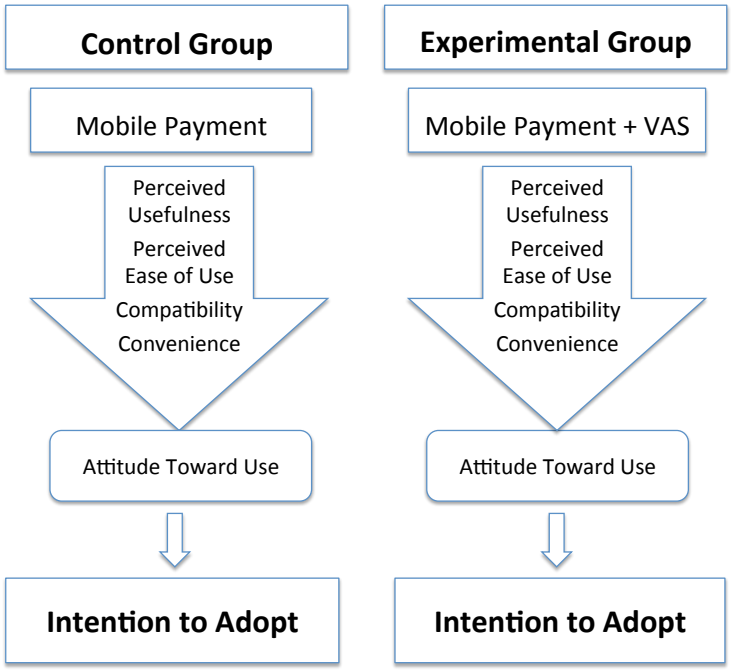


Figure 7 - Research design

Thus, as illustrated in Figure 7, the difference in consumer intention to adopt mobile payment alone versus mobile payment including VAS, will be researched by comparing the findings from the experimental group to the findings of the control group.

3.4.1 Justification of Experimental Design

The choice of using an experimental design rather than a traditional survey design is due to the intention to understand the causal relationship between the acceptance of mobile payment and the presence of VAS. A traditional survey design cannot determine cause and effect, only correlation. An experimental design therefore appears to be the best way to investigate the differences across two groups.

When investigating how VAS affect consumers' perception of mobile payment it is important to understand how consumers perceive mobile payment in itself, i.e. without VAS. The control group serves this purpose and allows for comparison across the two groups.

Additionally, if asking the same group of respondents first about mobile payments and then about VAS (i.e. through a traditional survey design) it is almost certain that they will rate it higher as it is perceived as an extra service. If doing an experimental design, however, this is avoided.

3.4.2 Consequences of Experimental Design

An experimental design allows the manipulation of an independent variable to see if it has an effect on the dependent variable, which means that all other variables need to be as homogenous as possible. Using a segment that is similar in certain aspects means that results are less generalizable (less externally valid) than if a broader sample was included, which can be considered a limitation when applying the results to the broader population.

Additionally, when comparing two groups there is a risk that the differences in results do not come from the manipulation of the independent variable, but because subjects in one group behave differently from subjects in another group (because they are different people, with different abilities, motivation, etc.) However, randomization reduces this risk.

True experiments often require taking the subjects out of their natural environment and placing them in an artificial setting, which can limit the validity of the study (Bryman, 2012). Using a survey avoids this issue as people are not exposed to the design physically, but rather asked to evaluate their opinion. While carrying out the experiment in a laboratory setting

would be very interesting, it is not possible due to the fact that the solution does not yet exist in Denmark. However, as there has been much focus on mobile payments in the past year, consumers are likely to have an idea of how it would work, and therefore the lack of trial should not be a limitation. Additionally, the thesis investigates consumers' intention to adopt mobile payments by means of their Attitude Towards Using mobile payments, and therefore evaluating this through a survey is interesting. Also, a survey allows for more responses and decreases the otherwise low external validity of experimental settings.

As true experiments usually are carried out in a controlled setting using a smaller group or participants, but this thesis applies a survey to a larger group of respondents, it can be discussed whether it is indeed an experiment. The method has traits of a quasi-experiment, in which subjects are observed in their natural settings. However, the main difference between experiments and quasi-experiments is that experiments use randomization and control groups, whereas quasi-experiments don't (Bryman, 2012). Therefore, the design may be referred to as a mix between an experimental and quasi-experimental design, but to avoid confusion it will henceforth be referred to as an experimental design.

3.5 Validity and Reliability

3.5.1 Reliability

Reliability is concerned with whether the indicators that are used in the scales are consistent, i.e. respondents' scores on one indicator relate to scores on the others (Field, 2009). Three questions are posed for each measurement item.

Cronbach's Alpha was calculated separately for control group and experimental group and separately for each factor. The respective values are indicative of a reliable measurement of the individual factors for Perceived Usefulness, Compatibility, Convenience, and Intention to Adopt. All coefficient alphas exceed the recommended threshold of 0.7 (Nunnally 1978).

For Perceived Ease of Use, however, the measures were below 0.7. The measures were above 0.3, however, so the data will not be discarded (Field, 2009). Additionally, the results to this parameter are still interesting for the thesis. The low reliability is especially likely to be seen as a result of respondents' unfamiliarity with mobile payments. In retrospect, these questions ask different things (see section 3.2.2): Two of the question items deal with interaction with mobile payments, which is difficult to rate when untried, whereas the third deals with the

expected ease of learning the system. On the contrary, as the respondents are tech-savvy and used to smartphones (see section 3.4 below), it is likely that they expect a new system to be easy to learn.

Cronbach's Alpha also indicated high reliability when applied to Attitude Towards Use, with measures above 0.7.

3.5.2 Validity

Validity is concerned with the extent to which the measure accurately reflects the purpose of the research (Field, 2009). This is addressed in two ways: 1) The majority of questions used in the survey are adapted from previous research, meaning that these have already been tested thoroughly and can therefore be considered valid in this sense. 2) The survey was pretested before being sent out meaning that several test persons have discussed their understanding of the various questions.

Thus, validity is deemed to be high.

3.6 Population of the Study

As an experimental study, this study does not aim to generalize to a larger population, but rather to generalize the effect of the three selected Value Added Services. Consequently, "population" does not refer to the traditional sense of using a sample to estimate the value of aspects of the population, but rather to the target group, which posses certain features to which this study limits itself.

As this thesis studies a technology that is only in its infancy in terms of spread and consumer-recognition, it is important to focus on a population that is tech-savvy and has early adopter traits, as these are more likely to be open to new technologies. As illustrated in Figure 1, 25-34 year-olds Danes are most frequent users of m-commerce, followed by the age groups 15-24 and 35-44. Similarly, it is this age group that has the highest use of smartphones (Dansk Statistik, 2012), although the remaining age groups are very close in usage. The population of the study is therefore chosen to be consumers in the age range 18-35. Furthermore, the focus is on students and young professionals, i.e. people who 1) plan to obtain, 2) are in middle of obtaining, or 3) have obtained a university education. The reason for the choice of population is accessibility (the author's network is within these critera) and homogeneity (this age group tends to be among the earlier adopters in Denmark (Forbrugerrådet, 2012), and have a very

high use of smartphones (FDIM, 2011)). Additionally, payment behavior is quite similar in this age groups, leaning towards the majority of payments being done with card (Hedman et al., 2013).

In order to ensure good understanding of mobile payments and VAS by the respondents as well as fulfill the definition of proximity payments (in-store or location-based payments with a smartphone to a point of sale" (Forrester, 2012)), it is a requirement that population members are current or previously experienced smartphone users.

3.6.1 Sampling

As mentioned above, sampling in its traditional sense has not been applied as this study does not aim to generalize results to a population. Nevertheless, respondents have been targeted according to above-mentioned features (age, education, tech-savvy'nes), and this will in this section be referred to as 'sampling'.

The sampling procedure follows a non-probability sampling method. While a probability sampling would be most ideal, it would require all members of the population to have equal chances of answering the survey, which is not the case as the survey is highly unlikely to reach all these. Finding respondents from within one's own network is called Convenience Sampling, but to avoid the bias of Convenience Sampling the author also reached outside the her own network. The survey was distributed to students of a university (IT University of Copenhagen) different to the one attended by the author (Copenhagen Business School). Additionally, it was sent out through Twitter by someone outside the author's personal network[11], thus reaching a broader group. Finally, the author collected surveys from random students on the street.

3.6.1.1 Limitations of sampling

Convenience sampling results in certain limitations. Firstly, it can make it difficult to replicate the study, as the respondents are likely to show similar traits specific to the researcher's network. Secondly, it can lead to systematic bias, in which the results differ from the theoretical results of the population. It is likely that a large proportion of the population that was left out, have different payment habits, different experience with smartphones, and an overall different perception of mobile payments. Finally, since the sample is not

[11] Mikkel Krogsholm, Copenhagen Finance IT Region

representative of the population, it limits the study's generalization, as the results cannot speak for the entire population.

However, as the thesis uses an experimental design these issues are not deemed significant as the purpose is to investigate the differences between a control group and an experimental group, and not to find results that can be generalized to the entire population.

3.7 Limitations

This study contains some overall limitations that need to be considered when evaluation the results.

Firstly, it does not differentiate between the Value Added Services chosen for investigation, but places them all in the same experimental group. The VAS offer very different services and some are more important to consumers than others. This is evident from the survey selecting the three VAS (section 4.1.2), in which they were rated very differently. Similarly, the focus group showed different interest in the three VAS. Thus, mobile payment providers need to consider which VAS are most appropriate.

Secondly, true experiments not only prove that if an event occurs, then an outcome occurs, but also that if an event does not occur, then the outcome does not occur. The latter has not been proven in this thesis; in fact, the control group still showed positive attitude towards intention to adopt mobile payment. However, the results are still important as they show that VAS increase both Attitude Towards Use and the Intention to Adopt. Additionally, the purpose was not to show that mobile payments will not be adopted unless VAS are offered, but rather to investigate how VAS affect consumers' intention to adopt mobile payments.

Thirdly, the fact that proximity mobile payments do not yet exist in Denmark means that consumers have not had the opportunity to try it out. Therefore, it may be difficult for them to answer the survey questions. Comments in the survey show that some respondents had a hard time rating certain questions, especially in regard to Perceived Ease of Use and Perceived Usefulness, as they have never tried this payment solution. Although this can be considered a limitation, the thesis aims to understand people's intention to adopt mobile payment. This means that the four parameters measure expectations rather than existing opinion, and despite the critique by some respondents the method is deemed appropriate.

Fourthly, as the focus is on the intention to adopt mobile payments, the thesis only measures expected behavior. Although Intention to Adopt is a good predictor of future behavior, it cannot be said with certainty that it is what will happen. To fully understand actual behavior, a study focusing on consumers' after adoption perception could be conducted. This would give a more accurate picture of consumer perception, as they have already had the opportunity to try the mobile payment and Value Added Services in question, and are therefore in a better position to evaluate mobile payment in terms of the four parameters.

3.8 Sub Conclusion

This chapter has presented the methodology adopted to answer the research question of this thesis. By means of four steps, 1) literature review, 2) pre-survey, 3) focus group, and 4) experimental survey, the research question will be addressed by collection of qualitative and quantitative data. The first step, which was already completed in chapter 2, consisted of a literature review and a resulting establishment of hypotheses. The second step selects three Value Added Services that will represent the concept of Value Added Services to the population sample of the study. The third step, the focus group, will help reveal aspects of mobile payment adoption and Value Added Services that the literature review does not necessarily address. This, together with the knowledge obtained in the literature review, will result in solid background knowledge about mobile payment adoption and Value Added Services. The final step is the experimental survey, which is developed based on knowledge obtained in the three preceding steps.

4 Background Information: Data Collection

Pre-Survey • Focus Group • Sub Conclusion

In this chapter, the data collection procedures for the pre-survey and the focus group are explained. As explained in Chapter 3, the data collection process is consecutive, meaning that data obtained from one step is used in the data collection procedure in the preceding step. Therefore, the findings are also described in this chapter.

The first section first presents the method for selecting Value Added Services, and then introduces the reader to the three Value Added Services that are used in the thesis.

The second section presents the method for collecting data from the focus group, and then summarizes the most important findings in relation to the hypotheses developed in chapter 2.

4.1 Pre-survey

This section discusses the pre-survey, which determines which three VAS will be used in the research. The first section presents how it was done, and the second presents the findings.

4.1.1 Method

In order to decide which VAS to use, a list of potential VAS was assembled. This was accomplished through research on Google and from informational sources such as Accenture, Mobile Payments Today, Mashable, and Payments Council. This list is shown in Table 7.

Value Added Service	Description
Receipt storage	A digital receipt is automatically sent to your phone after a purchase
Loyalty cards	Loyalty cards are stored on your phone and automatically registered when paying with it
Coupons & vouchers	You can receive instant coupons based on your purchases when paying with your phone. You can also receive time-limited coupons based on your location
Gift cards	You can buy, send, receive, store and pay with gift cards
Balance check before and after paying	You will be shown your account balance before and after making a payment
Financial overview	You will get a financial overview and analysis of your expenditure
Instant currency converter	Your phone will instantly convert an amount to a currency of your choice

Table 7 - Eight potential VAS

The list was then sent out to 100 people through Facebook, asking them to select the three most interesting VAS.

4.1.2 Findings

Out of the 100 people, 78 answered and the results were the following:

	Rank = 1 % of total	Rank = 2 % of total	Rank = 3 % of total	Total voted on… Total % of total
Receipts	28,2	16,7	20,5	65,4
Loyalty cards	25,6	20,5	15,4	61,5
Coupons & vouchers	19,2	28,2	12,8	60,3
Financial overview	16,7	14,1	16,7	47,4
Balance check	3,8	7,7	10,3	21,8

Table 8 - Pre-survey results

As seen in Table 8 above, at least 60% of the 78 respondents placed loyalty cards, coupons & vouchers, and receipts on their top 3. Financial overview was also interesting to the respondents, with 47.4% placing it in either three places. Balance check was fifth with 21.8% of respondents placing it in either of the three places.

Hence, the top three selected for this thesis were 1) receipts, 2) loyalty cards, and 3) coupons & vouchers.

4.1.3 Description of the Value Added Services

Below is a description of the three chosen VAS and arguments as to why they are relevant to the Danish market as well as this thesis.

4.1.3.1 Automatic storage of receipts on phone

When a consumer pays with his mobile phone, the receipt for the purchase can be stored digitally rather than printed. A digital receipt is as legally valid as a physical receipt, both when used for exchange, return, and warranty. As it is now, consumers need to save their receipts for purposes of warranty and overview of spending. Even if a person manages to save receipts and keep them organized, after a while the ink fades out or the paper yellows. Warranty in Denmark lasts for two years, which is longer than most receipts last.

Digital receipts help consumers keep their receipts organized and intact. Digitalizing receipts means consumers can search for specific items on receipts, for instance a specific date,

merchant or good. And consumers will no longer need to worry about losing out on warranties.

In their 2012 survey about mobile payment use in North America, Accenture found that 60% of consumers would like to be able to store receipts on their mobile phones.

Thus, automatic storage of receipts when paying with a mobile phone is likely to be perceived as a positive addition to mobile payment.

4.1.3.2 Loyalty cards

There are two types of loyalty cards: "Stamp cards" and "points cards". Stamp cards typically offer a free item, for instance "buy 9, get 1 free", to get costumers to return, and are often used by cafes, bakeries and the like. Points cards offer points when purchasing items, that can then be redeemed to, for example, store credit or a gift. This type of loyalty membership is often seen with airlines and retail/grocery stores.

In Denmark, 80% of the population has at least one loyalty membership. 75% of these have it to obtain discounts, and a little over 50% say that they also do it to earn points and/or credit (Forbrugerrådet, 2011). In their research, Forbrugerrådet find that it is only a matter of time before loyalty cards become digital, as consumers do not want to carry around several physical loyalty cards in their wallets. Additionally, it often happens that consumers either forget their loyalty card or simply forget that they have a loyalty membership in a given store, which a digital card helps avoid.

Storing a digital version of a loyalty card on a phone allows the automatic registration of points or a stamp when paying with a mobile phone. This means that neither the consumer nor the sales clerk will need to do anything in order to register the purchase to the loyalty membership.

Thus, it is expected that offering automatic registration of loyalty points, whether stamp card or points card, when paying with a mobile phone will have a positive affect on people's perception of mobile payments.

4.1.3.3 Coupons

Coupons can be used with mobile payments in different scenarios. For instance, stores can offer consumers personal coupons or vouchers based on their purchases, which entices the

consumer to return for another purchase. Also, it can be offered in a "coupon marketplace" where consumers can download coupons of interest to their phones. Finally, it can be given to consumers that are not yet customers, in order to motivate them to enter the store (Kroger.com).

Unlike a voucher, which is the most commonly seen in Denmark, a coupon requires a purchase be made in order to redeem the value. This can for example be in terms of "2-for-1", "5 DKK off on purchase" or "20% off". A voucher is a 'ticket', which can be exchanged for an item. It can either be bought by the consumer (an example of this is GroupOn's use of vouchers) or given to the consumer by a store (walk into a store with the voucher and get an item for free). A voucher does not require a purchase be made in order to redeem the offer. While both are relevant, differentiating between the two, especially in the data collection process, is confusing, so vouchers and coupons will henceforth be referred to collectively as coupons.

Accenture, in their survey about mobile payment use in North America, found that 60% of consumers would probably increase their use of mobile payments if they received instant coupons as a result. Similarly, 46% said that they would increase payments if they received short-term location based coupons. While the culture for using coupons is much more widespread in North America than in Denmark, it does reveal an interesting pattern: that the option to save money affects consumer choice of payment method.

Hence, coupons are expected to be viewed as a positive VAS.

4.2 Focus Group

This section discusses the focus group. The first section presents how it was done, and the second section presents the findings.

4.2.1 Method

A focus group was conducted in order to collect additional information about the target population's view on mobile payments and VAS. It lasted for approximately an hour and took place at Copenhagen Business School, in a quiet group room.

The four participants are all users of smartphones, which was a requirement in order for them to understand the potential of using add-ons (gained from use of smartphone apps). A list of participants can be found in appendix 1 together with the guide for the focus groups

and a summary of the main discussion points. A recording of the focus group is available in the attached cd).

The focus group was carried out on August 7, 2013. Six participants had signed up, but one was sick so only five showed up. Three of these had experience with mobile payments, either from pSMS or p2p transfer (MobilePay or Swipp). The participants were first explained the purpose of the focus group and then given a short introduction to proximity mobile payments. The theory guiding the focus group was Theory of Consumption Value[12] (TCV) proposed by Sheth et al. in 1991. The reason for the deviance in the theory from the theory used in the thesis is that the original intention was to apply TCV to investigate the role of VAS on mobile payment adoption. However, as the thesis developed, a somewhat different direction was taken and TCV was abandoned.

While the above may indicate that the focus group is then not applicable, it did reveal some very interesting aspect that are highly useful for this thesis with its current research focus.

The participants were first asked to consider mobile payments by itself, and then each of the selected VAS were discussed in turn. For each area discussed, the structure was according to TCV, thus first asking about Functional Value, and then the remaining four factors.

The most debated areas are summarized in the following section.

4.2.2 Findings

In this section, the areas that engendered most agreement, and ideas are described below. The structure is according to the parameters on which mobile payment adoption in measured in this thesis. The summary is organized by first discussing it in relation to mobile payments only, and then in relation to VAS. As will be discovered, the presence of VAS greatly modified their perceptions of the value of mobile payments. The findings are summarized in Table 9.

4.2.2.1 Perceived Usefulness

4.2.2.1.1 Mobile payment alone

The participants could see both advantages and disadvantages to mobile payments, when asked to compare it to payment with cash or card. The fact that they felt safer not carrying

[12] TCV address explicit and implicit reasons and motives when people make decisions in consumer situations and help form the foundation of consumer research (Bødker et al., 2009). The five parameters on which this is measured are Functional Value, Epistemic Value, Emotional Value, Social Value, and Conditional Value.

cash was discussed, but mostly manifested in certain contexts, such as when traveling or when attending festivals, concerts, and the like. Additionally, they discussed whether it would be faster to pay with it than using a card, to which three respondents concluded that it seemed to be faster, whereas the two other disagreed.

However, the sense of spending control, an element that returned a few times, was perceived as being lower with mobile payments than cash. When the participants want to limit their spending, either on a weekly basis or in one night, they take out cash and stick to that. At first they saw mobile payments as being as uncontrollable as credit cards, but when they discussed it further they realized that on a mobile phone spending can be seen instantly, so they agreed that they would have more control when using their mobile phones than their cards.

4.2.2.1.2 Value Added Services

The respondents viewed it as both faster and easier using VAS when it was done automatically via mobile payment.

The VAS that truly made a difference was the automatic storage of receipts, to which one of the less tech-savvy respondents said that this VAS would convince her to adopt mobile payments. The remaining respondents agreed that receipts dramatically increase the value of mobile payments, as the alternative (keeping physical receipts) was unattractive. However, they also stated that it would have to be 100% automatic or they would not use it.

4.2.2.2 Ease of Use

This factor was not discussed very much, and only briefly in relation to mobile payment only. The participants did not it as a difficult problem to learn to use a new payment technology. One of the participants saw it as fun, and the others indicated that it was no problem as long as they could see the technology functioned when other people use it.

Additionally, throughout the focus group, the participants mentioned that simplicity is important. For instance, they don't want to have to use three different sources when using mobile payments; everything has to be integrated into one place. In relation to VAS, this means that they want all the VAS integrated with the mobile payment solution in one app.

4.2.2.3 Perceived Compatibility

4.2.2.3.1 Mobile payment only

One of the most lively discussed areas was the Perceived Compatibility of both mobile payments in itself and VAS with the existing values and needs of the participants. They mentioned that they always have their phone with them and that, provided that it was accepted everywhere, they could use it anytime they wanted for payment. Similarly, the fact that they all nearly always have their phones with them, but not always their wallet, was an important factor. The idea of being able to use their phone which they almost constantly have in their hands was perceived as positive because it fits their current lifestyle.

However, there were also elements where Perceived Compatibility is perhaps not as prevalent as much as the existing literature believes. One of the respondents often visits Fyn, and explained that she often did not have wireless coverage, which would make transactions difficult. Additionally, one of the respondents' explained that she does not bring her phone when grocery shopping: "*my Dankort fits right in my pocket, and I often leave my phone at home when I go grocery shopping as I can't be bothered to carry it with me*." (Stine). Finally, there were certain situations when the participants did not want to bring their mobile phones. For instance, events where it is likely to be stolen or run out of battery, such as festivals and concerts

4.2.2.3.2 Value Added Services

When moving on to VAS, it was clear that they not only are compatible with the participants' existing norms, but they also fulfill a gap in terms of needs by simplifying everyday tasks, which spoke highly to the participants. One of the participants keeps two large boxes filled with receipts and warranties, and the others explained that they tend to lose their receipts. They were all very excited about the idea of having receipts sent to their phones. One of the participants even stated that if this VAS were included, that would convince her to use mobile payments. All of the participants agreed that receipts storage very much enhanced the value of mobile payments.

Additionally, they discussed that VAS stored on the mobile phone are always readily available as the phone is usually with them,

4.2.2.4 Convenience

4.2.2.4.1 Mobile payment only

The respondents discussed elements that point towards mobile payment being very convenient. They felt that they had to carry less things around, although they didn't think that they could completely abandon their wallets, as they still need ID cards. Additionally, they liked the idea of gathering things into one place, instead of always having to remember their phone and wallet. Only having to bring one item was seen as attractive.

However, they found that it was too difficult to recognize where accepted mobile payments, and that it therefore becomes too difficult to use. In this sense, card and cash payment fit with better with their existing everyday life as they know it is accepted nearly everywhere in Denmark.

4.2.2.4.2 Value Added Services

Especially the "space" factors, not having to carry them around in a wallet, and the fact that they would not have to ask for loyalty card advantages in the store, was seen as being more advantageous.

All of the stated that they would probably sign up for more loyalty cards if they could be stored on the phone. This is interesting as they all also said that they limit the amount of loyalty cards due to space constraints and the fact that they forget to bring their cards.

The participants all agreed that the loyalty cards option was very smart and the majority (3) of them would use it. A few of them mentioned that the reason for them not having more loyalty cards than they do, is because of space issues – they simply don't have space in their wallets. Matas' loyalty card offered as a small keychain was used as an example of being highly compatible with the participants' needs.

	Mobile Payment	VAS
Perceived Usefulness	+ Safety of carrying electronic money compared to cash + The same or more control of spending than with card + Perceived as faster using VAS on mobile than physically + Perceived as faster than cash and card by some participants - Less control than with cash	+ If receipts were part of mobile payments, it would vastly increase value + Has to be 100% automatic or participants will not use + Less paper waste of receipts + Faster and easier to use VAS
Perceived Ease of Use	+ Not perceived as overly complicated + Fun to try out a new technology	n/a
Compatibility	+ Positive of the idea of combining wallet and phone + Almost always bring phones, not always wallet - Not always wireless access in Denmark - Don't use mobile phones at festivals and events due to risk of theft and battery dying	+ Storing receipts eliminates need for saving physical receipts which gives feeling of safety and comfort + Tend to forget to bring loyalty cards and coupons when they are needed
Convenience	+ Like the idea of not having to bring many items - Only time phone is left at home is when grocery shopping. Prefer only bringing card as it's smaller.	+ Can have loyalty cards to more places as space constraint is no longer an issue + Don't want to carry around lots of coupons and voucher + Participants selective of loyalty cards due to space constraints in wallet

Table 9 - Main discussion areas, focus group

4.2.3 Discussion

The focus group resulted in useful information for developing survey questions, but also revealed a weakness. At the time of the data collection, the most known mobile payment solution in Denmark is MobilePay. This meant that even though proximity mobile payments was explained, the participants had p2p in mind. Their idea of the value brought forward by mobile payments was therefore extremely influenced by the value proposition of p2p transfers. This emphasizes the importance of explaining proximity payments carefully in the survey, in order to avoid respondents to think of p2p.

4.3 Sub Conclusion

This chapter has presented the data collection techniques used to find background data that is used to design the experimental survey. The first section introduced the pre-survey that was used to select three Value Added Services selected for the thesis: Receipts, Loyalty Cards, and Coupons. Following this, the focus group was presented and the findings were described.

5 Experimental Survey: Data Collection

Introduction to the Survey • Survey Design • Ensuring Validity of Survey • Pretesting • Distribution of the Survey • Evaluating Similarity of Control and Experimental Group • Mobile Payment Data • Sub Conclusion

This chapter presents the experimental survey data collection. The survey is the focal point of the thesis, as the results from this is the data upon which the hypotheses are validated.

This first section introduces some general thoughts behind the survey and illustrates the structure of the survey. The second section presents the full survey and discusses methodological considerations in terms of designing the survey. This is followed by a discussion of measures taken to increase the validity of the survey, in section three. The pretesting process and changes made as a result of this are then described in section four. This is followed by a summary of the four different distribution channels of the survey. Section six evaluates the internal validity of the data by comparing the respondents' answers to the demographic questions and the payment habit questions. Section eight presents descriptive statistics on data collected about mobile payments, i.e. the responses to the four parameters and the Intention to Adopt.

5.1 Introduction to the Survey

The literature review resulted in a set of survey questions, inquiring about the parameters and Intention to Adopt mobile payments. The majority of questions in the survey are taken from these and adapted to fit this research. Previously used survey questions are useful as these have already been tested and proven by researchers, and can therefore be considered valid. Some of the questions, however, are completely new, as it was discovered in the focus group that certain perspectives have not been formulated in existing surveys. This is elaborated in section 5.2.4.

As a larger amount of questions often correlates with a higher degree of respondents prematurely finishing the survey, it was deemed important to keep the amount of questions at a minimum, while retaining statistical validity. Surveys from existing research papers discussed in the literature review follow a model of 3-4 questions per construct (Chen, 2008;

Schierz et al, 2009; Kim et al., 2010) Therefore, all parameters as well as Intention to Adopt are measured on a set of 3 questions.

The control group survey questions and the experimental group survey questions are exactly the same, except for the addition of "the extra services" after the term "mobile payment" in the experimental survey. Additionally, the introductory text and visualization are different, as this is where the independent variable (VAS) is described. Therefore, three extra items were added to the experimental survey to explain and visualize the three VAS.

The structure of the survey is illustrated in Figure 8.

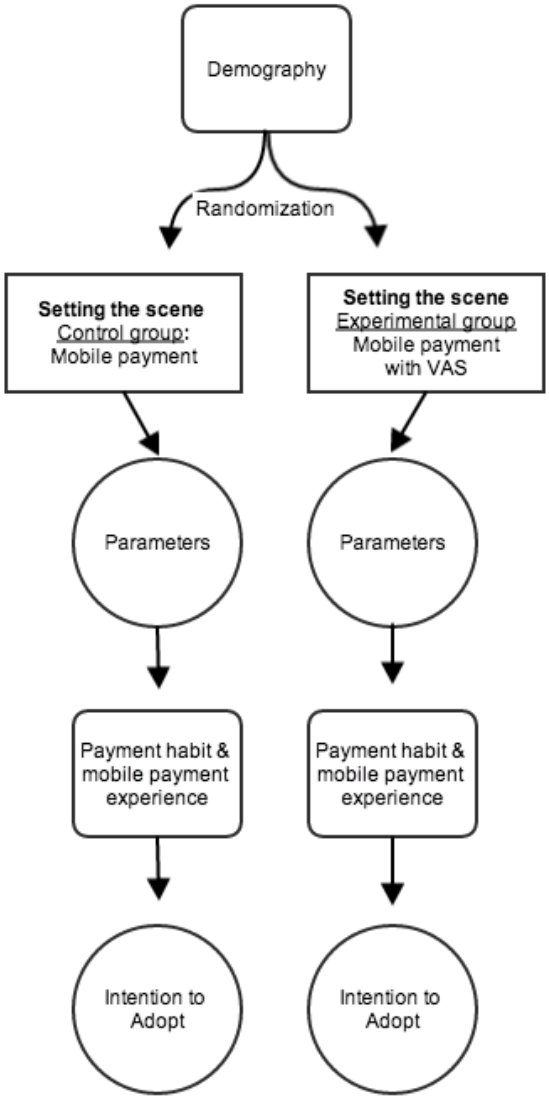


Figure 8 - Structure of experimental survey

A copy of the full survey is found in appendix 2.

5.2 Survey Design

This section presents the survey design according to its structure, which is illustrated of Figure 8.

5.2.1 Respondent Demography

To begin with, the respondents were asked to answer questions about their gender, age, occupation, and income level. This information is collected in order to understand the basic demographics of the respondents, as well as ensure similarity across the two survey groups.

After this, respondents were asked to select one of two buttons. As Survey Monkey does not offer randomization in the distribution of surveys, this was necessary in order to ensure randomization, which is a requirement of an experimental design in order to ensure validity. Each button had skip logic added to it, so that the respondents were directed to either of the two surveys.

5.2.2 Mobile payments: Setting the Scene

In both the control survey and the experimental survey, respondents first saw the following text and pictures:

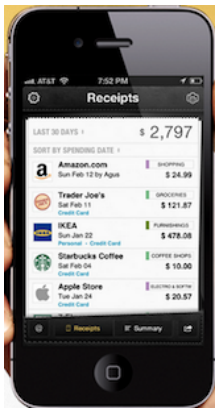
In the future you will be able to pay with your mobile phone.
This is done by tapping your phone on the payment terminal, which opens an app on your phone for payment approval, after which the payment is deducted from your bank account.

Respondents of the control group were then directed to the survey questions, whereas respondents of the experimental group were directed to the following explanations of VAS

You can receive your <u>receipts digitally</u>,

which means you can organize them,

search for receipts based on date, item, merchant etc.



You can store your loyalty cards on your phone so that your points are registered and discounts are redeemed automatically when paying with your phone

You can receive instant coupons, which are stored on your phone for future savings

Respondents were then directed to the survey questions measuring the Attitude Towards Use.

5.2.3 Attitude Towards Use

Table 10 summarizes the questions posed in the survey. The parentheses indicate that this text was only included in the experimental survey.

	Thesis question	Original question	Author of original question
Perceived Usefulness	1. Mobile payment (and the extra services) makes paying easier	Using mobile payment makes handling of payments easier	Chen (2008)
	2. Mobile payment (and the extra services) provides me with better overview of my expenditure	Focus group	n/a
	3. Mobile payment (and the extra services) makes paying more efficient	Mobile payment is useful because it is more efficient	Schierz et al., (2009)
Perceived Ease of Use	4. It is unclear to me how I should interact with mobile payment (and the extra services)	It seems clear to me how I should interact with mobile payment	Schierz et al., (2009)
	5. It is easy to perform the steps required to use mobile payment (and the extra services)	It is easy to perform the steps required to use mobile payment	Schierz et al., (2009)
	6. Learning to use mobile payment (and the extra services) is difficult for me	Learning to use mobile payment is easy for me	Kim et al. (2010)
Compati-bility	7. Mobile payment (and the extra services) fit my daily routine tasks	I believe mobile payment is compatible with my daily routine tasks	Kim et al., (2010)
	8. Mobile payment (and the extra services) is useful because I don't always have to remember to bring my phone	Focus group	n/a
	9. Using mobile payment (and the extra services) does not fit well with how I like to pay	Using mobile payment fits well with the way I like to purchase products and services	Schierz et al., (2009)
Conveni-ence	10. Mobile payment (and the extra services) are attractive because I can use it anytime	Mobile payment is convenient because I can use it anytime	Kim et al., (2010)
	11. Mobile payment (and the extra services) is attractive because the phone is always with me	Mobile payment is attractive because the phone is always with me	Kim et al., (2010)
	12. Mobile payment (and the extra services) limit how many items I have to carry around	Focus group	n/a

Table 10 - Survey questions, parameters

As evident in Table 10, some of selected original survey questions have been adapted to better fit this thesis' focus. Below, the major reasons for altering the questions are explained and the questions for which the reason is applicable are listed.

- Refrain from using the parameter's name in the wording of the question, i.e. avoid using "useful" in Perceived Usefulness questions (questions 3, 10).
- Wording should be clear and easy to understand without too any superfluous words (questions 1, 7).
- The questions served as validity questions and were rephrased to ask negatively about the parameter (see section x) (questions 4, 6, 9).

5.2.4 Payment Habit and Mobile Payment Experience

After answering the above questions, respondents were directed to a page asking them about their payment behavior. These questions serve two purposes: 1) They check for differences across the two respondent groups, and 2) they provide information about the respondents' payment habits. The latter is interesting as people who choose to pay with cash have different reasons for doing so than people who choose to pay with card (Hedman et al., 2013). This may reflect upon their answers to the mobile payment questions, and could explain variances in answers across cash-dominant payers and card-dominant payers.

How many of your payments are done with cash or card (in percent)?

% of cash _____

% of card _____

How often do you use different payment methods? For each payment type, please indicate how often you use them.

	Daily	Bi-weekly	Weekly	Monthly	Yearly	Never
Cash	○	○	○	○	○	○
Card	○	○	○	○	○	○
Netbank	○	○	○	○	○	○

How many times in your life have you used the following mobile payment?

	Never	1-2 times	3-5 times	5+ times
P2P payment (e.g. MobilePay; Swipp)	○	○	○	○
App payment (e.g. DSB Mobilbillet)	○	○	○	○
premiumSMS (send text, payment deducted from phone bill)	○	○	○	○
iZettle	○	○	○	○

The above payment behavior questions were placed between the section asking about the parameters and the section asking about intention to adopt mobile payment. This was done in order to get respondents to think of something else than mobile payments, before being asked about their intention to adopt mobile payment. By doing so, it is made sure that they are not simply in a state of "flow" of answering questions in which they are more likely to answer positively to whether they will adopt mobile payments. Therefore, distracting them serves to increase the validity of the answers.

Following this, the respondents were led to the page asking the about their intention to adopt mobile payments.

5.2.5 Intention to Adopt Mobile Payment

The respondents were asked to evaluate the below statements in order to measure their Intention to Adopt mobile payments. As before, the parentheses indicate that this text was only included in the experimental survey.

Parameter	Thesis question	Original question	Author of original question
Intention to adopt	I am likely to use mobile payment (and the extra services) in the future	I am likely to use mobile payment in the near future	Schierz et al., (2009)
	I plan to use mobile payment (and the extra services) when the opportunity arises	I intend to use mobile payment when the opportunity arises	Schierz et al., (2009)
	I plan to use mobile payment (and the extra services) instead of cash or card	Focus group	n/a

Table 11 - Survey questions, Intention

After asking the above questions, the respondents are finished and are therefore directed to a final page, thanking them for their participation.

5.2.6 Open-Ended Questions – Comment Box

After each section in the survey, a comment box was provided offering respondents to comment on their responses. It was not made obligatory to answer this (and the majority of respondents opted not to do so), but was mainly placed to give respondents the option to elaborate or comment on an answer.

5.2.7 Rating Scale

All statement questions, i.e. the ones asking about the Perceived Ease of Use, Perceived Usefulness, Compatibility, Convenience, and Intention to Adopt mobile payments are evaluated on a 7-step Likert scale from ”strongly disagree” (given 1 point) to “strongly agree” (given 7 points). Using a six-scale “forced choice” method was considered in order to avoid neutral answers, but it was decided to keep to the traditional Likert Scale, in which a neutral answer is offered. This was decided after discussing with the test persons (pretesting is discussed in the next section) and to avoid respondents feeling forced to answer something if they truly did not have an opinion. The latter is especially important since they are being asked about something they have never tried.

5.3 Ensuring Validity of Survey

In addition the in this section already mentioned steps taken to ensure validity of the survey, two more steps were taken. In order to reduce the tendency of respondents to use the same answer option for a row of questions some questions were asked “negatively”, meaning that rather than asking “It is clear to me how I should interact with mobile payment” it was stated as “it is unclear to me how I should interact with mobile payment”. The scale was the same (strongly disagree to strongly agree) but the amount of points assigned to the answer was reversed, i.e. strongly disagree was given 7 points instead of 1 point like the remaining questions in the survey.

Additionally, as the three statements for each parameter are quite similar, it was decided not to have the respondents answer the three similar questions immediately after each other. Rather, each page of the survey asking about the parameters contained four statements; one

for each parameter. This reduced the likelihood of respondents simply choosing the same answer option for questions measuring the same parameter and allowed for more variety.

The below Table 12 summarizes the measures taken in the survey design to optimize validity.

What done	How done	Purpose
Question asked negatively	Rather than asking, "It is clear to me how I should interact with mobile payment" it was stated as "it is unclear to me how I should interact with mobile payment". Accordingly, points assigned to answer was reversed	To reduce the tendency of respondents to use the same answer option for a row of questions
Shuffled questions	Each page of the survey that contained four statements; one for each parameter	To reduce the likelihood of respondents choosing the same answer option for questions measuring the same parameter
"Unrelated" questions placed between parameter questions and Intention to Adopt questions	Three "unrelated" questions asking respondents about their current payment behavior were placed after the four parameters were evaluated, and followed by statements about respondents' intention to adopt mobile payments	To get respondents to think of something a little different than mobile payments before evaluating their intention to adopt mobile payment, so that their answer did not simply become part of the "flow" of answering statement questions.
Randomization of control and experimental survey	As SurveyMonkey does not offer and option to randomize surveys, respondents were asked to select one of two buttons on the first page	Randomization is key to validity of experimental design and this was deemed the best option to randomize

Table 12 - Ensuring validity of survey

5.4 Pretesting

Pretesting was carried out over a course of two days. 10 people were interviewed in total; 7 of these face-to-face, 3 of them over the phone (after they had taken the survey online). After each respondent had provided feedback, adjustments were made in order to constantly have an optimized survey ready for the next pretesting interview (except for the explanation of how the payment would be carried out as this needed to be discussed with the thesis supervisor). The below Table 13 summarizes the results from the pretesting.

The majority of the test interviewees answered the experimental survey; this was on purpose as the questions in the two surveys are the same, but VAS explanations have been added to the experimental survey. Therefore, it was important to make sure people understood this text and the visualization. Five of the respondents, however, were given the test without being instructed in which survey to choose, as it is also important to have the control survey tested.

Interviewee number	Survey taken	Comments/adjustments
1	Experimental	Introductory text to questions added Cash vs. card use in % set to equal maximum 100%
2	Experimental	No comments
3	Experimental	Asked about how payment will work
4	Control	No comments
5	Experimental	Asked about how payment will work
6	Control	Suggested adjustments to payment explanation
7	Control	Comment box added to questions Randomization of questions
8	Experimental	No comments
9	Experimental	No comments Commented on Likert scale; should include neutral option
10	Experimental	Questions changed to be personal, i.e. include word "I" or "me" Commented on Likert scale; should include neutral option

Table 13 - Pretesting results

After the pretesting, the survey was deemed ready and was distributed.

5.5 Distribution of the Survey

The survey was distributed through 4 channels:

Facebook network: The survey was posted in the author's Facebook status, as well as in two private groups; one for the author's study program, and one for the student accommodation in which the author lives. Additionally, several people shared the survey with their network (on Facebook).

Normally, Facebook may be considered not to be the optimal channel for collecting data as the majority of respondents will be people in a researcher's close network, and therefore likely to show very similar traits. However, an experimental analysis requires the control group and the experimental group to be as homogenous as possible and therefore, in this case, it is useful to ask a group from within a small network.

In person: The author went out to ask CBS students in person to answer the survey. The respondents used the author's iPad to access the survey.

Email invitation: The supervisor of this thesis sent out an email invitation to his class at IT University of Copenhagen, asking them to complete the survey.

Twitter: Mikkel Krogsholm, consultant in Copenhagen Finance IT Region, sent out the survey to his network through Twitter.

The channels all target the same group of people: students and young professionals in the age group 18-35. As mentioned, this is on purpose as the respondents should be as homogenous as possible in order to create a valid comparison across the control group and the experimental group.

5.6 Evaluating Similarity of Control and Experimental Group

The part introduces the two respondent groups (control and experimental) in terms of their answers to the demographic questions and the payment habit questions. The respective means of the two groups are compared through independent t-tests to show whether there is statistical significance of the differences. All significances are set at 95%.

For the full data produced by SPSS and Excel, see appendix 3

A total number of 254 responses were collected through SurveyMonkey, of which 204 were appropriate for use (based on whether respondents had completed the survey). Of these, 105 answered the control survey and 99 answered the experimental survey.

5.6.1 Demographics of Respondents

The respondents were asked to answer a set of questions about their age, gender, income, and occupation. These were not required to answer but the vast majority (>95%) chose to answer. Table 14 summarizes the findings. The numbers are rounded to create a neater overview.

				Occupation			
	Mean age	**mean income**	**% men**	**% students**	**% employed**	**% self-employed**	**% un employed**
Both groups	27	12,334	53	55	36	5	4
Control	27	11,648	51	57	32	3	8
Experimental	27	13,055	57	52	39	5	3

Table 14 – Demography of respondents

SPSS independent t-tests were run on age and income in order to test whether the differences in means between the control group and the experimental group were significant. Both tests

were non-significant (Age: p=0.942; Income: p=0.144) so there are no significant differences between the two groups, i.e. the internal validity is not compromised.

There are some differences between the two groups in the ratio of men to women as well as differences in occupation, but they are comparably small and are not considered significant.

5.6.2 Payment Habits of Respondents

The respondents were asked to answer three questions regarding their payment habits: One about their cash vs. card use in percentage, another about the frequency of which they use cash, card, and netbank to pay for things, and a third about their experience with existing mobile payment instruments.

The data is presented in tables that show the means of the control group and the experimental group, followed by the mean difference and the significance of the difference between the means. The significance level is set at 95%.

5.6.2.1 Cash vs. Card Use (in %)

In the below Table 15, the differences in means between the control group and the experimental group in terms of their use of cards and cards is summarized.

	Group	Mean	Mean difference	Sig. difference, *p*
Cash use	Control	17.7	0.42	0.88
	Experimental	18.1		
Card use	Control	82.3	0.84	0.77
	Experimental	81.4		

Table 15 - Control group vs. experimental group, Cash & Card use

The 2-tailed significance comparing cash use and card use is non-significant (p>0.05), so there is no significant difference between the two groups, thus not compromising the internal validity on this parameter.

5.6.2.2 Card, Cash, and Netbank

Respondents were asked to answer how frequently they use a certain type of payment (cash, card, and netbank). The answer boxes were assigned numerical values according to rank: “never”=0, “yearly”=1, “monthly”=2, “weekly”=3, “bi-weekly”=4, “daily”=5. The results of the independent t-test are illustrated in Table 16 below.

	Group	Mean	Mean difference	Sig. difference, p
Cash Frequency	Control	2.56	-0.20	0.20
	Experimental	2.77		
Card Frequency	Control	4.58	0.01	0.89
	Experimental	4.57		
Netbank Frequency	Control	2.49	-0.11	0.36
	Experimental	2.59		

Table 16 - Control group vs. experimental group, frequency of cash, card & netbank use

The significance test shows that there are no significant differences between the means of these two samples (p>0.05), and therefore that the mean payment habits should not compromise the internal validity.

5.6.2.3 Mobile Payment Experience

Respondents were asked to state their experience with existing mobile payment initiates, peer2peer payment, app payment, premiumSMS, and iZettle. Similar to the above section, the answer boxes were assigned numerical values according to rank: "Never"=0, "1-2 times"=1, "3-5 times"=2, "5+ times"=3. The results are illustrated in Table 17.

	Group	Mean	Mean difference	Sig. difference, *p*
Peer2Peer	Control	1.40	-0.14	0.417
	Experimental	1.54		
AppPayment	Control	1.81	-0.02	0.910
	Experimental	1.83		
premiumSMS	Control	1.31	-0.26	0.133
	Experimental	1.57		
iZettle	Control	0.01	0.00	0.961
	Experimental	0.01		

Table 17 - Control vs. experimental group, mobile payment experience

The significance test shows that there are no significant differences between the means of the two samples (p>0.05), and therefore that difference in the mean payment habits should not compromise the internal validity.

5.6.2.4 Summary

Although there are small differences between the control group and the experimental groups, both in terms of demographics and payment habits, none of these are statistically significant and it is therefore concluded that the two groups are adequately homogenous to be compared in an experimental design.

5.7 Mobile Payment Data

This section presents the data collected about the four parameters and the Intention to Adopt mobile payment. Table 18 summarizes the means and standard deviations for each question.

Parameter	Question	Group	Mean	Std. Dev.
Perceived Usefulness	1. Mobile payment makes paying easier	Control	5.25	1.691
		Experimental	5.80	1.471
	2. Mobile payment provides me with better overview of my expenditure	Control	3.42	1.780
		Experimental	5.35	1.837
	3. Mobile payment makes paying more efficient	Control	4.66	1.646
		Experimental	5.45	1.745
Perceived Ease of Use	4. It is unclear to me how I should interact with mobile payment	Control	5.28	1.650
		Experimental	5.30	1.381
	5. It is easy to perform the steps required to use mobile payment	Control	5.07	1.339
		Experimental	5.23	1.413
	6. Learning to use mobile payment is difficult for me	Control	6.17	1.087
		Experimental	6.15	1.014
Compatibility	7. Mobile payment fits my daily routine tasks	Control	4.95	1.701
		Experimental	5.65	1.662
	8. Mobile payment is attractive because the phone is always with me	Control	4.38	2.141
		Experimental	5.25	2.012
	9. Using mobile payment does not fit well with how I like to pay	Control	4.02	2.126
		Experimental	5.34	2.016
Convenience	10. Mobile payment is attractive because I can use it anytime	Control	4.99	1.795
		Experimental	5.53	1.650
	11. Mobile payment limits how many items I have to carry around	Control	5.10	1.779
		Experimental	5.42	1.944
	12. Mobile payment is useful because I don't always have to remember to bring my wallet	Control	5.39	1.572
		Experimental	5.81	1.664
Intention to Adopt	13. I am likely to use mobile payment in the future	Control	5.46	1.721
		Experimental	6.04	1.609
	14. I plan to use mobile payment when the opportunity arises	Control	5.11	1.862
		Experimental	5.76	1.773
	15. I plan to use mobile payment instead of cash or card	Control	4.02	1.936
		Experimental	5.34	1.802

Table 18 - Survey data, mobile payment section

5.7.1 Remarkable Items

It is evident from Table 18 that there are fairly high standard deviations, which means the responses are quite scattered. Two questions especially show high standard deviations with values exceeding 2: “Mobile payment is attractive because the phone is always with me” and “Mobile payment does not fit well with how I like to pay” (both part of Compatibility).

Additionally, whereas almost all means exceed a value of 4, one item only scores 3.42: The control group answers to “Mobile payment provides me with better overview of my expenditure”. When comparing this result to the result of the experimental group, there is a very large difference: A difference in means of 1.9. This is discussed in the following chapter.

5.7.2 Open-Ended Questions: Comment Box

At the bottom of each Survey Monkey section page a comment box offered respondents the opportunity to comment on the answers. In total, 37 respondents left minimum one comment; 20 in the control group and 17 in the experimental group.

There were five areas that dominated the comments:

1. It is already easy and quick to pay with Dankort and mobile payment does not appear to make this easier or quicker (5 comments)
2. Concerns of safety and security (5 comments)
3. The battery of the smartphone runs out (9 comments)
4. People still need to bring wallets for ID, etc. (5 comments)
5. Respondents unsure about answering, as they have not tried the mobile payment solution (5 comments).

A list of the comments can be found in appendix 4.

5.8 Sub Conclusion

This chapter has presented the experimental survey and the findings from this.

It was shown that the population sample was highly homogenous in relation to the questions posed about demography and payment behavior. Results from independent t-tests showed that there are no statistically significant differences between the control group and the experimental group, which indicates that the internal validity is appropriate for an experimental design. Secondly, the data from the survey section about mobile payment adoption was presented. The data reveals differences in means between the control group and experimental group. These differences will be analyzed in the following chapter.

6 Results

Differences in Means • Aggregated Results • Hypotheses Status • Sub Conclusion

This section presents the results from the survey section about Perceived Usefulness, Perceived Ease of Use, Compatibility, Convenience, and Intention to Adopt. The hypotheses will be addressed by investigating the differences between the control group and the experimental group by means of statistical analyses comparing the means of the two groups. Additionally, the effect of Value Added Services on the parameters, the Attitude Towards Use, and the Intention to Adopt is calculated using Pearson's Correlation.

The first section presents the differences in means of all the 15 questions posed in the survey, i.e. all questions for the four parameters and the Intention to Adopt.

Following this, section two combines the individual questions into their respective measurement items, i.e. the three means for questions asking about Perceived Usefulness are combined into one mean that shows the overall score of Perceived Usefulness, etc. Furthermore, the four parameters are combined to show the overall findings of Attitude Towards Use.

Section three runs independent t-tests on the aggregated data, to determine the extent to which the differences in means between the control group and then experimental group are statistically significant. Additionally, Pearson's Correlation is used to determine the effect of Value Added Services on each of the measurement items. These calculations serve to address the hypotheses and determine the effect size.

Only statistical calculations relevant to the research are presented in this chapter. See appendix 5 for the full calculations.

6.1 Differences in Means

As seen in the previous chapter, the means are generally higher for the experimental group than the control group. There is only one question ("Learning to use mobile payment is difficult for me") in which the control group has a higher mean (6.17) than the experimental group (6.15) but the difference is so small that it is close to negligible. In fact, all the

differences in means in Perceived Ease of Use questions are highly similar, indicating that VAS does not make much difference.

To understand whether the differences in means are significant, an independent t-test was run on the data. The results are presented in the below Table 19. As mentioned earlier, the significance level is set at 95% so any p-value exceeding 0.05 is considered non-significant.

Parameter	Question	Mean difference	**Sig. (2-tailed), *p***	**Statistically significant?**
Perceived Usefulness	Mobile payment makes paying easier	-0.550	0.014	Yes
	Mobile payment provides me with better overview of my expenditure	-1.934	0.000	Yes
	Mobile payment makes paying more efficient	-0.797	0.001	Yes
Perceived Ease of Use	It is unclear to me how I should interact with mobile payment	-0.027	0.900	No
	It is easy to perform the steps required to use mobile payment	-0.166	0.391	No
	Learning to use mobile payment is difficult for me	0.020	0.893	No
Compatibility	Mobile payment fits my daily routine tasks	-0.694	0.004	Yes
	Mobile payment is attractive because the phone is always with me	-0.872	0.003	Yes
	Using mobile payment does not fit well with how I like to pay	-1.324	0.000	Yes
Convenience	Mobile payment is attractive because I can use it anytime	-0.535	0.028	Yes
	Mobile payment limits how many items I have to carry around	-0.329	0.208	No
	Mobile payment is useful because I don't always have to remember to bring my wallet	-0.418	0.067	No
Intention to Adopt	I am likely to use mobile payment in the future	-0.583	0.013	Yes
	I plan to use mobile payment when the opportunity arises	-0.643	0.012	Yes
	I plan to use mobile payment instead of cash or card	-1.324	0.000	Yes

Table 19 - Significance of difference in means, all questions

From the above Table 19, it is evident that a large proportion of the differences in means are statistically significant. All question items measuring the parameters Perceived Usefulness, Compatibility, and Intention to Use are significant. One of the questions measuring Convenience is significant, whereas the two others are not (note, however, that the

significance is 2-tailed even though the hypotheses are directional, which indicates that if the 1-tailed significance was used the difference would be significant, as *p* is then halved). Perceived Ease of Use reveal very small differences in means and accordingly the p-value shows non-significance.

6.2 Aggregated Results

In order to see the overall findings of the parameters and the Intention to Use mobile payments, this section presents the aggregated results, i.e. the means of the three questions measuring their respective items.

The first section presents the results for Intention to Adopt. The second section shows the four parameters as well as these combined into Attitude Towards Use.

6.2.1 Intention to Adopt

Table 20 shows the aggregated results for Intention to Adopt.

Parameter	Group	Mean	Std. Deviation
Intention to Adopt	Control	4.863	1.700
	Experimental	5.713	1.644

Table 20 - Aggregated results, Intention to Adopt

The mean for the experimental group is remarkably higher than for the control group. The standard deviations are very similar, which shows a similar distribution for the two groups.

6.2.2 Four Parameters and Attitude Towards Use

Table 21 shows the aggregated results for Perceived Usefulness, Perceived Ease of Use, Compatibility, and Convenience.

Parameter	Group	Mean	Std. Deviation
Perceived Usefulness	Control	4.441	1.428
	Experimental	5.535	1.484
Perceived Ease of Use	Control	5.504	0.964
	Experimental	5.562	0.860
Compatibility	Control	4.450	1.601
	Experimental	5.414	1.602
Convenience	Control	5.158	1.444
	Experimental	5.585	1.434

Table 21 - Aggregated results, four parameters

The means are generally higher for the experimental group than the control group. The standard deviations are very similar for the two groups, which shows a similar distribution of answers. An interesting aspect is that the standard deviations for Perceived Ease of Use is much lower than for the remaining factors, which shows a more central distribution, indicating that the respondents tend to agree more on the answer.

As the four parameters together measure the Attitude Towards Using mobile payments, these are combined in the below Table 22.

	Group	Mean	Std. Deviation
Attitude Towards Use	Control	4.888	1.142
	Experimental	5.524	1.111

Table 22 – Aggregated results, Attitude Towards Use

Again, the aggregated results show higher means for the experimental group than the control group. The standard deviation is fairly low (compared to the non-aggregated table).

6.3 Hypotheses Status

In this section, the hypotheses are addressed through a significance test of the difference in means. Additionally, the effect of VAS on the respective measurement item is measured using Pearson's Correlation.

In Table 23, the status of the hypotheses are shown as determined by the p-value of the t-test, as well as the effect size measured by Pearson's Correlation.

Hypothesis	Attributes	Mean difference	Sig. (2-tailed), *p*	Hypothesis status	Effect, *r*	Effect*
H1	VAS→ Intention to Adopt	-0.850	0.000	Supported	0.247	Small
H2	VAS→ Attitude Towards Use	-0.636	0.000	Supported	0.273	Small
H2a	VAS→ Perceived Usefulness	-1.094	0.000	Supported	0.353	Medium
H2b	VAS→ Perceived Ease of Use	-0.058	0.654	Not supported	0.032	None
H2c	VAS→ Compatibility	-0.963	0.000	Supported	0.289	Small
H2d	VAS→ Convenience	-0.427	0.035	Supported	0.147	Small

Table 23 - Hypotheses status

* As determined by Cohen's (1969) suggestions about what constitutes a large or small effect, where >0.1 shows a small effect, >0.3 shows a medium effect, and >0.5 shows a large effect (Field, 2012),

Intention to Adopt appears to increase with VAS with a significance of difference in means of p=0.000 and an effect size of r=0.247, and thus hypothesis 1 is supported. Additionally, there is support for hypothesis 2, with a significance of p=0.000 and an effect-size of 0.273. Further, in support of hypothesis 2a, the results show a statistically significant difference in means (p=0.000) and an effect size of r=0.247. In fact, Perceived Usefulness is the parameter where VAS appear to have the biggest effect. In contrast to this, there is no statistically significant difference in means of Perceived Ease of Use (p=0.654) and likewise the effect is close to none (r=0.032). Consequently, hypothesis 2b is not supported. However, hypothesis 2c is supported, with a significance of 0.000 and an effect size of r=0.298, which shows that VAS have a medium-sized effect on Compatibility. Finally, the expected positive relationship between VAS and Convenience is supported with p=0.035 and an effect size of r=0.147, thus hypothesis 2d is supported.

6.4 Sub Conclusion

The results presented in this chapter show that the hypotheses for Perceived Usefulness, Compatibility, Convenience, Attitude Towards Use, and Intention to Adopt are supported. It has also been shown that there is an effect between Value Added Services and these five items.

On the contrary, there is no support for the hypothesis in about Perceived Ease of Use. Similarly, there is no effect between Value Added Services and Perceived Ease of Use.

These results are illustrated in Figure 9.

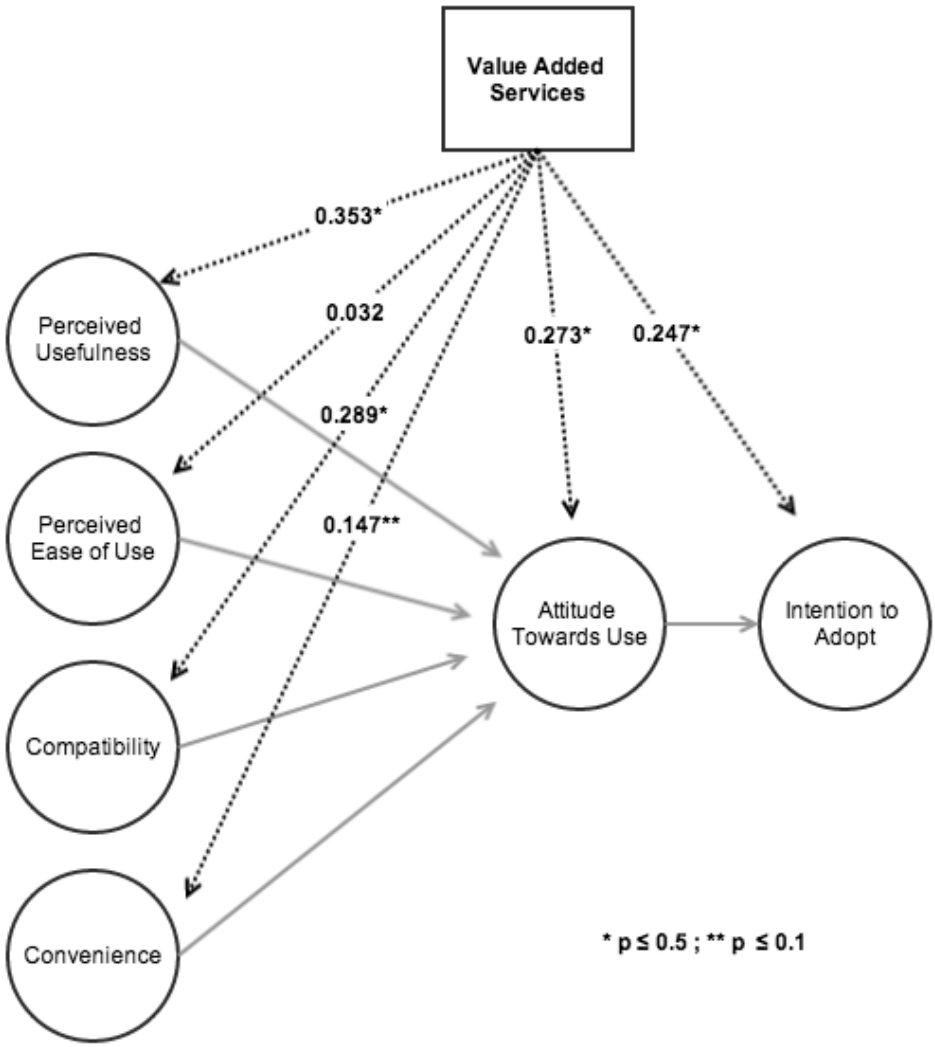


Figure 9 - Results

7 Discussion

Individual Findings • Academic Contribution • Business Implications

This chapter discusses the results presented in the previous chapter. It is divided into two parts:

The first part discusses the findings for each hypothesis in detail, starting with the four parameters followed by Attitude Towards Use, and finishing with the Intention to Adopt. Each of these sections section begins with a brief mentioning of the results, then addresses surprising or remarkable findings (if any), and then discusses the overall findings in relation to existing literature. Finally, the hypotheses are addressed and relevance of the findings to the research question in terms of effect on consumer intention to adopt is explained.

The second part discusses the overall findings in terms of academic contribution and business implications.

7.1 Individual findings

7.1.1 Perceived Usefulness

Perceived Usefulness measures "the degree to which a person believes that using a particular system would enhance his or her performance in payment related tasks" and was shown to be affected by VAS.

One particular result out of the three questions stands out: The extent to which mobile payment provides respondents with a better overview of expenditure, to which the control group answered 3.42 whereas the experimental group answered 5.35 – a remarkable difference of 1.93. This result emphasizes the focus group discussion around the importance of being able to maintain an expenditure overview, which the focus group participants agreed that VAS could provide. Additionally, Ching and Hayashi (2008) find that, "*the payment attributes most likely to encourage use of mobile payments are convenience and ability to monitor finances and control spending*" (Hayashi, 2008:60), which suggests that the "ability to monitor finances and control spending" is one of the most important drivers of mobile payment adoption.

Additionally, the extent to which mobile payment makes paying both easier and more efficient revealed significant differences in means. In support of this, the focus group discussed that digitalizing VAS would make the process both faster, easier and more efficient, as they would not need to exchange physical items with the salesclerk. Interestingly, considering the results from the control group and the comments from the experimental group, mobile payment in itself does not seem to be perceived as much easier or more efficient. A few of the respondents wrote in the optional comment box that they did not think that paying with a mobile phone necessarily was easier than paying with a credit card. One person commented that in either case, s/he would need to locate the payment item and bring it in contact with the payment terminal. A few others commented that the credit card is easy to carry and they always have it with them. These comments come from respondents from both the control group and the experimental group.

Perceived Usefulness is the item that sees the highest effect of Value Added Services. An explanation for this may be found in the literature review, in which it was briefly mentioned that the other three parameters affect Perceived Usefulness. The high effect is therefore likely to be a result of VAS' effect on these other three parameters further increasing the effect on Perceived Usefulness.

The significantly higher mean score in the experimental group supports the hypothesis, *"Value Added Services positively affect the Perceived Usefulness of mobile payments"*. This finding is important as it was found in the literature review that Perceived Usefulness affects the Intention to Adopt. This means that VAS positively affect Intention to Adopt through Perceived Usefulness.

7.1.2 Ease of Use

The results revealed that VAS have no effect on Perceived Ease of Use.

Both the control group and the experimental group appear to believe that using mobile payment would be fairly easy. All three questions scored higher than 5, and the total score was 5.504 and 5.562 for the control group and the experimental group, respectively. Although this thesis hypothesized that VAS would complicate the payment procedure and therefore negatively affect the Perceived Ease of Use, it appears that the respondents did not think so. The high score may be explained by the fact that the sample was an age group that tends to be

innovative and tech-savvy (Dansk Statistik, 2011). The vast majority of the respondents are smartphone users, and are therefore likely to be very comfortable with using these kinds of features. In support of this explanation, Kim (2009) found that Perceived Ease of Use of mobile payments scored significantly higher among early adopters than late adopters, and that previous related knowledge is crucial to the respondent's Perceived Ease of Use. Additionally, Hayashi (2009) describes how setting up a mobile payment system and learning how to use it will be "*much less burdensome for some consumers than others*" (Hayashi, 2009:10), and when combining this with Kim's (2009) findings and this thesis' focus on smartphone users aged 18-35, it makes sense that Perceived Ease of Use scores high.

The lack of statistically significant difference between the control group and the experimental group shows that the hypothesis, "*Value Added Services negatively affect the Perceived Ease of Use of mobile payments*", is not supported. VAS therefore do not affect consumer Intention to Adopt mobile payment through this parameter.

7.1.3 Compatibility

Compatibility measures the "degree to which mobile payment is perceived as consistent with the existing values, past experiences, and needs of potential adopters". The statistically significant effect shows that VAS lead to higher perceived Compatibility of mobile payments; a finding that is in line with Mallat's (2007) observation: "*Mobile payments were also considered advantageous because people carry mobile phones with them most of the time and the phone is therefore available in most situations*" (Mallat, 2007:421). While Mallat (2007) studies mobile payments alone, the fact that the mobile phone also contains VAS increases this perceived Compatibility, as even more items will then be available in most situations.

The difference between means is interesting because Compatibility is often found to be one of the most important factors of Intention to Adopt: "*We find that perceived compatibility has the greatest impact on the intention to use mobile payment services*" (Schierz et al., 2010:215), which means it is an important parameter for measuring consumer Intention to Adopt mobile payments.

As argued in the literature review, mobility (Schierz et al., 2009) is an important element of Compatibility, as consumers are becoming more mobile and are therefore demanding solutions to fit this lifestyle. This is reflected in the result for Compatibility: Mobile payments

with VAS means that VAS are always readily available to the consumer (provided that they have their phone with them) and this is more compatible than traditional payment methods, for which people tend to forget their loyalty cards and coupons (focus group). This view is supported by a survey respondent's comment: "*The fact that it may contain information on loyalty cards etc. is especially good. I always forget to get my discount and bring these cards, even though I have several*" (anonymous). Additionally, the prospect that receipts can be sent automatically and stored in their phones means that consumers do not have to worry about warranties (focus group). As Accenture explains: "*Today's consumers expect their smartphones to improve and simplify their lives*" (Accenture, 2013:9). Furthermore, Kim (2009) states that, "*many believe profoundly in the benefits of technology, but only when technology is premised on the intention to make life easier for people and to ameliorate the difficulty of common tasks*" (Kim, 2009:314). Digitalizing VAS means that these common tasks are made easier and this is likely to explain the difference in means between the control group and the experimental group.

The statistically significant difference in means shows support for the hypothesis, "*Value Added Services positively affect the Compatibility of mobile payments"*, and the effect size shows that VAS positively affect Compatibility, which in turn affects consumer Intention to Adopt mobile payment.

7.1.4 Convenience

Convenience is defined as "the effort consumers spend on obtaining the payment service" and is in the literature cited as an important driver of payment adoption: Ching and Hayashi (2008) find that, "*overall, Comfortable and Convenient seem to be the most crucial perception variables that influence consumer payment choices*" (Ching and Hayashi's, 2008:21). Therefore, the statistically significant difference in mean between the control group and the experimental group is very interesting.

Although the aggregated mean of Convenience is statistically significant, the difference in means of two out of three of the questions were not statistically significant. There appears to be no difference in the answers to "mobile payment limits how many items I have to carry around". This is surprising as digitalized VAS means that consumers do not have to carry them around physically, which was therefore expected to reveal a high difference in means. Also, the focus group emphasized especially this point as a significant feature of VAS. Furthermore,

the difference in means for, "mobile payment is useful because I don't always have to remember to bring my wallet" is non significant. Again, this is unexpected as the focus group also deemed this an important factor of VAS, as mobile payment with VAS limits the need for a wallet.

An explanation for these unexpected results may be found in the comments to the survey. A few people mentioned that, despite moving payment (and VAS) onto the phone, they would still need to bring their wallets to carry their ID with them. This suggests that digital identification could be an important VAS to consider. Additionally, a number of respondents mentioned the fact that smartphones quickly run out of battery, in which case they expected that they would need to carry their wallets. The truth, however, is that should an NFC solution become the chosen design for proximity payments, battery is not required as a quick scan of the chip is enough to carry out the payment and VAS registration[13]. This is how a smart card works. This feature was not described to the respondents, however, and may be one of the reasons for the counterintuitive results.

An interesting finding was identified in regards to the question of limiting the amount of carried items. When comparing the means between men (=5.96) and women (=4.72) of the experimental group, the result shows a statistically significant difference between these two groups: Women tend to agree less, which is not surprising considering that women are known to carry more items with them than men. Out of all the survey questions, this is the only one that showed difference between the two genders. The low mean score of women is likely to have affected the results. In fact, when removing female respondents from the sample and testing for significance in difference between the control group and the experimental group, a statistically significant difference shows (p=0.013. See appendix 6). While this finding does not change the overall results of Convenience, it suggests that men and women think differently in terms of what needs to be carried with them, and that men tend to agree that VAS limit the amount of physical items needed.

Despite the small difference in means of the two questions, the aggregated data for Convenience shows a statistically significant effect of VAS on Convenience, which is consistent with the hypothesized effect: *"Value Added Services positively affect the Convenience of mobile*

[13] Provided that the user agrees to make payments without a pin code. Usually, this will be possible up to a certain amount.

payments". Additionally, it was found that there is an effect by VAS on Convenience. Thus, VAS is shown to positively affect Convenience, which in turn positively affects consumer Intention to Adopt.

7.1.5 Attitude Towards Use

Attitude Towards Use is a construct made up of Perceived Usefulness, Perceived Ease of Use, Compatibility, and Convenience, and reflects the results from the four parameters.

According to related findings in previous studies (van Riel et al., 2001), this research found that VAS positively affect the Attitude Towards Using mobile payments, which means that the hypothesis, *Value Added Services will positively affect the attitude towards using mobile payments*, is supported.

A limitation in terms of the use of Attitude Towards Use in this thesis is the fact that no differentiation was made between the effect of the four respective parameters on Attitude Towards Use. It has been shown in existing literature that different parameters affect Attitude Towards Use differently (Kim et al, 2010; Schierz et al., 2009, Dahlberg, 2007)). Therefore, a more detailed analysis could provide weighted effects by the four parameters on VAS, so that they do not all weight the same. However, the Attitude Towards Use still provides a good indication of the total effect of VAS on the four parameters, which is sufficient for this analysis as its purpose is to investigate the effect of VAS on the items of the research model, not investigate the effect of the items on each other.

7.1.6 Intention to Adopt

The difference in means of all three questions related to Intention to Adopt showed to be statistically significant.

Chen (2008) argued that if a company failed to demonstrate the relative advantages of mobile payment to potential users, the new system would be likely to experience a low rate of adoption. The results from the survey support this: Compared to mobile payment alone, mobile payment with VAS is perceived as significantly more Useful, Compatible, and Convent, which indicates that the relative advantage of mobile payment with VAS is higher than compared to mobile payment alone. Chen's argument is not fully supported, however, as the results do not reveal a low Intention to Adopt when VAS are not included, but only that the experimental group shows a significantly higher Intention to Adopt.

An interesting observation when looking at the three questions that together measure Intention to Adopt is that the difference in means is much higher when respondents are asked about their intention to use mobile payment instead of cash or card. In fact, the difference is more than double what it is in the two other questions. On the other hand, it is also the question that scores lowest of the three, both in the control group and the experimental group. Unfortunately, no comments were provided in this section to further elaborate on this result. It is evident from the first two questions that respondents are ready to adopt mobile payments, but this third question shows that they do not seem ready for it to replace cash and card. This appears contradictory, as mobile payment will unarguably replace other payments, as the choice to make a payment with the mobile phone means a choice not to use another type of payment. It is plausible, however, that the respondents understood the question as signifying a replacement of all cash and card payments with mobile payment, which they are not willing to do. Whatever the explanation is, this observation is interesting as it indicates that if VAS are offered, consumers are much more likely to switch their payments to cash and card.

With statistically significant differences in means, the hypothesis, "*Value Added Services will positively affect the intention to adopt mobile payments*" is supported. This result is important as it addresses the research question by showing that VAS do indeed affect consumer Intention to Adopt mobile payments.

7.2 Academic Contribution

This study is to the author's knowledge the first to empirically test the effect of Value Added Services on consumer intention to adopt mobile payments. Much literature was found to investigate mobile payment adoption but none of this discussed the importance of Value Added Services on adoption. However, when looking outside mobile payments, the relationship between supplementary services and adoption has been studied. The amount of literature found was limited though and suggested a need for further research.

Grounded in existing research about mobile payment adoption and the role of supplementary services, the experimental design showed that Value Added Services indeed increase consumer intention to adopt. This has important implications for mobile payment adoption research as it suggests a need to broaden to scope of research to focus not only on the core service - the payment - but also include Value Added Services.

7.3 Business Implications

The findings in this research have implications for businesses providing mobile payment solutions, as it can help them boost the number of users. Value Added Services showed to have a significant effect on the perceived Compatibility, which has proven to be one of the most important drivers of intention to adopt mobile payment (Schierz et al., 2009). The findings imply that companies can increase this highly important parameter by offering Value Added Services and thereby increase adoption rates.

Additionally, while the control group do not appear to find mobile payment much more useful than existing payment solutions, the experimental group rated Perceived Usefulness significantly higher, both in terms of efficiency and easiness, and especially in terms of the ability to maintain an overview of expenditure. Perceived Usefulness is an important factor of Intention to Adopt (Davis et al., 1989), and as Value Added Services positively affect this factor it shows that Value Added Services can play an important role in adoption of mobile payments.

An important aspect is for companies to leave the choice of which Value Added Services to use to the consumers. Shierz (2009) points out that "*industry players are challenged to develop and advertise mobile payment devices and solutions in a way that consumers regard them as well-suited to their individual behavioral patterns*". This aspect is also emphasized by van Riel et al. (2001), who found that when supplementary services are not customized to the target consumer segment, their added value can be limited. Therefore, it is not advisable that a mobile payment solution includes all the possible Value Added Services, but rather that the consumers can select which services to use, for instance when setting up the payment system or in a "VAS marketplace". The finding that women and men disagree about the statement that mobile payment with VAS limit the amount of items needed to be carried around also supports this need for customization, as women perhaps require different VAS than men.

Additionally, each Value Added Service should be customizable by consumers. For instance, when discussing digital receipts, the respondents of the focus group discussed that they only wanted receipts from grocery stores to be saved for one day, but warranties for the full warranty period. Consumers should be able to change settings like these. Similarly, in terms of creating financial overview, Hedman (Pengemagasinet, 2013) suggests a function where consumers immediately before purchase are shown the balance of their account. While this

might be attractive to some consumers, it is likely that many will dislike this option. One of the focus group participants stated that if this function was forced, she would abandon mobile payments. Therefore, it is important that consumers can opt out of this function.

The hypothesized negative effect of Value Added Services on Perceived Ease of Use was rejected. However, the scores for this parameter were rated very high in both the control group and the experimental group. This shows that the respondents are highly comfortable with the idea of utilizing both mobile payment and VAS and that they are not likely to hesitate adoption due to perceived complexity. In this connection, it is important to note that the respondents are of a more tech-savvy population and are therefore likely to be less prone to view technologies as complex (Kim et al., 2010). Should an older age demographic be asked, it is plausible that a different result would be found. This suggests that companies should focus on more tech-savvy consumers for initial adoption. Once these early adopters have taken to the technology, the early and late majorities are likely to join once they see that it works (Rogers, 2003).

8 Conclusion

The aim of this thesis has been to investigate the effect of Value Added Services on consumer intention to adopt proximity mobile payments. This has been done through the development of a research model derived from juxtaposing existing literature about mobile payment adoption and the role of supplementary services. By examining this research model using empirical data collected through an experimental design, the thesis has aimed to answer the following research question:

How do Value Added Services affect consumer intention to adopt proximity mobile payments?

It has been demonstrated that Value Added Services positively affect the Intention to Adopt proximity mobile payments.

This effect has been explained by investigating the factor that determines the Intention to Adopt: Attitude Towards Use. Attitude Towards Use has been defined as the outcome of four parameters, Perceived Usefulness, Perceived Ease of Use, Compatibility, and Convenience. The thesis shown that three of these - Perceived Usefulness, Compatibility, and Convenience - are positively affected by Value Added Services. Therefore, it can be concluded that Attitude Towards Use is positively affected by Value Added Services through their positive effect on these three parameters.

Hence, it can be concluded that Value Added Services have a positive effect on consumer intention to adopt proximity mobile payments and that this effect comes from Value Added Services' effect on Perceived Usefulness, Compatibility, and Convenience. This conclusion is illustrated in Figure 10.

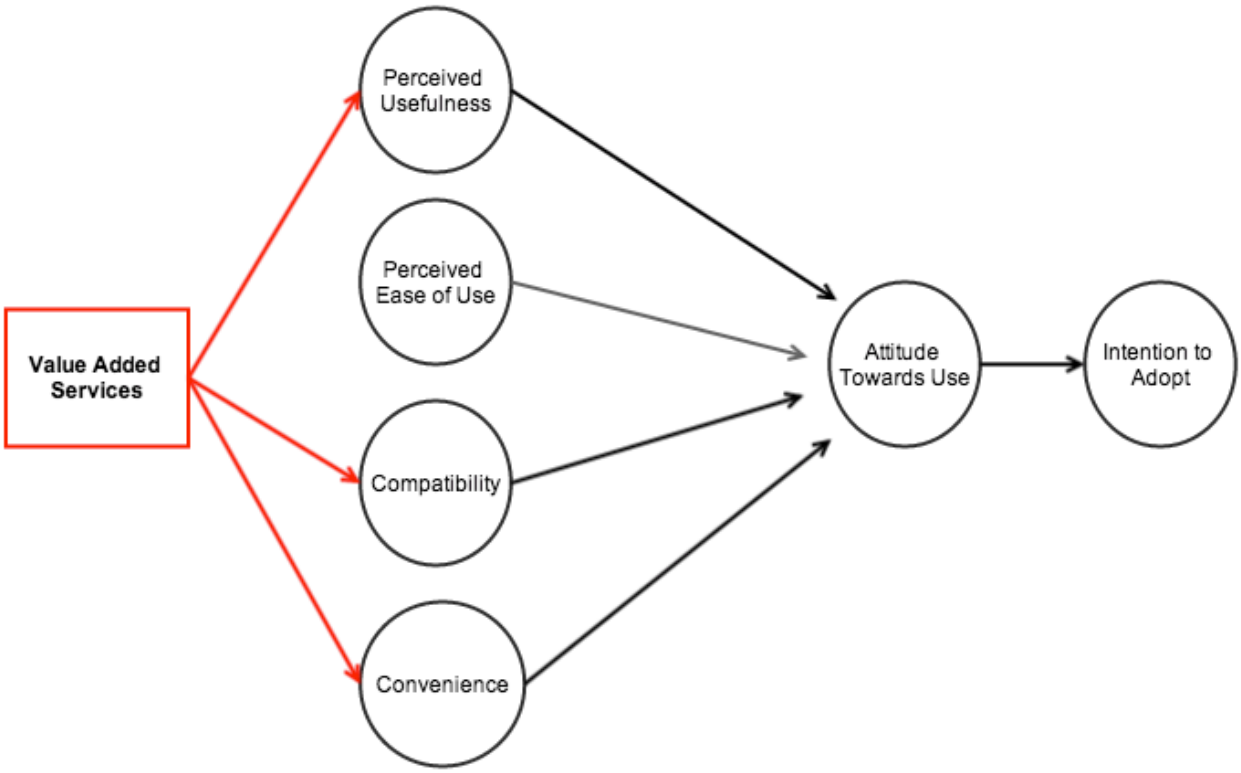


Figure 10 - Conclusion

9 Bibliography

Accenture (2013), "Driving Value and Adoption of Mobile Payments"

Ahn, H. (2011), "A Novel Customer Scoring model to Encourage the Use of Mobile Value Added Services", Experst. Syst. Appl. 11693-11700

Ajzen, I. (1991). The theory of planned behavior. Organizational Behavior and Human Decision Processes, 50(2), 179-211.

Berry, L. L., Seiders, K., and Grewal, D. 2002. Understanding service convenience. *The Journal of Marketing (66)*, 1-17.

Bryman, Alan. *Social Research Methods*. Oxford: Oxford UP, 2012. Print.

Chen, L.D. "A Model of Consumer Acceptance of Mobile Payment,"International Journal of Mobile Communications, 6(1), 2008, pp. 32-52.

Dahlberg, T., Mallat, N. and Öörni, A. Consumer acceptance of mobile payment solutions. In G.M. Giaglis (ed.), mBusiness 2003 – The Second International Conference on Mobile Business, Vienna, 2003, 211–218.

Dahlberg, T., Mallat, N., Ondrus, J., and Zmijewska, A. Past, present and future of mobile payments research: a literature review. Electronic Commerce Research and Applications, 7, 2, 2008, 165–181.

Dansk Statistik (2012), "IT anvendelse i befolkningen"

Davis, F. D., Bagozzi, R. P., & Warshaw, P. R. (1989). USER ACCEPTANCE OF COMPUTER TECHNOLOGY: A COMPARISON OF TWO THEORETICAL MODELS. [Article]. Management Science, 35(8), 982-1003.

Davis, F. D. Perceived usefulness, perceived ease of use, and user acceptance of information technology. MIS Quarterly, 13, 3, 1989, 319–340.

Evans, David S., and Richard Schmalensee. *Paying with Plastic: The Digital Revolution in Buying and Borrowing*. Cambridge, MA: MIT, 2005. Print.

Field, Andy P. *Discovering Statistics Using SPSS: (and Sex and Drugs and Rock 'n' Roll)*. London: SAGE, 2013. Print.

"FDIM." *Danske Medier Research*. N.p., n.d. Web. 30 Nov. 2013.

"Forbrugerrådet (2012) "Test Og Gode Råd Om Forbrug." *Forbrugerrådet: Test Og Gode Råd Om Forbrug.* N.p., n.d. Web. 11 Sept. 2013.

Gartner Group. (2009). Mobile Payment, 2007–2012.

Bryman, Alan. *Social Research Methods*. Oxford: Oxford UP, 2012. Print.

Goyal, A. (2004) "Role of supplementary services in the purchase of credit card services in India", Asia Pacific Journal of Marketing and Logistics, Vol. 16 Iss: 4, pp.36 - 51

Gwinner, Kevin P., Scott R. Swanson, and Brian V. Larson (2008), "Image Transfer in Corporate Event Sponsorship: Assessing The Impact of Team Identification and Event-Sponsor Fit," International Journal of Management and Marketing Research, forthcoming.

Halkier, Bente, 2009: Fokusgrupper, Forlaget Samfundslitteratur, Frederiksberg CXu & Gutierrez, 2006

Hayashi, Fumiko (2012): Mobile Payments: What's in It for Consumers?," unpublished paper, *Mobile Payments' Cashless Utopia Is Not Coming Anytime Soon*. Rep. N.p.: Forrester, 2012. Print.

Xiao, Xiao, Hedman, Jonas and Runnemark, Emma (2013) "*Why Do People Pay the Way They Do: The Case of Cards, Cash, and Internet Banking in the Context of Danish Society*" Forthcoming

IBM (2011), "Mobile payments adoption in developed markets" *lberto Jimenez, Prasanna Vanguri*

Karnouskos S. & Vilmos A., (2004): The European Perspective on Mobile Payments, IEEE Symposium on Trends in Communications (SympoTIC '04), 24 – 26 October 2004, Bratislava, Slovakia.

Keramati, A., Hadjiha, B., Taeb, R., & Mojir, N. (2010). Adoption of electronic payment services by Iranian customers. International Journal of Customer Relationship Marketing and Management, 1(4), 80–97.

Kim, C., Mirusmonov, M., & Lee, I. (2010). An empirical examination of factors influencing the intention to use mobile payment. Computers in Human Behavior, 26(3), 310-322.

Lovelock, Christopher H., and Jochen Wirtz. *Services Marketing: People, Technology, Strategy*. Upper Saddle River, NJ: Pearson/Prentice Hall, 2007. Print.

López-Nicolás, C., Molina-Castello, F. J. & Bouwman, H. (2008). An assessment of advanced mobile services acceptance: Contributions from TAM and diffusion theory models. Information & Management 45(2008), 359-364.

Mallat, N., Rossi, M., Tuunainen, V. K., & Öörni, A. (2009). The impact of use context on mobile services acceptance: The case of mobile ticketing. Information & Management, 46(3), 190-195. doi: DOI: 10.1016/j.im.2008.11.008

"Mobile Payments Today | Technology, Trends & Insights MobilePaymentsToday.com. " *Mobile Payments Today | Technology, Trends & Insights | MobilePaymentsToday.com*. N.p., n.d. Web. 30 Nov. 2013.

Naipaul & H. G. Parsa (2000) Supplementary Services as a Differentiation Strategy, Journal of Quality Assurance in Hospitality & Tourism, 1:1, 67-80,

Nationalbanke., "Payment Systems in Denmark" (2007)

Nysveen, H., Pedersen, P., E., & Thorbjørnsen, H. (2005). Intentions to Use Mobile Services:

Antecedents and Cross-Service Comparisons. [Article]. Journal of the Academy of Marketing Science, 33(3), 330-346. doi: 10.1177/0092070305276149

Pousttchi and D. Wiedemann. (2008, October) What influences consumers' intention to use mobilepayments?. [Online]. Available: http://classic.marshall.usc.edu/assets/025/7534.pdf

Rogers, E. M. Diffusion of Innovations. Free Press, New York, NY, 1995.

Seiders, K., Voss, G. B., Godfrey, A. L., and Grewal, D. 2007. SERVCON: development and validation of a multidimensional service convenience scale.*Journal of the Academy of Marketing Science*, (*35*:1), 144-156.

Sheth, J. N., Newman, B. I., and Gross, B. L. 1991. Why we buy what we buy: a theory of consumption values. *Journal of business research*, *22*(2), 159-170.

Schierz, P. G., Schilke, O., & Wirtz, B. W. (2010). Understanding consumer acceptance of mobile payment services: An empirical analysis. Electronic Commerce Research and Applications, 9(3), 209-216. doi: DOI: 10.1016/j.elerap.2009.07.005

Shin, D. (2010). Modeling the Interaction of Users and Mobile Payment System: Conceptual Framework. International Journal of Human-Computer Interaction, vol. 26, no. 10, pp. 917-40.

Venkatesh, V., Morris, M.G., Davis, G.B. and Davis, F.D. (2003). User acceptance of information technology: Toward a unified view, MIS Quarterly, 27(3), 425-478

van Riel, A., Liljander, V. and Jurriens, P. (2001), "Exploring consumer evaluations of e-services: a portal site", International Journal of Service Industry Management, Vol. 12 No. 3/4,pp. 359-77

XU, G. and GUTIERREZ, J., "An exploratory study of Killer Applications and Critical Success Factors in M-Commerce", Journal of Electronic Commerce in Organizations, Vol. 4, No. 3, 63-79, 2006

Appendixes

Appendix 1 – Focus Group

Focus group participants

Name	Age	Education	Occupation
Linisha Palm	27	CBS	Self-employed
Stine Rasmussen	28	CBS	Consultant analyst
Naima Yasin	26	CBS	Student
Mia Nielsen	27	CBS	Human Resources
Thomas Andersen	26	KU	Student
Christian Andersen*	29	ITU	Consultant

*Was sick so did not participate

Focus group guide

Introduktion

- Speciale om mobilbetalinger og konceptet bag en mobile wallet
    - Forklar begge
- I har sikkert hørt om betalinger med mobilen – mobile wallet vil man kunne flytte næsten alting der ligger i den fysiske pung over til den elektroniske pung
- Fokusgruppe for at forstå motivationer og tanker bag brug af mobilbetalinger og disse ekstra services
- Jeg vil fokusere på tre services og forklare jer hvordan de vil blive brugt. Hvis I ser andre funktioner eller har spørgsmål til konceptet må I endelig sige til.

Baggrundsinformation

- Navn
- Alder
- Hvilke af følgende mobilbetalingsløsninger har du prøvet? Prøvet en enkelt gang – føler at jeg har rimeligt godt kendskab
    - Mobile Pay
    - Swipp
    - Bankoverførsel på mobil
    - Sms betaling
    - App betaling (f.eks. mobil billetter fra DSB)
- Kunne I på nuværende tidpunkt være interesserede i at bruge en digital wallet/betale med jeres mobiltelefon?
- Hvilke af følgende statements passer bedst på dig?
    - Early adopter
    - Late adopter

Mobilbetaling

App, sms, online via sms, NFC.

Functional

- Hvad ser I af fordele og ulemper ved mobilbetalinger?
- Hvilke behov ser du dette udfylde?

Social

- Synes I at det siger noget om folk der vælger at bruge mobilbetalinger?
- Hvis I tænker på jeres omgangskreds – hvordan ser I deres brug af dette og hvordan tror I at de ser dit brug af dette?
- Tror I at det er noget jeres omgangskreds vil bruge?

Emotional
- Hvilke følelser associerer i med tanken om at udføre betalinger med jeres mobiltelefon?
- Når jeg nævner muligheden for at lave disse mobilbetalinger – hvilke følelser giver det jer så?
    - E.g. Lettelse ved tanken om ikke at skulle huske at gemme kvitteringer

Epistemic
- Når jeg nu fortæller jer om denne her digitale løsning, så er det jo noget nyt ift. hvad man kan i dag. Hvad tænker I om ikke at have prøvet det før?
- Gør det jer nysgerrige?
- Hvis nu I havde muligheden for at prøve det før alle andre, ville I så gøre det?

Conditional
- Under hvilke forhold og i hvilke sammenhæng kunne I forestille jer at bruge denne her service?
- Er der nogle sammenhæng hvis I ikke kunne forestille jer at bruge det?

Opbevaring af kvitteringer
Sendes automatisk ved køb med mobiltelefon, kan sendes til telefon af forhandler, kan scannes med mobiltelefon. Digitale kvitteringer er juridisk gældende, også ift. garanti på køb.
Det vil muliggøre at I kan søge efter specifikke kvitteringer baseret på dato, købssted, beløb, og lignende.

Functional
- Hvad ser I af fordele og ulemper i at kunne gemme kvitteringer digitalt?
    - Evt. ift. alternativet at gemme dem fysisk
- Hvis jeg nu fortæller jer at det vil koste penge at bruge disse, hvad tænker I så?
    - Hvordan skulle en prismodel se ud?
- Reliability

Social
- Synes I at det siger noget om folk der vælger at bruge denne funktion?
- Hvis I tænker på jeres omgangskreds – hvordan ser I deres brug af dette og hvordan tror I at de ser dit brug af dette?
- Tror I at det er noget jeres omgangskreds vil bruge?

Emotional
- Når jeg nævner muligheden for at gøre dette – hvilke følelser giver det jer så?
    - Lettelse ved tanken om ikke at skulle huske at gemme kvitteringer
- ….

Epistemic
- Når jeg nu fortæller jer om denne her digitale løsning, så er det jo noget nyt ift. hvad man kan i dag. Hvad tænker I om ikke at have prøvet det før?
- Gør det jer nysgerrige?
- Hvis nu I havde muligheden for at prøve det før alle andre, ville I så gøre det?

Conditional
- Under hvilke forhold og i hvilke sammenhæng kunne I forestille jer at bruge denne her service?
- Er der nogle sammenhæng hvis I ikke kunne forestille jer at bruge det?

Loyalitetskort
I en digital wallet vil I kunne gemme loyalitetskort på telefonen. Der er her tale om to former for loyalitetskort – punch cards som I kender fra caféer, point kort som I kender fra flyselskaber.
Pointene vil blive automatisk registreret når I betaler med jeres mobiltelefon. (I vil så enten skulle åbne loyalitetskortet og vise det til ekspedienten eller det vil blive automatisk registreret).

Functional
- Hvad ser I af fordele og ulemper i at kunne gemme loyalitetskort digitalt?
    - Evt. ift. alternativet at have dem fysisk?
- Hvis jeg nu fortæller jer at det vil koste penge at bruge disse, hvad tænker I så?
    - Hvordan skulle en prismodel se ud?

Social

- Synes I at det siger noget om folk der vælger at bruge denne funktion?
- Hvis I tænker på jeres omgangskreds – hvordan ser I deres brug af dette og hvordan tror I at de ser dit brug af dette?
- Tror I at det er noget jeres omgangskreds vil bruge?

Emotional

- Når jeg nævner muligheden for at gøre dette – hvilke følelser giver det jer så?
    - Lettelse ved tanken om ikke at skulle huske at nævne loyalitetskort
- ….

Epistemic

- Når jeg nu fortæller jer om denne her digitale løsning, så er det jo noget nyt ift. hvad man kan i dag. Hvad tænker I om ikke at have prøvet det før?
- Gør det jer nysgerrige?
- Hvis nu I havde muligheden for at prøve det før alle andre, ville I så gøre det?

Conditional

- Under hvilke forhold og i hvilke sammenhæng kunne I forestille jer at bruge denne her service?
- Er der nogle sammenhæng hvis I ikke kunne forestille jer at bruge det?
-

Vouchers/kuponer

I den digitale pung vil man kunne gemme sine vouchers og kuponer. Selvom det er to lidt forskellige koncepter skal I bare tænke på dem som et værdibevis der giver rabat f.eks. 20% på alt i H&M, eller giver jer noget gratis, f.eks. kom ind i H&M og hent et par gratis strømper med denne voucher. Det kan også være i sammenhæng med købte Groupon vouchers.

Kombineret med GPSen i jeres smartphone vil den digitale pung kunne minde jer om at I er i nærheden af en butik hvortil I har en kupon. Ligeledes, vil I kunne få tilsendt midlertidigt gældende vouchers og kuponer til butikker i befinder jer i nærheden af.

Functional

- Hvad ser I af fordele og ulemper i at kunne gemme kuponer/vouchers digitalt?
    - Evt. ift. alternativet at have dem fysisk?
- Hvis jeg nu fortæller jer at det vil koste penge at bruge disse, hvad tænker I så?
    - Hvordan skulle en prismodel se ud?

Social

- Synes I at det siger noget om folk der vælger at bruge denne funktion?
- Hvis I tænker på jeres omgangskreds – hvordan ser I deres brug af dette og hvordan tror I at de ser dit brug af dette?
- Tror I at det er noget jeres omgangskreds vil bruge?

Emotional

- Når jeg nævner muligheden for at gøre dette – hvilke følelser giver det jer så?
    - Lettelse ved tanken om ikke at skulle huske at nævne loyalitetskort
- ….

Epistemic

- Når jeg nu fortæller jer om denne her digitale løsning, så er det jo noget nyt ift. hvad man kan i dag. Hvad tænker I om ikke at have prøvet det før?
- Gør det jer nysgerrige?
- Hvis nu I havde muligheden for at prøve det før alle andre, ville I så gøre det?

Conditional

- Under hvilke forhold og i hvilke sammenhæng kunne I forestille jer at bruge denne her service?
- Er der nogle sammenhæng hvis I ikke kunne forestille jer at bruge det?

Summary

- Efter vi har været det her igennem, hvad er jeres tanker om digital wallet/mobilbetalinger?
    - Vil I bruge det?
- Hvilke services synes I lyder mest interessante?

Focus group notes

Mobile payments

Functional value

- Altid telefon med sig
- Visa electron ikke hæve penge
- Telefoner løber tør for batteri
- Behøver ikke hæve penge
- Svært at forstå, det er ikke standardiseret – der er nogle butikker, der tager mobile app, andre der ikke gør
- Sikkerhedsissue – alle kan stjæle telefon, og så er den åben (ved ikke at der kan tilvælges pinkode)
- Dankort er en vane, tager automatisk dankortet frem
- Ikke dækning for 3g
- Instant resultat

Social value

- Tænker hvor smart og nemt om andre, der bruger det
- "Gud de har fanget en tendens og kastet sig ud i det" (L)
- Naima: Vente til mange andre der bruger det, ift. sikkerhed. Mindre risiko
- Alle andre bruger det, derfor er jeg nødt til det- Det forventes at jeg bruger MobilePay
- Indflydelsesrige mennesker bruger dette, folk jeg ser op til (L) – folk, der har reflekteret over hvad de gør
-

Emotional value

- Kan godt lide at se hvor mange penge jeg har i hånden (N). Vil få endnu mere out of control følelse end ved dankort
- Følelse af kontrol
- Manglende overblik ved mobilbetalinger, kræver flere apps på telefonen, krævende
- Hader at bede om penge, hader "du skylder mig" – flov over at sige "du skylder mig 20kr" (L) – MobilePay løser dette
- Negativ følelse ved at bede andre om penge (P2P)
- Sikkerhed ift. at give børn penge på mobiltelefonen i stedet for kontanter (S)
- Det sikre i ikke at gå rundt med kontanter (S)
- Betalinger skal bare fungere – de påvirker os ikke følelsesmæssigt, kun hvis det pludselig ikke virker, så giver det negative følelser

Epistemic

- Mia vil gerne prøve MobilePay fordi alle snakker om det – men kun fordi hun ved at det er afprøvet og fungerer
    - Prøver ting af for at se om det gør hendes liv lettere, hvis det ikke fungerer efter et par gange, dropper det
    - Men først når det er afprøvet af omgangskreds
- Ikke bange for sikkerhed, især i DK stor tiltro til sikkerhed (L)
- First mover model, L hører til first mover og ser det som værende sjovt at prøve
- N: Det er ikke sjovt at være den første, bruger fax som eksempel. Vil ikke bruge tingene før alle andre bruger det
-

Conditional value

- Aldrig bruge i byen, store skærm viser for let kode. I forvejen svært at skjule kode
- I byen hæver Mia penge for at kunne styre sit forbrug og have et overblik
- Sociale situationer hvor man lægger ud for ting, skal bede om penge

- Det tager for lang tid med dankort
- Sociale situationer, hvor man slipper for at bede om penge
- Når man er ude at handle,
- Større følelse af sikkerhed ved brug af mobiltelefon på festival end at gå rundt med kontanter (problem med batteriliv)

Kvitteringer

Functional

- Naima har to store kasser med kvitteringer, intet overblik, blækket bliver smattet, datoen er utydelig.
    - Digital kvitteringer: Sortering, overblik, automatisk sletning
- Hvis kvitteringer blev udbudt i forbindelse med NFC ville det overbevise om at bruge NFC (S) "hvis det med kvitteringer fungerede så ville jeg tvinge mig selv til at bruge det der NFC"
- Eksisterende tiltag gider de ikke prøve da man selv automatisk skulle gøre ting
- Gider ikke skulle tage billeder af det for at lægge det på telefonen
- Gemmer altid garantibevis kvitteringer
- Mindre papirspild

Social value

- Ville mere tænke noget om folk, der ikke bruger det (S) – ville ikke kunne forstå at de ikke bruger det
- Man ser ikke andre folk bruge det, så det sociale er mindre relevant

Epistemic

-

Emotional

- Sikkerhed, tryghedsfornemmelse ved at købe ting (ift. garanti)
- Ikke tænke over udløbsdatoer, etc.
- Mindre bekymring
- Passer nogle gange ekstra godt på ting da N ikke har beholdt garantibeviset
- Intet papirspild
-

Conditional

- Kan bruges i alle situationer
- Gemme kvitteringer i x antal dage
- Mest interesseret i garantibeviser
- Nogle er uinteresserede i at beholde kvitteringer i byen, andre ikk.

Kvitteringer ændrer syn på mobilbetalinger generelt, til meget positivt

Loyalitetskort
(alle har loyalitetskort)

Functional value

- Har mange kort de altid glemmer. Resulterer i ikke opnåede point, eller at have ti kort til en butik (punch cards)
- Vil gerne bruge kort hvis det kan stores på mobilen
- "Der er ikke plads i min pung" (N) sagt ja til Matas pga. lille keychain
- Glemmer ofte loyalitetskort
- Vil ikke have 12 separate kort, det hele skal samles
- Det skal samles, hele løsning skal være integreret. Hvis der skal downloades app for hver butik vil det være ufunktionelt og blive påtænkt som dårligt. Simplicity is key

Social value

- Refer a friend (L)

- Status: folk vil hellere have loyalitetskort til "cool" steder, og feks ikke McD. Dette vil kunne undgås med mobilbetalinger

Følelser
- Pinligt at stå og bede om stempler på kaffe
  - Sociale akavethed, der kan undgås
- I DK er det pinligt at være kupon og loyalitetsbruger, i USA er man stolt over det. Dette kan undgås ved automatisk brug
- Øget merværdi, får mere ud af det
- Skabe bedre forhold til butik
- Hemmelig loyalitetskort, ingen ved det hvis det er automatiseret
- Irriterende at blive spurgt alle stedet

Epistemic value
- Intet tab at se
-

Conditional
- Vil kun bruge loyalitetskort i dyre butikker (N)
- Vouchers som loyalitetspoint er uattraktivt
- Vil sige ja til det fleste – stedet hvor man kommer i hvert fald en gang om måneden, og køber noget der koster mere end 50kr
- Frekvens er key, vil ikke skulle holde styr på for mange medlemskaber
-

Loyalitetskort gør mobilbetalinger mere attraktive såfremt det ikke komplicerer ting. Mia synes ikke at det gør mobilbetalinger mere attraktiv ift. Dankort, men omvendt vil hun måske overveje at bruge loyalietskort hvis hun begyndte at bruge mobilbetalinger

Meget fokus på simpelhed: Sign up skal gøres med et klik, samme med sign out. Gider ikke skulle skrive på et stykke papir. Bruger iTunes one-click sign in som eksempel.
Intet problem med at opgive personlige oplysninger da de ved at lovgivning i DK er så stram at de nærmest ikke kan bruge det til noget

Kuponer
Smart at kunne opbevare ting på telefonen (men det kan man jo allerede)
Stine ville ikke bryde sig om det, det vil lede til skepsis hvis det var integreret i mobilbetalingen
Hader pushmeddelelser

Finansielt overview

Funktionelt
- Attraktivt ift. dankort da man med det samme kan se hvor mange penge man har brugt
- Naima: Grunden til at jeg ikke vil bruge mobilbetalinger er manglende overview – hvis jeg kunne få dette vil det nok overbevise mig om at bruge det
- Har mange forskellige konti, og alle disse er ikke linket op til netbank (ofte der er konti hvortil man ikke har kort)
  - Netbank skal kunne integreres med mobile wallet

Emotional
- Følelse af overblik
- Security, dagligt overblik over forbrug
- Ofte er det associeret med noget negativt at checke konto – tage dyb indånding og checke kontoen
-

Social
- Privatøkonomi er privat

- Det er smart og jeg ville unde alle at bruge noget der er smart (M)
- Hvis folk har smartphone ville jeg antage at de ville bruge det.
-

Epistemic

-

Conditional

-

Tilfører ikke ekstra værdi til mobilbetalinger, tværtimod forventes det at dette skal være en del af app'en
Problem opstår hvis noget information ligger i netbank, noget information, i mobil wallet, og noget et tredje sted.

Appendix 2 – Experimental Survey

Appendix 3 – SPSS, Demographics & Payment Behavior

Appendix 4 – Comments from survey

Control group	Experimental group
Section 1	I don't have a smartphone and I would be worried that more mobile payments would almost force me to get one.
Awesome :D	A phone is larger than a credit card and not waterproof.
If my phone is dead, I wont be able to pay...	Too dependent on phone
You Can tap your can on the machine instead .. Don't want to be to dependent on my phone, and if I lose my phone I'm unable to call, text and pay..	It doesn't seem safe
Jeg kan pt ikke se, at det skulle være nemmere at betale med telefon frem for Dankort. Nemmere for mig har blandt andet noget at gøre med tiden, jeg bruger på det, og hvor mange steps, man skal igennem. I begge tilfælde skal man finde noget frem (mobil eller dankort). I begge tilfælde skal de i forbindelse med maskinen. Herefter er det uklart, hvad der skal ske på mobilen ud over, at man kommer ind i en app. Men hvor mange steps, er der i den app.	Love it and want it!
I feel that using a credit card is just as easy. Plus I would be worried about it being even easier for people to steal money from me, if all they need is my phone.	The fact that it may contain information on loyalty cards ect. is especially good. I always forget to get my discount and use these cards, even dough I have several.
Due to problems with other applications like MobilePay and NetBank, I would be reluctant to be one of the first users. However, once the application has been implementer without flaws and problems for the consumer, I would be more than happy to try it out myself.	I always carry my creditcard, so concerning the easy-part, it dosn't make a difference to me whether I pay with cell phone or creditcard. However, I trust my creditcard more.
You need to have power on your phone in order to pay. In that case what happens during power shutdowns etc.? It should not replace the excisting payment (plastic cards) but could compliment it nicely.	Still think that mobiles and the network is too unstable/unreliable to totally implement this in daily shopping.
Could present a problem to those not owning a smart phone! Or a crummy smart phone like mine! But I can see that it's a very attractive and simple idea!	I don't have a smartphone, so for me it doesn't have that big of an effect. But it's still very clever, I think.
If it still on relation to a normal paysens devise in stores, I don't Understand the last point about using it anywhere.	Wat happens if i dont havr my phone with me?
Only if the app works 100 % on every smart phone device (apple, windows, android)	I always lose my phone
There are already some places in DK where you can use an app on your mobile to make a payment. Very handy.	Unsure about the meaning of question 7. It is unclear because it has not been implemented yet.
It doesn´t make it easier than paying wiyh my credit card. A minus by paying with the app is that smartphones often die(battery). So would always more rely on my Card for payments.	I think it is insecure so is not sure it would fit in my daily routine
The problem is the power on the phone - if everything is on your phone and it runs out of battery - you f**ked..	My usage also depends on the fee you would have to pay for the service. I other countries such as Germany few stores take int. credit cards due high fees.
It is already easy to pay with your credit card, so it doesn't make it easier, it just provides a new way of doing it. I can't say I strongly disagree either, since everyone always	I already use the Starbucks app (live in UK) to pay for my coffee, etc. once I discovered that, I stopped using any other types of payment in there - I can top up my account while

carries around their mobile phones - now will would be able to leave the card at home (not particularly much of an effort to take it with you though). I don't really care about it. I can't use Mobile Payment when my phone is out of battery, can I? Mobile payment have not yet reached a level of seamlessness and security which make it more convenient than the credit card. NFC payments with the cards have the same effect for me and I do not feel safe to have my payment details in my phone. Maybe the development of biometrics for security in payment will change this in the future. It really depends on how (well) it works	queuing and then pay
SECTION 2 Great I will probably not use mobile payment regularly but can be good to have the opportunity when forgetting the wallet at home or loosing the card on vacation etc..backup plan 12: dont know, never tried Det er vigtigt at pointere, at svarene er givet på baggrund af mobile payment i butikker. Altså ikke, hvis man skal overfører penge til folk, man kender. Derudover er det svært at give et konkret svar på ovenstående spørgsmål i og med, at man ikke kender til måden, der kommer til at fungere. Er der f.eks. som en del af appen et overblik og har den så alt med, også det du ikke bruger din mobil til? I always have my wallet. ;-) I need my wallet anyway, for my health insurance Card and my drivers license. It might be easy, but using a credit card is easy too. If it takes 5 or 10 sec, dosen't really matter that much to me. And you will need to bring your wallet any way, just in case you phonpe runs out of battery I Always bring my wallet	Again, my phone is larger than my wallet. To question 14: With mobile pay, I have to have my phone with me all the time. What's the difference? Still need my wallet with my driver license, various ID cards, etc. for question 14 Battery of the phone might die Regarding #14: Forgetting my wallet is not a problem for me. Jeg kan sagtnes se det smarte i det, og kommer også til at bruge det, men bryder mig alligevel ikke om konceptet. Er lidt i tvivl om hvad jeg egentlig tænker om produktet/app'en
SECTION 3 Don't always have my phone at me I'm missing a "I dont know" button. How difficult it is to learn depends on the user surface of the app. Still a power problem! About efficiency; there can also be a netywork problem. Eg. at fleamarket in the countryside, the network is never good enough. If everything is based on mobile pay, you need to make sure about the network and providede charging facilities. It is not clear how the expenditure will be done by the phone company. Will the phonecompany now be in the	Tend to lose my phone. Cannot answer questions about actual usage, when I've never tried it However battery time spg 17: det ved jeg ikke eftersom jeg ikke har prøvet det endnu I will still need to carry other cards around with me. I don't like going out without ID for instance...

banking business? It's not attractive because the phone is with me, I'd always carry my wallet anyway (ID, coins, other cards). It's useful because it's quick and easy when I'm in a hurry. I'm mostly worried about the possible security issues. However, what happens if I go out without my wallet and my phone goes out of battery?..	
SECTION 4 NONE	I will use it if I ever get a smartphone. I don't trust the security protocols and prefer not to keep critical, personal data on a device with wireless connectivity and a closed operating system which basically could do anything without me ever finding out Depends on the price of the service.

Appendix 5 – SPSS, mobile payment

Appendix 6 – SPSS, men vs. women (convenience)