



CUSTOMER SATISFACTION WITH MOBILE PAYMENTS

Master's Thesis
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Master's Programme in Marketing
Fall 2018

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Title of thesis	Customer satisfaction with mobile payments	
Degree	Master of Science (Economics and Business Administration)	
Degree programme	Marketing	
Thesis advisor(s)	Tomas Falk, Ilona Mikkonen	
Year of approval	Number of pages	Language
2018	76	English

Abstract

The purpose of this research is to investigate customer experiences with mobile payments. In particular, the study identifies and classifies common sources of satisfaction and dissatisfaction associated with the use of mobile payments, and compares them to the determinants of satisfaction with technology-based services.

The critical incident technique was applied to identify and classify the most common sources of satisfaction and dissatisfaction with mobile payments. Data was collected using an online survey, which combined multiple-choice and open-ended questions. The multiple-choice questions allowed examining the respondents' relationship with mobile payments, while the open-ended questions provided insights into the nature of these relationships. In particular, the study participants were asked to describe their satisfying or dissatisfying experiences with mobile payments. The collected information was analysed using the constant comparative method. Data was coded, and each response was compared to the existing codes.

Significantly more respondents were able to recall and describe a satisfactory rather than a dissatisfactory mobile payment experience, suggesting that the overall perception of mobile payment applications is favourable. The main sources of satisfaction reported are convenience, problem-solving, efficacy and security. Satisfaction results from the ability of mobile payments to quickly and safely deliver money and perform swift and easy transactions regardless of one's location and possession of physical tokens such as cash or credit cards. Thanks to their high accessibility and flexibility, mobile payments also allow making transactions during the absence or failure of alternative payment options. Most dissatisfaction sources that emerged from the data analysis are opposite to the satisfaction sources, falling into the umbrellas of complexity and inefficacy. The contrasting satisfaction/dissatisfaction sources demonstrate the mobile payment technology paradox.

The positive perception of mobile payments should motivate greater merchant acceptance. The knowledge of customer satisfaction sources can help companies in designing, improving, and marketing mobile payments. Further research is recommended to examine customer experience with mobile payments in more details, with different consumer groups, and at different stages of the payment process.

Keywords mobile payment, customer satisfaction, technology paradox, critical incident technique

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List of Abbreviations

CIT	Critical incident technique
CL	Comparison level
CS	Comparison standard
ESQ	Electronic Service Quality
MST	Magnetic secure transmission
MP	Mobile payment
NFC	Near-field communication
PIN	Personal identification number
POS	Point-of-sale
QR	Quick response
SST	Self-service technology
TR	Technology readiness
TRI	Technology readiness index
U.S.	United States

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1 INTRODUCTION

1.1 Research background and motivation

Throughout history, individuals have used different payment systems for purchasing products and services. Bartering was one of the first methods; individuals exchanged goods and services in return for other goods and services (Rampton, 2016). Cattle, sheep, and vegetables were some of the common exchange items (Burn-Callander, 2014). Soon after individuals began to use grain, shells, coins, and gold as a form of payment. In the beginning of 20th century, the charge card was introduced. Further, in 1983, the concept of digital cash was first proposed (Rampton, 2016), marking the beginning of the electronic payment era. Approximately ten years later the first online purchase was made. Payment methods have evolved as a response for an increased convenience demand; cashless payments met this demand from both customer and merchant perspectives (Ondrus and Pigneur, 2006). Major cashless payment innovations include credit and debit cards, online banking and bill payments. More recently mobile payment applications and mobile web payments were introduced (Rampton, 2016).

Mobile payment (MP) denotes payment services that require the use of a mobile device (Liébana-Cabanillas et al., 2014). Over the past few years, critical technological developments have emerged in this context, including near-field communication (NFC) and QR codes (Dennehy and Sammon, 2015). In addition, numerous applications have been introduced, which facilitate the payment process. Prominent examples include Android Pay and Samsung Pay (Rathore, 2016). In 2017, the number of mobile payment users was expected to be 450 million (Statista, 2017a). In the past years, the worldwide mobile payment revenue has been growing and is expected to reach over 1 trillion U.S. dollars in 2019 (Statista, 2017b). Considering high number of mobile phone lines and large amount of active mobile internet users, there is a clear potential for further expansion (Liébana-Cabanillas and Lara-Rubio, 2017).

The recent trend towards cashless payments is evident in the marketplace. Mobile payment is offered by a growing number of companies from different sectors including banking, hospitality and retail. Restaurant chains like Subway and Starbucks now allow making payments through the NFC technology (Khalilzadeh et al., 2017). Stores that accept mobile payments include for example Levi's, Lego, Nike, H&M, Whole Foods Market and

Sephora. Some of them provide mobile payments through dedicated services like Apple Pay, others offer mobile payments via own applications. In some countries, the cash payments have been slowly disappearing. For example, in Sweden cash payments constituted only 2% of total payment value in 2015 and are expected to fall to 0.5% in 2020 (Henley, 2016). Despite its growing popularity, mobile payment has not yet reached its full potential. Although the number of mobile payment users increases daily (Liébana-Cabanillas et al., 2014), only the minority of mobile internet users admit paying with a smartphone (Zhou, 2013). Further research is therefore required for successful future expansion and adaptation.

Vast academic literature explores the mobile payment topic; prevailing themes include the factors influencing adoption and use of mobile payments (e.g. Kim et al., 2010; Oliveira et al., 2016; Yang et al., 2012), the differences in the perceptions of these factors by different consumer groups (Lu et al., 2011; Liébana-Cabanillas et al., 2014; Baptista and Oliveira, 2015) and the advantages and potential risks involved with the technology (Mallat, 2007; Hayashi, 2012). Overall, the post-adoption use of mobile payments is less commonly addressed (Zhou, 2013). This study extends the literature on mobile payment by examining the post-use evaluations of the users. In addition, it contributes to the literature on customer satisfaction by evaluating satisfaction determinants in the context of mobile payments. Considering that satisfactory experiences are the most important driver of customer loyalty, customer retention (Gustaffsson et al., 2006) and word-of-mouth activity (Anderson, 1998), it is necessary to examine satisfaction with mobile payments. It is especially significant for mobile payment providers as the marketplace is characterised by the intense competition and low switching costs, making customers likely to switch between different service providers. Identifying the sources of customer satisfaction and dissatisfaction with mobile payments can help companies to retain existing and attract new customers.

1.2 Research objectives and questions

The purpose of this study is to investigate customer experiences with mobile payments. More specifically, the research identifies and classifies common sources of satisfaction and dissatisfaction associated with the use of mobile payments, and compares them with the customer satisfaction determinants with technology-based services such as SSTs and electronic stores. The study is guided by the following research questions:

- *What are the sources of satisfaction and dissatisfaction involved in the use of mobile payments?*

- *Are the satisfaction and dissatisfaction sources with mobile payments different from or similar to the sources of satisfaction and dissatisfaction with other technology-based services?*

The research problem is addressed using the critical incident technique (CIT). The study participants are asked to describe either particularly satisfying (positive) or dissatisfying (negative) experience with mobile payment. Data is gathered using an online questionnaire, which combines multiple-choice and open-ended questions. The open-ended questions help to gain an understanding of the mobile payment experiences from the perspective of the users. To ensure detailed descriptions of experiences, respondents can choose any mobile payment solution available and decide whether they want to report a satisfying or dissatisfying experience. Their descriptions are also guided by the set of questions.

Since no prior studies examine mobile payment satisfaction, the research is exploratory. It aims to investigate a relatively novel phenomenon, and provides guidelines for further research. All participants selected for this study are somewhat familiar and experienced with mobile payments. Although they vary in terms of age, gender and education, they share a tendency for adopting and using new technologies.

1.3 Thesis structure

In the following chapter, the theoretical background for the thesis is developed, concentrating mainly on the mobile payment and customer satisfaction theories. It also briefly explains the payment transparency concept and reviews existing literature linking customer satisfaction and technology. Chapter 3 presents the methodology used in this study. More specifically, it describes the critical incident technique (CIT) and explains why and how it was used in the context of this research. This section covers the method of data collection and analysis. In addition, the exploratory research and realist paradigm are briefly explained. The fourth (Findings) and fifth (Discussion) chapters show study results. The sources of customer satisfaction and dissatisfaction with mobile payments are identified and discussed. The implications of the research and its limitations are also covered. Finally, chapter 6 summarizes the main research findings to provide clear answers for the research questions.

2 LITERATURE REVIEW

2.1 Mobile payment

2.1.1 Definition, payment process and current solutions

Mobile payments constitute a natural evolution of electronic payments (Mallat, 2007). One of the first mobile payment solutions was introduced by the Finnish company Sonera in 1997, which allowed purchasing soft drinks at vending machines using mobile phones (Dahlberg et al., 2003). Soon after, the number of mobile payment providers and their offerings have rapidly increased. Google introduced its Wallet app in 2011, while Apple launched Apple Pay in 2014. In Finland, the most popular solutions in 2016 were MobilePay and PayPal Mobile (Statista, 2016). In 2017, two major services, Siirto and Apple Pay, were introduced.

Mobile payment is defined as a process whereby money is transferred through a mobile device from the payer to the receiver (Mallat, 2007). The mobile device refers to a smartphone, mobile phone or personal digital assistant (Kim et al., 2010). Mobile payments use wireless communication technologies, for example mobile telecommunication networks (Kim et al., 2010). Mobiles are used for bill payment, account transfers, peer-to-peer transfers, proximity and remote payments, discounts, mobile marketing or ticketing (Oliveira et al., 2016). Mobile payments can substitute all major payment methods including cash, credit and debit cards, and electronic bill payments (Dahlberg et al., 2003). Schierz et al. (2010) outline the common definitions of mobile payment process; some authors refer to two phases of the process, namely authorization and initiation, while others also add realization of the payment. It is important to note the difference between mobile payment and mobile banking (Mallat, 2007). Although sometimes treated interchangeably, the former involves a process between the customer, bank and the merchant, while the latter relates to a customer-bank relationship (Oliveira et al., 2016).

The literature displays no consensus on a generic mobile payment categorization; different classifications exist based on different criteria. The mobile payment services are divided into for example in-app, mobile web and in-store payments (Hillman and Neustaedter, 2017). The former involves conducting transactions via mobile applications; H&M is an example of store allowing in-app payments. Shopping through mobile web requires Internet access; the consumer opens the store browser on his/her phone, selects

products and finalises the payment. Finally, payments made in physical stores most commonly involve building a connection between the customer's mobile phone and payment terminal. Mobile payments can be also split into two broad categories: bill payments and everyday purchases (Dahlberg et al., 2008) or into three groups: person-to-person money transfers, payments made on the mobile web and mobile transactions conducted at the point-of-sale (POS) (Hayashi, 2012). Falk et al. (2016) also refer to the point-of-sale to classify mobile payments, while adding equipment as another criterion. According to Falk et al. (2016), mobile payments can be made dependently or not from the point-of-sale (POS) and by using hardware or software; software-based solutions require downloading a mobile app, while hardware-based solutions demand the use of equipment, most commonly in the form of a NFC chip (Falk et al., 2016). POS-dependent payments require the common presence of shopper and merchant, while for POS-independent solutions their location can be different. Within POS-independent payments, the most common are software-based money transfer solutions, for instance PayPal (Falk et al., 2016). Many POS-dependent solutions integrate both software and hardware; for example, Samsung Pay users need the app (software) and the phone equipped with the magnetic secure transmission (MST) technology, which makes connection with the store's terminal (hardware).

The mobile payment process consists of multiple stages and varies among service providers. A basic model summarizing the most common stages is presented in Figure 1. Overall, the processes may be divided into two main parts: payment app setup and payment finalization at the POS. The former involves downloading the desired app or finding it on the mobile system; many services for example Apple Pay or Samsung Pay are pre-installed on the relevant platforms (Haselton, 2017). Setting up also involves adding card details either manually or via mobile camera. At this stage, some applications ask users to verify themselves; for instance, Samsung Pay requires scanning one's iris or fingertips and entering a personal identification number (PIN). After the mobile payment is set up it can be used in-store. The customer must ensure the contactless payment symbol or app's icon is present at the POS; not all terminals accept mobile payments. Further verification is then performed, for instance the Apple Pay service requires placing the finger on the fingerprint scanner, while Samsung Pay allows verification with PIN or biometrics. Finally, the phone is held near the reader screen to build the connection with the terminal and process the payment. Once the transaction is completed, the customer receives a confirmation message.

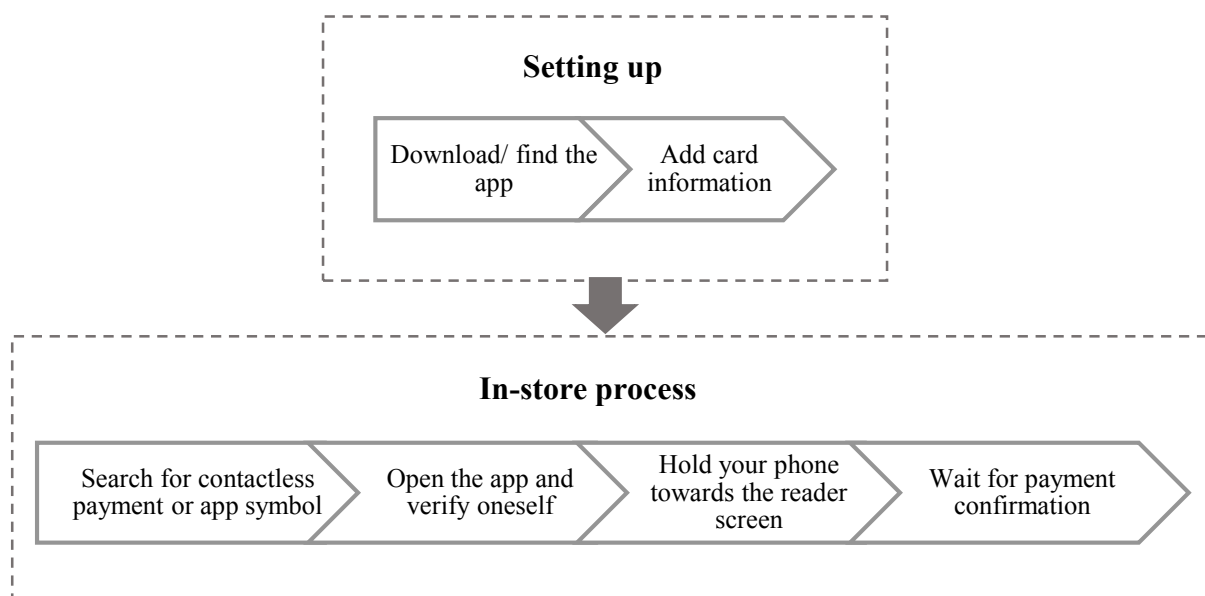


Figure 1 – The mobile payment process.

Table 1 presents examples of the currently available mobile payment solutions and their characteristics. Most platforms offer multiple services: in-store, in-app and online payments. Money transfers are also available; for instance, Apple has recently expanded its service by allowing peer-to-peer transfers (Delrey, 2017), meanwhile Google dedicated its Wallet app for sending and receiving money. Apps such as LevelUp allow ordering food online (the customer must visit the physical store for the pick-up).

PayPal is the most widely available solution; its mobile checkout is offered in 200 countries worldwide (www.paypal.com). PayPal is also the most popular mobile payment alternative in the United States (Statista, 2017a). Its popularity can be explained by its US-only service called Venmo. It is a rapidly growing app which allows transferring money and socialising (Schulman, 2016). Venmo’s total payment volume has doubled between 2016 and 2017 (Statista, 2017b) and the number of retailers accepting it reached over 2 million in 2017 (Ready, 2017). Measured by number of active users, the most popular mobile payment solution is Alipay; however, its services are only accepted in China and the United States. Apple Pay has the second highest number of users and is offered in the most countries after PayPal. In US, Apple Pay is largely preferred by retailers when compared to Samsung Pay or Android Pay (Meola, 2016). Microsoft Pay has been established in 2016 as a response to the increasing demand for mobile payments. It is currently only offered for US residents and

Solution	Release year	Services	Availability	Platform(s)	Users (in million)	Number of transaction
Apple Pay	2014	Money transfers, in-store payments, in-app and mobile web payments	25 countries	iOS	86	N/A
Samsung Pay	2015	In-store payments, in-app and mobile web payments	21 countries	Android	34	100 million (2016)
PayPal	1998	In-app and mobile web payments, purchasing products online and picking up in-store (available in US)	200 countries	iOS, Android, Windows	More than 23 (mobile users)	N/A
Android Pay	2015	In-store payments, in-app and mobile web payments	17 countries	Android	24	N/A
Microsoft Wallet (Microsoft Pay)	2016	In-store payments, in-app and mobile web payments	US only	Windows	N/A	N/A
LevelUp	2011	Pre-ordering food in-app and making in-store mobile payments	US only	iOS, Android	Almost 1 (active monthly users)	N/A
Alipay	2004	Money transfers, in-app and mobile web payments, in-store payments	China, US	iOS, Android, Windows	More than 450	175 million (daily)

Table 1 – Key mobile payment solutions and their characteristics.

it is one of the few solutions available on the Windows operating system (Bhagat, 2016).

2.1.2 Comparison to traditional payment methods

Mobile payments have advantages and disadvantages when compared to traditional payment instruments (Mallat, 2007; Hayashi, 2012; Liébana-Cabanillas et al., 2014). Hayashi (2012) identifies four main comparison attributes: 1) convenience, 2) security, 3) merchant acceptance, and 4) costs, which are discussed next.

Convenience refers to for instance flexibility, speed, portability, and ease of use (Hayashi, 2012). It is a significant motivational factor for using mobile payments; multiple studies emphasize for example the importance of ease of use in the mobile payment adoption (e.g. Schierz et al., 2010; Kim et al., 2010). Overall, contactless payments provide consumers with high flexibility time- and location-wise (Mallat, 2007; Zhou, 2013), eliminate the need of carrying further physical tokens, such as cash or credit cards, and reduce payment time by on average 15 to 30 seconds (Hayashi, 2012). A potential inconvenience is the limited functionality as a result of the small size of the device screen (Zhou, 2013). Another possible challenge is setting up the mobile payment application; it often involves multiple steps, such as adding payment cards, entering PIN, or scanning one's fingertips. For individuals that are less familiar with technology, like the elderly, this process might be difficult to implement (Hayashi, 2012).

Security concerns the possibility of fraud and the level of protection against fraudulent activities (Hayashi, 2012). Overall, mobile payments allow safe transactions thanks to appropriate technologies (Liébana-Cabanillas et al., 2014), such as encryption, and reduce likelihood of, for instance, theft (Wenner et al., 2017). Still, lack of perceived security is common among consumers (Siau et al., 2004, Oliveira et al., 2016). As an example, users might be afraid to input their personal data while establishing contracts with mobile app providers (Hillman and Neustaedter, 2017). The literature linking the effect of perceived security on mobile payment adoption is inconclusive. For instance, Oliveira et al. (2016) identify a positive relationship (also in e.g. Khalilzadeh et al., 2017), while Schierz et al. (2010) suggest that there is no strong link between perceived security and mobile payment acceptance. Prior mobile payment experience has been observed to lower security concerns among consumers (Khalilzadeh et al., 2017).

According to Hayashi (2012), merchant acceptance involves the extent to which merchants offer mobile payments as a payment alternative. Despite the growing trend, mobile payments are still relatively new and less commonly adopted than the traditional payment alternatives such as cash and credit/debit cards. Finally, costs involve the amount of money spent on payment fees and equipment (Hayashi, 2012); cost considerations are known as a barrier in technology adoption overall (Lu et al., 2011). In the mobile payment context, customers do not usually bear additional equipment costs as most modern smartphones are NFC-enabled. Moreover, monthly card fees are usually equal whether the customer uses mobile payment or not (Hayashi, 2012).

In addition, mobile payments differ from the traditional payment methods in terms of payment transparency. According to Soman (2003), payment transparency is the degree to which the payment is salient in its amount and physical form. The physical salience refers to the extent to which an individual can experience the money spending. Meanwhile, salience of amount is the level to which the amount of money can be identified (Falk et al., 2016). The most salient in form and amount are cash payments; the shopper manages money directly, thus can easily see money outflow and its amount (Soman, 2003). Card payments are less transparent than cash; customers do not deal with physical money, making spending less “painful” (Feinberg, 1986) and the amount less easily recognizable (Falk et al., 2016). According to Falk et al. (2016), mobile payments are the least transparent since consumers do not tangibly experience money outflow like in case of cash and are not asked to input security codes or sign receipts, what is common for card payments. Table 2 summarizes the information of the salience and transparency of the most common payment methods, which are cash, card and mobile payment (Falk et al., 2016).

	Saliency of form	Saliency of amount		Payment transparency
Cash	High	High	➔	High
Card	Medium	Low	➔	Medium
Mobile	Low	Low – Medium	➔	Low

Table 2 – Payment methods transparency comparison by Falk et al. (2016).

The payment method transparency has an impact on consumer behaviour. Vast research has been performed to investigate this effect (e.g. Soman, 2003; Prelec and Simester, 2001; Feinberg, 1986; Falk et al., 2016). Card payments, being less transparent than cash, increase the probability of spending; this refers to so-called *card premium* (Soman, 2001; Soman and Cheema, 2002; Prelec and Simester, 2001). According to Falk et al. (2016) there also exists a *mobile premium*; consumers are likely to pay more when completing transactions with a mobile than with cash. Payment transparency also influences product evaluations. Chatterjee and Rose (2011) suggest that shoppers who are exposed to cash payments tend to consider product costs to a greater extent than those exposed to credit card payments. Accordingly, card users pay greater attention to product benefits (Chatterjee and Rose, 2011). In addition, payment transparency contributes to the evaluation of overall price of the store; the less transparent is the payment method, the more positive is one's judgement (Falk et al., 2016).

2.2 Customer satisfaction

2.2.1 Definition

Extensive research has been performed on customer satisfaction with contrasting outcomes. Despite the significant differences, the definitions share common points; customer satisfaction is regarded as a response occurring in a particular time and towards a specific focus. The main inconsistencies concern the response timing, response type and the focus object (Figure 2).

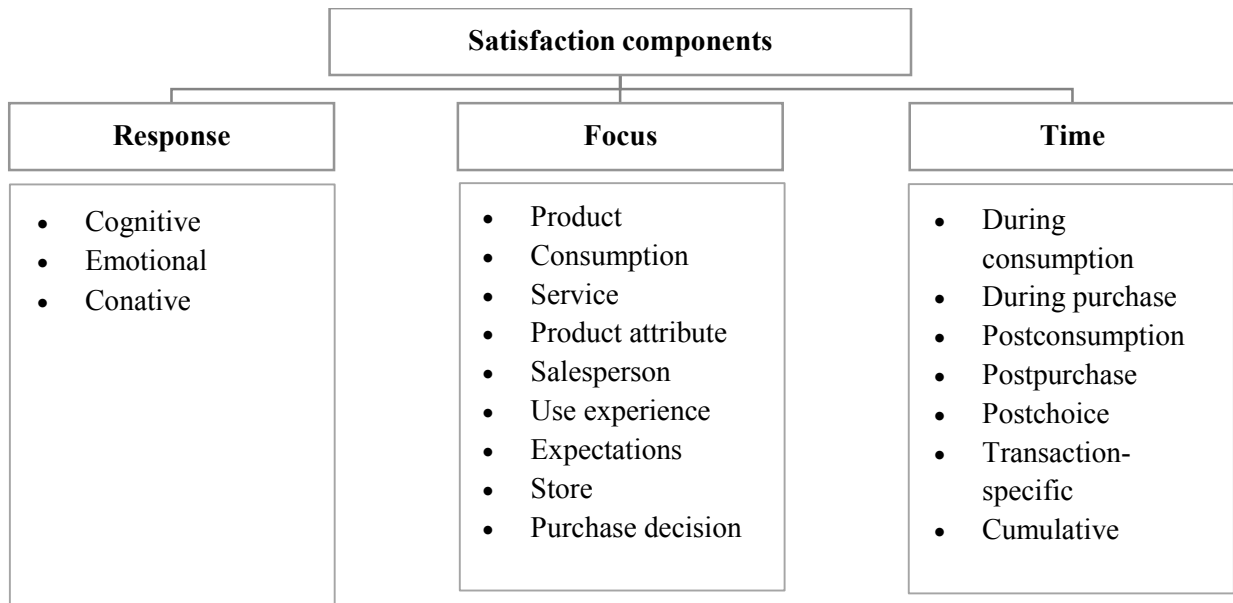


Figure 2 – Different satisfaction components based on Giese and Cote (2000).

Satisfaction can be established during different time points; most commonly it is considered to occur post-purchase/post-consumption/post-choice (Giese and Cote, 2000). For example, Fornell (1992) defines satisfaction as “an overall post-purchase evaluation” (pp. 11), while Mano and Oliver (1993) refer to “post-consumption evaluative judgement” (pp. 454). Under the contrasting perspective however, satisfaction is developed during the time of a purchase or consumption. For instance, Cadotte et al. (1987) regard satisfaction as an emotion which is established directly at the time of one’s experience. In addition, Olsen and Johnson (2003) (also in Mittal et al., 1998) discuss two approaches towards customer satisfaction conceptualization: transaction-specific and cumulative. The former considers satisfaction as an assessment of one’s single experience with a product or service and the following reaction towards it (Oliver, 1997). Meanwhile, the latter suggests that an individual evaluates his/her prior experiences and purchases with the company while making a satisfaction judgement (Johnson and Fornell, 1991).

Most authors (e.g. Cadotte et al., 1987; Westbrook and Reilly, 1983) conceptualize satisfaction as an emotional response. The level of emotional intensity is situation-specific; emotions related to satisfaction range from strong feelings like euphoria and excitement to weaker emotions, for instance indifference or relief (Giese and Cote, 2000). Under the

contrasting perspective, satisfaction is related to cognition; it is defined as “a buyer’s cognitive state” (Howard and Sheth, 1969: 145). Satisfaction might be also regarded as the combination of both, cognitive and emotional dimensions (conative). Several customer satisfaction definitions do not include a split into cognitive, emotional, or conative but rather define satisfaction as an overall response (Giese and Cote, 2000). This response might occur towards different foci, namely the object of one’s satisfaction; this object is usually compared to some standard to form a satisfaction judgement. The response focus comprises the product or its specific attribute(s), purchase or consumption experiences and expectations (Giese and Cote, 2000).

No consensus exists whether satisfaction should be regarded as an outcome or a process (Giese and Cote, 2000). Under the first perspective (e.g. Spreng et al., 1996; Tse and Wilton, 1988), satisfaction is considered as a response towards an experience. For instance, Tse and Wilton (1988) define satisfaction as “the consumer’s response to the evaluation of the perceived discrepancy between prior expectations ... and the actual performance of the product (...)” (pp. 204). In contrast, the latter perspective defines satisfaction as an evaluation process, i.e. “postchoice evaluative judgement concerning a specific purchase selection” (Westbrook and Oliver, 1991: 84). Finally, no common term is used to signify satisfaction; authors often use interchangeably phrases such as consumer satisfaction, customer satisfaction, or only satisfaction (Giese and Cote, 2000).

Giese and Cote (2000) emphasize the importance of developing context-specific and clear definitions of customer satisfaction. They suggest that researchers should identify three main components of satisfaction: response, focus, and timing. In this study, satisfaction is regarded as an overall evaluation of one’s experience with a mobile payment solution as perceived after its use. In addition, given that the study participants are asked to describe a specific mobile payment experience, satisfaction is considered as transaction-specific (concerning a reaction towards a single experience) rather than cumulative.

2.2.2 The determinants of customer satisfaction

The determinants of customer satisfaction have been identified by several authors (e.g. Oliver and Desarbo, 1988; Oliver, 1980; Westbrook and Oliver, 1991). Oliver and Desarbo (1988)

discuss the main paradigms found in the literature, namely the Expectation and Disconfirmation, Performance, Equity Theory and Attribution Theory. The paradigms are more closely examined as follows.

A) *Expectation and Disconfirmation*

This theory assumes that individuals form expectations and contrast them with the actual product or service attributes (Oliver, 1980). Expectations are personal beliefs on the product's features or performance (Spreng et al., 1996) and result from for instance prior experiences, social influences and brand connotations (Oliver, 1997). Churchill and Surprenant (1982) suggest that different kinds of expectations influence consumer evaluations; expectations can be ideal, desirable, expected or minimum tolerable. Negative confirmation results if the product performs worse than expected, simple confirmation if the expectation was met, and positive disconfirmation if it performs better than expected (Oliver and Desarbo, 1988). Positive disconfirmation increases satisfaction, negative confirmation lowers it, and simple confirmation maintains the level (Oliver and Desarbo, 1988; Bearden and Teel, 1983). Spreng et al. (1996) extended the theory by suggesting that customer satisfaction does not merely result from the fulfilment of one's expectations but also desires. Desire is defined as a product's attribute or benefit regarded to provide high value (Spreng et al., 1996). According to Spreng et al. (1996), consumers evaluate whether the product aids in attaining their desired state by assessing to what extent it provides the attributes generating that state. In addition, Spreng et al. (1996) argue that the overall product satisfaction is influenced by attribute and information components; attribute satisfaction relates to certain product characteristics, while information satisfaction refers to the customer's feeling about the amount and quality of information available while making purchase decision (Spreng et al., 1996). The Expectation and Disconfirmation Theory was modified by Woodruff et al. (1983), who suggested that consumers compare brand performance with experience-based norms rather than expectations. According to them, prior experiences impact attitude and expectations towards brand as well as performance norms, which in turn influence confirmation or disconfirmation.

B) *Performance*

Burton et al. (2003) distinguish between actual and perceived performances, both having an impact on satisfaction; actual performance refers to the product or service features that can be

assessed objectively, meanwhile perceived performance involves a number of product- or service- unrelated factors affecting evaluations; subjective assessments are then produced (Burton et al., 2003). Perceived performance is influenced by prior experiences; beliefs are formed based on personal experiences, marketing efforts, positive/negative word-of-mouth communication and others (Woodruff et al., 1983). Limited research exists on the individual effects of perceived and actual performances on satisfaction. Burton et al. (2003) trace a positive association between both performance types and their impact on customer satisfaction. While evident that performance influences satisfaction, the studies examining the way in which it is achieved are inconclusive (Burton et al., 2003). Oliver (1993) discusses that satisfaction can either result from the product performance directly or from the performance comparison with one's expectations. As an example, Churchill and Supernant (1982) found that for durable products like videodisk players, satisfaction depends merely on the perceived product performance; meanwhile, for non-durable items (e.g. flowers) it results from the comparison of perceived performance and one's expectations.

C) *Equity Theory*

Equity is a significant part of a satisfactory transaction (Oliver and Swan, 1989). It refers to the "fairness, rightness, or deservingness comparison to other entities, whether real or imaginary, individual or collective, person or non-person" (Oliver, 1997: 196). This definition emphasizes the process of comparison, which can be performed towards the interaction partner, other shoppers or any agency (Oliver and Swan, 1989). The Equity Theory defines that customers form judgements of the fairness towards their input/investment and outcome/reward (Olsen and Johnson, 2003). The input often refers to price, whereas outcome is, for instance, the product's quality (Olsen and Johnson, 2003). Equity and satisfaction occur when the individual considers that his/her input-to-outcome ratio is equivalent to that of the other parties (Oliver and Desarbo, 1988) or when he/she perceives that the outcome is somewhat more favourable to him/her than to others (Oliver, 1993).

D) *Attribution Theory*

Attribution is defined as a perceived cause of certain behaviour or event (Bitner, 1990). The Attribution Theory defines that consumers involve in causal thinking; they evaluate causes of their purchase outcome which can be either success or failure (Bitner, 1990). These causes are

grouped along dimensions such as locus, control, and stability (Oliver and Desarbo, 1988). Locus is the source of responsibility, whether it is external or internal (Oliver and Desarbo, 1988). Dissatisfaction can result from one's inability to deal with the product (internal locus) or failure of the product's provider (external locus) (Weiner, 2000). Control refers to whether or not the responsible actor is in control of a cause (Bitner, 1990). For instance, dissatisfaction can result from uncontrollable factors such as bad weather conditions or controllable ones like untrained personnel (Weiner, 2000). A stable cause is likely to occur repeatedly; for example, if the consumer does not like the taste of specific cereals, he/she will not purchase it again as the taste will not change. Meanwhile, some products are considered to have unstable attributes; for instance, cars often vary in their quality (Weiner, 2000). A negative outcome from products with unstable attributions has little impact on one's satisfaction expectancy (Weiner, 2000). Overall, locus, control and stability impact satisfaction judgements either favourably or unfavourably depending on the circumstances. In his research on service encounters, Bitner (1990) discovered that if the service fails due to controllable causes, the customer is more dissatisfied than when the cause is uncontrollable. Dissatisfaction is also higher when the failure is perceived to recur (Bitner, 1990). Consumers often have mixed feelings towards same products and services; for instance, one product attribute such as size can evoke satisfaction while another (e.g. colour), dissatisfaction (Oliver, 1993).

Westbrook and Oliver (1991) suggest that satisfaction is influenced by consumption emotion, which is defined as "the set of emotional responses elicited specifically during product usage or consumption experiences" (pp. 85). They identify five feelings having an impact on emotion, namely happy/content, pleasant surprise, unemotional, unpleasant surprise, and angry/upset. Positive emotions such as happiness and delight generate high satisfaction, while feelings of negative surprise and anger lower satisfaction judgements (Westbrook and Oliver, 1991). Westbrook (1980) also emphasizes the importance of emotions and claims that satisfaction is associated with positive feelings, while dissatisfaction is linked to negative emotions. These feelings are not only generated during the consumer interaction with the product/service but are also impacted by the state of the consumer (Westbrook, 1980). For instance, individuals who have an overall positive attitude towards consumerism and those whose life satisfaction is high, tend to experience higher satisfaction with products and services

than people lacking such sources of good affect. Still, the impact of such intrapersonal influences varies among different products and services (Westbrook, 1980).

2.2.3 Satisfaction and technology

Technological devices are entities that involve a high volume of operations and whose design and production demands knowledge of engineering. The human relationships with technological products have been growing more and more complex as the technology evolves (Mick and Fournier, 1998). Since technological products are often involving and became part of the contemporary culture they provide a good context for studying satisfaction (Fournier and Mick, 1999). The literature on satisfaction with technology either directly explores satisfaction determinants (e.g. Meuter et al., 2000) or does it indirectly by identifying the dimensions of product/service quality which have an impact on satisfaction (e.g. Parasuraman et al., 2005; Bauer et al., 2006).

A) Quality of electronic services

Since customer satisfaction is influenced by the quality of a product or service, measuring quality became a research focus in the past years. The literature mainly examines quality in the context of online services such as shopping websites (e.g. Parasuraman et al., 2005; Yoo and Donthu, 2001; Bauer et al., 2006). Table 3 presents most important scales and models developed to assess the quality of electronic services and their dimensions. Although the dimensions are labelled differently, many of them are interrelated.

Scale/source	Scale dimensions	
E-S-QUAL, E-RecS-QUAL (Parasuraman et al., 2005)	Efficiency Fulfilment Privacy Contact	System availability Responsiveness Compensation
WebQual (Barnes and Vidgen, 2002)	Usability (usability and design) Information quality (information) Service interaction quality (trust, empathy)	
eTransQual (Bauer et al., 2006)	Functionality/design Enjoyment Process	Reliability Responsiveness
eTailQ (Wolfenbarger and Gilly, 2003)	Website design Fulfilment/reliability	Privacy/security Customer service
Collier and Bienstock (2006)	Process – privacy, design, information accuracy, ease of use, functionality Outcome – order timeliness, order accuracy, order condition Recovery – interactive fairness, procedural fairness, outcome fairness	
Fassnacht and Koese (2006)	Environment quality Delivery quality	Outcome quality
SITEQUAL (Yoo and Donthu, 2001)	Ease of use Aesthetic design	Processing speed Security
Mentzer et al. (2001) (Flint and Hult)	<i>Order placement (process)</i> <i>(outcome)</i> Personal contact Order release Ordering procedures Information quality	<i>Order receipt</i> Order accuracy Order condition Order quality
Li, Tan, and Xie (2002)	Tangibles Reliability Responsiveness Integration of communication	Assurance Quality of information Empathy
Zeithaml, Parasuraman and Malhotra (2002)	Ease of use or usability Privacy/security Information availability and content	Graphic style Reliability/fulfilment

Table 3 – Main scales for measuring quality of online services

Ease of use is one of the most important measures since online transactions are often complicated and intimidating to some users (Parasuraman et al., 2005). Quality is associated with the websites that enable to easily find and access required information (Yoo and Donthu, 2001) or allow conducting transactions with minimum effort. Ease of use also includes, for example, clear navigation and design, the possibility to easily edit or cancel one's order, and the ability to notify users of missing data (Collier and Bienstock, 2006). Ease of use is related to efficiency, which has been defined as "the ease and speed of accessing and using the website" (Parasuraman et al., 2005: 8) or "the ability of the customer to get to the website, find their desired product and information associated with it, and check out with minimal effort" (Zeithaml et al., 2002: 366).

Other important measures of online service quality are privacy and security. The website is considered as secure/private when it protects customer data (personal and financial) from being used by third parties, securely manages sensitive information, and displays visual signs of safe connection (Collier and Bienstock, 2006). The perception of security and trust towards a website is often influenced by past experiences with the brand, the image of the brand in media, WOM activity, and the overall brand's strength. The perception of trust can be also enhanced by displaying privacy statements and logos of third party organizations involved in data protection (Barnes and Vidgen, 2002).

Fulfilment, also referred to as reliability, is a factor having a strong impact on quality and customer satisfaction. Overall, fulfilment occurs when the website delivers its promise concerning product and delivery, i.e. when online and physical product appearances are consistent, the product is available and delivered on time and the order is made correctly (Parasuraman et al., 2005). Collier and Bienstock (2006) (also in Mentzer et al., 2001) refer to outcome quality to cover order-related issues such as accuracy, condition, timeliness, or quality.

The proper functioning of the online service is important. Parasuraman et al. (2005) refer to website functioning as system availability, meanwhile Collier and Bienstock (2006) include functionality under the process dimension. Both authors suggest that quality is associated with the proper technical functioning of the website, including for instance fast page loading and lack of dead end links. In addition, the site is considered as functional when it appeals to different groups of users.

Design is a dimension that has been discussed by most authors; it covers the visual appearance of the site such as colours, animations, texts, and images. Design might also refer to such elements as navigation, website sound, information search, the quality and depth of information, selection of products, and the level of personalization (Parasuraman et al. 2005; Collier and Bienstock, 2006). Design was found to affect both user quality perception and an intention to revisit the site (Colier and Bienstock, 2006). It also influences the perception of the site's usability and functionality (Bauer et al., 2006). For instance, clear design can facilitate or hinder the process of information search.

In addition, quality and satisfaction are influenced by, for example, the customer's ability to communicate with the technical support and customer service representatives and the quality of this contact (interactive fairness/contact), complaints management including the procedures, policies (e.g. return policy) and responsiveness (how fast the company manages the problem) (procedural fairness/responsiveness), and the company's compensation method (outcome fairness/compensation) (Collier and Bienstock, 2006; Parasuraman et al., 2005). Enjoyment is also an important evaluation factor; providing customers with enjoyable, exciting and fun experiences is considered to impact repurchase intentions and the duration of customer-firm relationship (Bauer et al., 2006).

B) Technology satisfaction drivers

Satisfaction and dissatisfaction determinants have been studied in the context of self-service technologies (SSTs). SST is defined as any type of technology allowing customers to generate intended service without direct involvement of the company's employees (Meuter et al., 2000). The Internet is a platform providing the widest variety of self-service possibilities, for instance searching for information on products/services, communicating with store's personnel, conducting financial transactions, and retail purchasing (Yen, 2005; Meuter et al., 2000). The superiority of self-service technology over its alternatives is one of the main sources of customer satisfaction; SSTs are often simpler to use, allow money savings (Meuter et al. 2000) and increase convenience as the product or service can be used in the location and time suitable for the customer (Yen, 2005). In addition, satisfaction might result from the ability of technology to respond to the individual's urgent needs, the capacity to perform its expected functions

correctly (Meuter et al., 2000) and from the consumer's feeling of self-control over the task (Yen, 2005).

The drivers of customer satisfaction have been also examined in the context of electronic retail stores. Szymanski and Hise (2000) propose that convenience, financial security, and website design have a major influence on satisfaction. Online stores give customers an easy access to wide range of products and sellers without the need of leaving home, and thus provide them with a convenient shopping method. Design, in addition to impacting the perception of quality, can also have a direct impact on satisfaction. The design elements that were found to positively impact satisfaction include for instance uncluttered appearance, simple navigation and search, and fast and clear presentations. Furthermore, financial security is important for the users and can have a positive or negative impact on satisfaction. In fact, security constitutes a common concern for making online purchases (Szymanski and Hise, 2000).

The determinants of customer satisfaction with technological products were examined using the comparison standards (CS) paradigm (Fournier and Mick, 1999). The paradigm suggests that consumers contrast product standards with actual product performances to form satisfaction judgements; desires, expectations disconfirmation model and equity expectations, as previously discussed, are some of the comparison standards (Fournier and Mick, 1999). Satisfaction with technological products results from the fulfilment of expectations. In addition, negative disconfirmation of product disadvantages impacts satisfaction; consumers who expect a product disbenefit, e.g. a car battery failure after certain mileage, are positively surprised if the disbenefit does not occur and experience satisfaction (Fournier and Mick, 1999). Satisfaction with technology also results when the product meets or exceeds one's desires, that is, when an individual's comparison level (CL) is met or exceeded. The comparison level is defined as the difference between the reward obtained from the product and costs incurred by the consumer; outcomes exceeding the CL promote satisfaction and vice-versa (Fournier and Mick, 1999). As an example, if a major computer upgrade involves considerable time and effort but does not significantly increase performance, the user might ultimately feel dissatisfied.

Satisfaction with technological products is influenced by emotions. Feelings, such as novelty, surprise, trust, relief, awe, helplessness and resignation, have either positive or negative impact on satisfaction and are referred to as satisfaction modes (Fournier and Mick, 1999).

When technology enables a person to discover product's benefits over time, it generates novelty and leads to satisfaction. Similarly, satisfaction results from the feeling of respect and wonder (awe); for instance, an individual might be amazed by the internal complexity of the technology and the simplicity of its use. Consumers experience satisfaction from the feeling of relief which occurs when a product disconfirms negative expectation of the user, and trust that is built once the product is reliable and the user feels confident of its good performance (Fournier and Mick, 1999). Helplessness and resignation are examples of emotions that produce dissatisfaction. People feel helpless when they are dependent on the product or service due to the lack of alternative solutions. Meanwhile, resignation results from the passive acceptance; e.g. when a product is sufficiently good to be kept, but the purchase would not be repeated as better options are available. Rapidly developing technologies often promote resignation; individuals may stay with older-generation items as they cannot afford constantly replacing them (Fournier and Mick, 1999).

Another possible determinant of customer satisfaction is technology readiness (TR), defined as "people's propensity to embrace and use new technologies for accomplishing goals in home life and at work" (Parasuraman, 2000: 308). The most common drivers of technology readiness are optimism and innovativeness, while inhibitors are discomfort and insecurity (Parasuraman, 2000). High technology readiness is associated with the overall favourable perception of technology, the positive view on the idea that technology foster's one's efficiency, flexibility and control, and a tendency to adopt technological products in their early phase. Meanwhile, low technology readiness occurs when the individual feels overwhelmed by technological products, out of control, and distrust technology and its effectiveness (Parasuraman, 2000). Technology readiness positively influences satisfaction, that is, the higher the technology readiness, the more satisfied is the customer (Lin and Hsieh, 2007).

Possible sources of dissatisfaction with technologies include technical and functional failures and design problems (Meuter et al., 2000). The former refers to a technological breakdown during the interaction between the user and service, for instance an ATM machine failure (Meuter et al., 2000). According to Meuter et al. (2000) the negative effect of technological failure is more pronounced for users who depend on some ability of the service, e.g. its constant availability. Process failure is regarded as a breakdown of the process following

the user-service interaction; not receiving a product purchased over the Internet is an example in this sense (Meuter et al., 2000). Design problems refer to for example dissatisfactory service speed, confusing instructions and navigation problems (Meuter et al., 2000).

Consumers often experience contrasting feelings towards technological products. While technology benefits are overall appreciated, frustration and confusion may also arise from their use (Johnson et al., 2008). For instance, Kraut et al. (1988) suggest that the Internet is paradoxical as it is used for communication purposes but simultaneously decreases social involvement. Similarly, with the advent of online banking consumers enjoy more convenient banking services but at the same time might experience frustration when faced with service problems (Johnson et al., 2008). This phenomenon is referred to as technology paradox (Fournier and Mick, 1999). A paradox is characterized by the presence of simultaneous contrasting expectations or statements, for instance simultaneous advantages and disadvantages (Johnson et al., 2008). Table 4 presents and describes eight main technology paradoxes which include control/chaos, engaging/disengaging, assimilation/isolation, freedom/enslavement, new/obsolete, efficiency/inefficiency, fulfils/creates need, and competence/incompetence; consumers perpetually switch among these positive and negative experiences (Mick and Fournier, 1998). Technology might for example simultaneously enhance and discourage social involvement, respond to and make people realize about their needs and desires, increase and decrease one's activity, time and effort needed to perform a task, and foster the sense of both dependence and independence (Mick and Fournier, 1998).

Paradox	Description
Control/ chaos	Technology can facilitate regulation or order, and technology can lead to upheaval or disorder
Freedom/ enslavement	Technology can facilitate independence or fewer restrictions, and technology can lead to dependence or more restrictions
New/ obsolete	New technologies provide the user with the most recently developed benefits of scientific knowledge, and new technologies are already or soon to be outmoded as they reach the marketplace
Competence/ incompetence	Technology can facilitate feelings of intelligence or efficacy, and technology can lead to feelings of ignorance or ineptitude
Efficiency/ inefficiency	Technology can facilitate less effort or time spent in certain activities, and technology can lead to more effort or time in certain activities
Fulfils/creates needs	Technology can facilitate the fulfilment of needs or desires, and technology can lead to the development or awareness of needs or desires previously unrealized
Assimilation/ isolation	Technology can facilitate human togetherness, and technology can lead to human separation
Engaging/ disengaging	Technology can facilitate involvement, flow, or activity, and technology can lead to disconnection, disruption, or passivity

Table 4 – Main technology paradoxes by Mick and Fournier (1998).

Mobile technologies generate contradictory states and thus are paradoxical. The influence of paradoxical behaviour is more pronounced for mobiles as compared to other technological products as users tend to have close relationships with their devices. Customer experiences are context- and situation- dependent; social, cultural and technology factors impact user interactions with mobiles (Jarvenpaa and Lang, 2005). The mobile technology paradoxes include fulfils need/creates need, empowerment/enslavement, independence/dependence, competence/incompetence, engaging/disengaging, planning/improvisation, public/private and illusion/disillusion. Mobiles, thanks to their connectivity, allow solving a broad spectrum of problems, thus fulfil needs; however, they also create new needs of for example carrying a specific bag for the device or increased demand for privacy. In addition, consumers have the

constant possibility to access their phones, are connected anytime and anywhere, what increases their freedom. Although such freedom is empowering and enhances independence, it also makes difficult to keep one's distance and privacy and often leads to the habit of being constantly connected (Jarvenpaa and Lang, 2005). Consumers might receive phone calls during face-to-face conversations, thus they disengage from the current talk and engage in a new one. Although many of these conversations are private and personal, they often take place in a public sphere. Finally, mobiles simultaneously evoke illusion and disillusion. Consumers often hold high expectations towards mobile capabilities which are created by marketers. Many of these expectations are not fulfilled leading to disillusionment and frustration (Jarvenpaa and Lang, 2005).

Consumers involve in different strategies to manage technology paradoxes including avoidance, for example refusal on technology adoption, and confrontative strategies such as pretesting the product prior purchase (Mick and Fournier, 1998). Fournier and Mick (1999) introduced the balancing paradigm as a response to consumers' constant efforts to manage technology paradoxes. They suggest that, since paradoxes are inevitable part of technology use, consumers must accept and cope with them. Paradoxes produce tensions which can be resolved by consumers; maintaining balance is the best strategy in this sense and, if successful, leads to satisfaction (Fournier and Mick, 1999). For example, research suggests (Fournier and Mick, 1999) that consumers who effectively manage paradoxes involved in the ownership of televisions tend to experience less tensions and higher satisfaction. Similarly, owners of computers or automobiles constantly experience engagement and disengagement; their product satisfaction at least partially depends on the ability to manage this paradox (Fournier and Mick, 1999).

3 METHODOLOGY

3.1 Research approach

Research approach, also referred to as paradigm, involves beliefs that define one's perception of the world (Guba and Lincoln, 1994). The paradigm guides the research by, for instance, requiring the use of a specific research method and by defining the research strategy (Saunders et al., 2009). Major research views include positivism, interpretivism, realism and pragmatism. The former regards social reality as observable and assumes that observations of reality allow drawing generalizations. The philosophy of interpretivism emphasizes subjectivity and the role of different social actors. Realism stresses the existence of reality independent of the mind, while pragmatism the importance of the research question and the possibility to work under both positivist and interpretivist approaches (Saunders et al., 2009).

The objective of this study is to examine why certain mobile payment experiences were satisfying or dissatisfying, thus to identify the “reasons why” behind the phenomena (Sobh and Perry, 2005). The experiences are described from the users' perspective and thus might be perceived differently by individuals based on their world views and past experiences. Given that the study purpose is to develop answers to observed phenomena involving different individuals having own perceptions and perspectives, this research falls into the realist paradigm. Realists emphasize ontological realism (reality is seen as external that is independent from human knowledge, beliefs and thoughts) (Saunders et al., 2009), while accepting epistemological relativism (the world view is established through one's own perceptions and perspectives) (Maxwell, 2011). The research combines qualitative and quantitative measures to gain a deep understanding of the consumer experiences; the realist philosophy allows cooperation between quantitative and qualitative methods (Maxwell, 2011). Since the collected data is analysed using a content analysis method, the researcher has an impact on the overall research results; his/her individual world perceptions influence the study results interpretation (Saunders et al., 2009).

Given the lack of previous studies examining mobile payment satisfaction and the importance of customer satisfaction for businesses, the research is exploratory, i.e. it clarifies ambiguous phenomena and explores ideas with potential business significance (Zikmund et al., 2013). The research does not aim to provide conclusive evidence to drive the course of an action but is rather used as a first step guiding the further research. As an exploratory research, the

initial study direction might be shifted or narrowed as further research develops (Saunders et al., 2009). The study is conducted to gain an understanding of the phenomenon based on various sources, in this context secondary data and information from the survey including exploratory in nature open-ended questions.

3.2 Critical Incident Technique

The critical incident technique (CIT) is a qualitative research method which relies on a set of processes for collecting incidents having a high significance (Flanagan, 1954). Incident refers to an activity which is observable and allows drawing inferences about an individual performing it. It is critical when the observer can clearly define one's activity purpose and effect (Flanagan, 1954) and when the incident has a significant, positive or negative, impact (Gremler, 2004).

Introduced by Flanagan in 1954, the CIT method was first used to examine the effective and ineffective job behaviours. There are many methods for gathering critical incidents including interviews, group interviews, questionnaires and record forms (Flanagan, 1954). Regardless of the chosen data collection method, study participants are asked to describe their experience(s) (Gremler, 2004). The purpose of the critical incident technique is to “gain understanding of the incident from the perspective of the individual, taking into account cognitive, affective, and behavioral elements” (Chell, 1998: 56). The critical incident technique does not involve a uniform set of rules but rather should be adapted to best correspond to the specific study (Flanagan, 1954). Important first steps are formulating a general research objective and detailed instructions for the study participants. In addition, CIT is effective in gathering data when the respondent's motivation to remember the situation is high; particularly satisfying or dissatisfying experiences should be well remembered and thus easily recalled. The depth of the situation description determines whether the report is accurate; vague reports might indicate that the incident is not well remembered and thus it may contain incorrect information (Flanagan, 1954).

In the critical incident technique, the data is gathered from the respondent's perspective; the individual selects which incident is significant for him/her and has a control over the response content. This allows gathering rich data, including personal thoughts and opinions. The CIT is best suited for exploratory studies as to increase the knowledge on the phenomena that are not

yet well researched and documented. It allows defining concepts without prior hypotheses formulation and enables gathering relevant and concrete information which can be used for practical purposes. Although the benefits of the critical incident technique are evident, the method received criticism concerning its validity and reliability. The method can be distorted by recall bias and memory lapses, and the interpretation of incidents might be unreliable. The CIT requires considerable time and effort from the respondents, thus a low response rate is expectable and possibly incomplete pictures of the situation (e.g. lack of details) are sometimes provided (Gremler, 2004).

The CIT method was chosen for this study as it is well-suited for identifying the sources of satisfaction and dissatisfaction (Bitner et al., 1990). In fact, the CIT method has been successfully used in prior studies examining the sources of customer satisfaction and dissatisfaction with technology (e.g. Meuter et al., 2000). The critical incident technique is also effective in examining consumer perceptions (Bitner et al., 1990), what is the main objective of this study. As the current work is exploratory, the CIT is a natural research method choice. The flexibility of the technique was another motivation factor; the CIT was adapted to satisfy the requirements of this study.

3.2.1 Data collection method

Considering that the research required a large sample size to reliably identify and classify the mobile payment satisfaction sources, data was collected using an online survey. Surveys are well suited to exploratory research and allow gathering large amount of data in an efficient way (Saunders et al., 2009). In addition, the choice of survey was based on prior CIT studies; the majority of previous works employing the critical incident technique has used questionnaires to collect data (Gremler, 2004). Flanagan (1954) suggests that using questionnaires produces similar effects to that of interviews when the respondents are motivated to read the instructions and answer the survey. The study participants were paid for responding to the survey, thus a higher-than-usual motivation is expected.

Survey design and content

The survey was developed using the Qualtrics software and distributed among Qualtrics panel respondents. The survey (Appendix A) is composed by a combination of multiple-choice and open-ended questions. The multiple-choice questions allowed examining the respondents' relationship with mobile payments, while the open-ended questions provided insights into the nature of these relationships. Qualitative data obtained through open-ended questions made it possible to identify and categorize mobile payment satisfaction sources. The survey questions were developed based on the Flanagan's (1954) recommendations and adapted according to previous CIT studies such as in Meuter et al. (2000).

The survey began with a commitment statement requiring participants to agree to provide honest, precise, and complete answers to the survey. It was used to help gathering quality responses. The survey proceeded with the set of screener questions asking respondents, for example, whether they have any prior experience with mobile payments and can recall and describe their experience. Given that the survey was targeted to individuals somewhat familiar with mobile payments, those who did not qualify were thanked for their participation and directed to the survey end. The remaining respondents were shown different mobile payment solutions available in Finland, for example Apple Pay, MobilePay, PayPal Mobile and VR Mobile, and asked to indicate which solutions they have used. This question was used to clarify which types of solutions fall under the mobile payment umbrella. Further, the survey asked about the frequency and duration of the mobile payment use. Respondents were also asked to agree or disagree with the statements examining their propensity to adopt and use modern technologies (technology readiness). The statements were developed based on the four components of technology readiness discussed in Parasuraman (2000), namely optimism, innovativeness, discomfort, and insecurity. Each statement (e.g. *“Generally I have a positive view on technology”*) was examined on a 5-point scale ranging from strongly disagree (1) to strongly agree (5). Next, the survey examined the respondents' mobile payment experiences; participants were asked to *“think of a time when you had a very satisfying or dissatisfying experience with any mobile payment solution”* and to provide detailed answers to the open-ended questions. To ensure that the incident can be sufficiently remembered and recalled, the participants could choose any mobile payment solution available and decide whether they want

to report a satisfying or dissatisfying experience. The experience description was also guided by a set of questions such as:

- *What mobile payment solution did you think of?*
- *Did you have a satisfying or dissatisfying experience?*
- *Could you please describe your experience in detail?*
- *Why was this experience particularly satisfying/dissatisfying and memorable to you?*

Finally, the respondents were presented demographic questions concerning their gender and education. This information was used to characterise the sample and create statistical results.

Survey pre-test

To ensure that the study participants understand and correctly interpret the questions, the survey was pretested using the cognitive interview method. Cognitive interviewing is one of the most common methods used to determine and correct problems with survey questions design. It involves distributing the survey to potential respondents and collecting verbal feedback regarding the questions during or right after the survey completion. Cognitive interviews are used to discover the respondents' thought processes evoked by the survey questions, questions interpretation and the process of arriving to the answer (Beatty and Willis, 2007). In this study, the cognitive interviews focused on gathering information on questions clarity and interpretation. The participants were asked to think out loud while completing the survey. In addition, after completing the survey, they were asked whether they encountered any problems or ambiguities and can think of improvements. The cognitive interviews were conducted face-to-face. Given the assumption that a small sample size is sufficient to reveal survey problems (Beatty and Willis, 2007), the survey was pretested with a sample of six respondents. Some of the problems that emerged from the pre-test concerned the difficulty in naming mobile payment solutions, clarity of the response categories and similarity of some questions. All major issues identified during the pre-test were corrected prior to conducting the actual survey.

3.2.2 Data analysis

The critical incident technique is often categorized with data grouping methods such as factor and cluster analyses and multidimensional scaling; unlike the other methods, CIT most

commonly uses content analysis of stories for analysing data (Bitner et al., 1990). Content analysis, also known as thematic analysis, is a systematic procedure which involves transforming the communications content into a comparable data (Kassarjian, 1977) and determining patterns or themes within the data set (Wagner et al., 2012). The main characteristics of content analysis are objectivity, systematization, and quantification. Objectivity involves maximizing accuracy; all content analysis decisions should be made in accordance with pre-established rules to minimize the impact of the researcher's subjective predispositions on the results. Systematization means that the findings must be relevant and generalizable, while quantification that the data should be suitable for statistical analyses. Content analysis is appropriate for investigating such phenomena as for example product and brand image, most desirable product characteristics, and social values. It is especially useful for studies in which the expressions of the respondents are important (Kassarjian, 1977). Given that the aim of this research is to determine the mobile payment satisfaction and dissatisfaction sources as perceived by the users, the opinions of customers are highly significant. Thus, the content analysis is an appropriate analysis method.

Data analysis began with information coding, which was first performed on a paper and then repeated with the aid of the Atlas TI program. The analysis of the critical incidents began with creating a single document containing all data. Further, each response was read multiple times and the specific word(s), phrase(s) or sentence(s) describing the sources of satisfaction or dissatisfaction were marked and coded. Given the suggestions of Wagner et al. (2012), codes were underlined with distinct colours and the list of all codes was made on a separate paper. Each response was compared to existing codes and either assigned the existing or a new code; such process is known as a constant comparative method and was used to facilitate the categorization of the data (Wagner et al., 2012). The similar procedure of coding was repeated with aid of the Atlas TI program; the software is commonly used for qualitative studies to determine relationships and patterns among data. First, the frequency count (how many times certain words are used by the study participants) was obtained from the Atlas TI program to provide a broad view of the data. Further, the initial codes were saved within the system and the data set was re-read and re-coded.

After the final initial codes were developed, the similarities and relationships between the codes were identified. This process was used to determine the main sources of satisfaction and dissatisfaction with mobile payments and identify the subgroups within the main groups. The development of categories was intuitive, while focused on the research questions of this study. In addition, the categories were developed considering such dimensions as mutual exclusivity (each piece of data fits into a single category), congruency (categories represent the equivalent levels of abstraction) and exhaustiveness (all significant information is categorized) (Wagner et al., 2012).

4 FINDINGS

In total, 164 respondents completed the survey; 10 responses were excluded from the analysis as they contained incomplete or invalid data. The final sample consists of 154 incidents (Appendix B), 140 (91%) satisfactory and 14 (9%) dissatisfactory. Although focusing on a satisfactory incident description, four respondents also mentioned dissatisfactory aspects, which were additionally included in the analysis. The respondents spent on average five minutes to complete the survey; the minimum duration was two minutes, while the maximum twenty-two minutes.

Overall, the sample is composed of Finnish citizens that can speak English and are aged over 18 years old. The respondents are at least somehow familiar with mobile payment solutions and had previous experiences which they could recall and describe. In fact, 41% of the respondents use mobile payments on a regular basis, that is, either daily or at least once a week, while 47% pay with a mobile device at least once a month. In addition, the majority of study participants (65%) have been using mobile payments for more than half a year (see Table 5). The respondents consist of individuals with relatively high technology readiness, i.e. propensity to adapt and use new technologies. Table 6 presents statistical information on the four technology readiness components and the overall technology readiness index (TRI) of the sample. The study participants rank relatively high on the technology optimism, while their view of innovativeness is neutral. Scores for both discomfort and insecurity are low, and once reverse coded lead to a high overall TRI. The mean technology readiness of the respondents is much higher compared to the score of average consumers owning technological products, whose TRI varies between 2.9 and 3.12 (Chang and Kannan, 2006). Although there are single respondents with low TRI (the minimum = 2.25), the majority of them reach a score that is close to the average as indicated by the low standard deviation. In addition, the skewness, which is close to 0, indicates that the distribution of TRI scores is relatively symmetrical, while the slightly negative kurtosis implies small variance among dataset.

Variable	Percentage
Duration of mobile payment experience	
Less than 3 months	11
3 to 6 months	24
7 to 12 months	18
13 months to 2 years	25
More than 2 years	22
Frequency of mobile payment use	
Regularly (daily or almost daily)	7
Often (at least once a week)	34
Sometimes (at least once a month)	47
Rarely (few times a year or less)	12

Table 5 – Percentage distribution of the duration and frequency of mobile payment use.

TR components	Mean	Standard Deviation	Skewness	Kurtosis
<i>Optimism</i>	4.02	1.05	- 1.34	1.46
<i>Innovativeness</i>	3.12	1.02	- 0.16	- 0.51
<i>Discomfort</i>	2.44	1.06	0.32	- 0.76
<i>Insecurity</i>	2.23	1.17	0.70	- 0.53
Overall TRI	3.62	0.67	- 0.11	- 0.46

Table 6 – Statistical information on technology readiness index and its components

(TRI components were measured on a 5-point scale. TRI was calculated by averaging the scores of four components with discomfort and insecurity being first reverse coded).

The demographic information of the sample is summarized in Figure 3. A balance between genders can be observed and two age groups are dominant: 18 – 29 (48%) and 30 – 49 (47%), while a significant minority is aged over 50 years old (5%). Most participants completed or are

currently enrolled to a higher-education institution (64%), from which 44% hold a university degree (i.e. Bachelor’s, Master’s or Doctorate) and 20% are attending. The remaining respondents have completed trade/technical/vocational training (18%), high school or equivalent (16%), and others (2%). A generic sample description that fits the data is *young/mid-aged individuals with post-secondary education*. It consists of experienced and frequent mobile payment users with above average tendency to adopt and use new technologies.

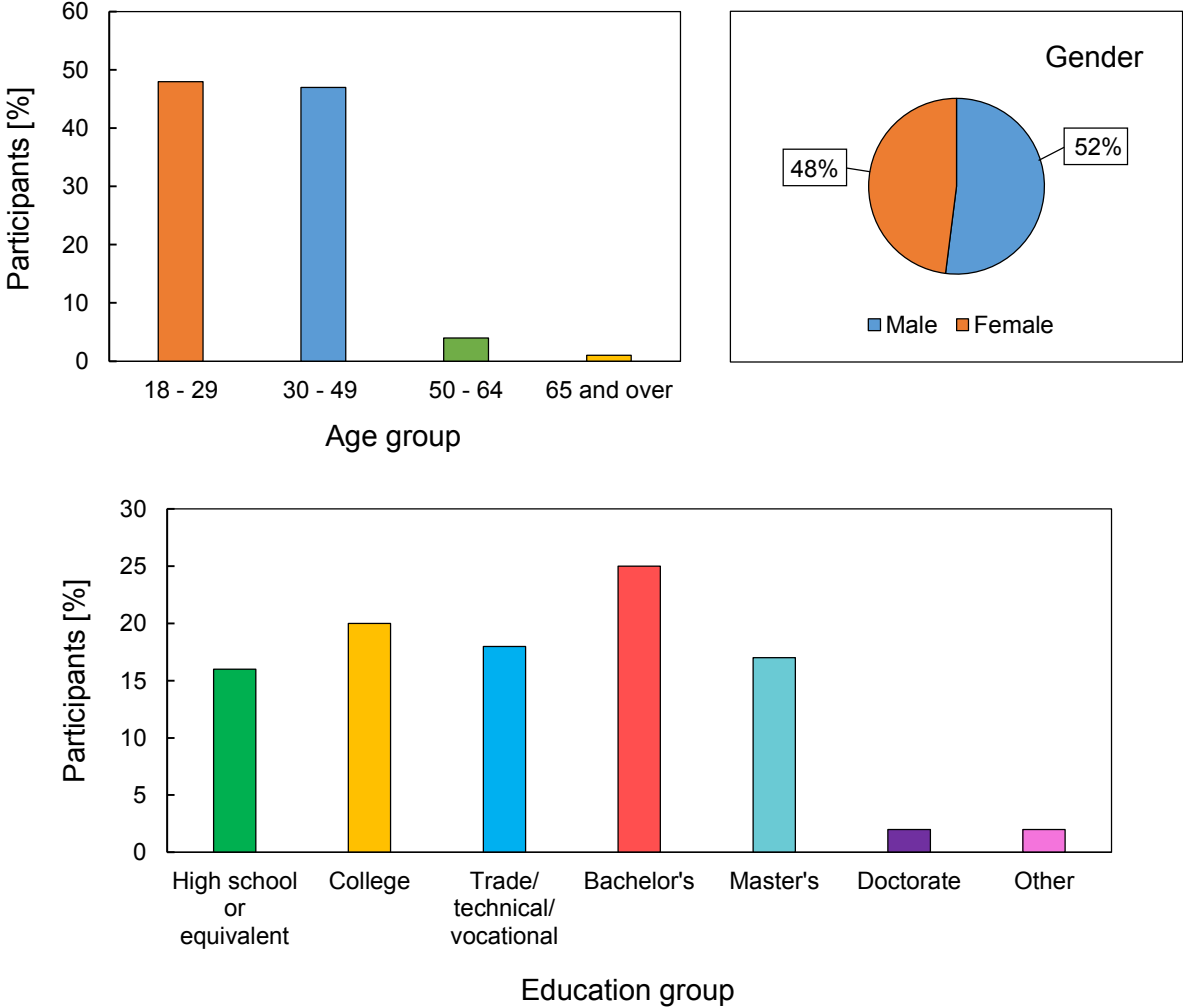


Figure 3 – The demographic information of the sample.

The results show that significantly more respondents (91%) were able to recall and describe a satisfactory rather than dissatisfactory (9%) mobile payment experience, suggesting that the

overall perception of mobile payment applications is favourable. The most frequently mentioned mobile payment solutions were PayPal Mobile, MobilePay, and mobile banking applications (see Figure 4), including Nordea Mobile Bank, OP-mobile, and Danske Mobile Bank. The popularity of PayPal Mobile and MobilePay among respondents is consistent with the statistics found in the literature (Statista, 2016); these applications are overall the most popular in Finland. In addition to the alternatives provided, many respondents mentioned other mobile payment solutions, for instance in-app (e.g. Apple App Store) or mobile web (e.g. Pizza-online.fi) payments. Despite its worldwide popularity, Apple Pay was mentioned by merely 4% of the study participants. It is worth note that the service was launched in Finland only in 2017, what might explain this statistic.

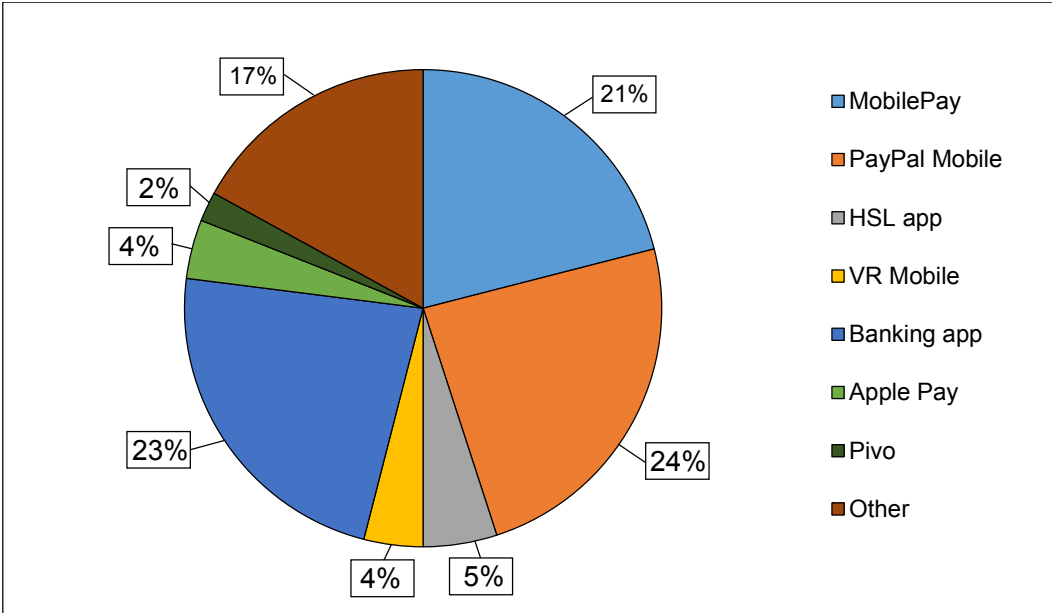


Figure 4 – Percentage distribution of mobile payment solutions mentioned by the respondents.

4.1 Satisfaction sources

The main satisfaction sources that emerged from the data analysis are, in descending order of incidents: convenience, efficacy, security and problem-solving. The percentage distribution is shown in detail in Figure 5. Overall, convenience is the most discussed source of customer satisfaction with mobile payments; it can be divided into sub-categories as shown in Fig. 6.

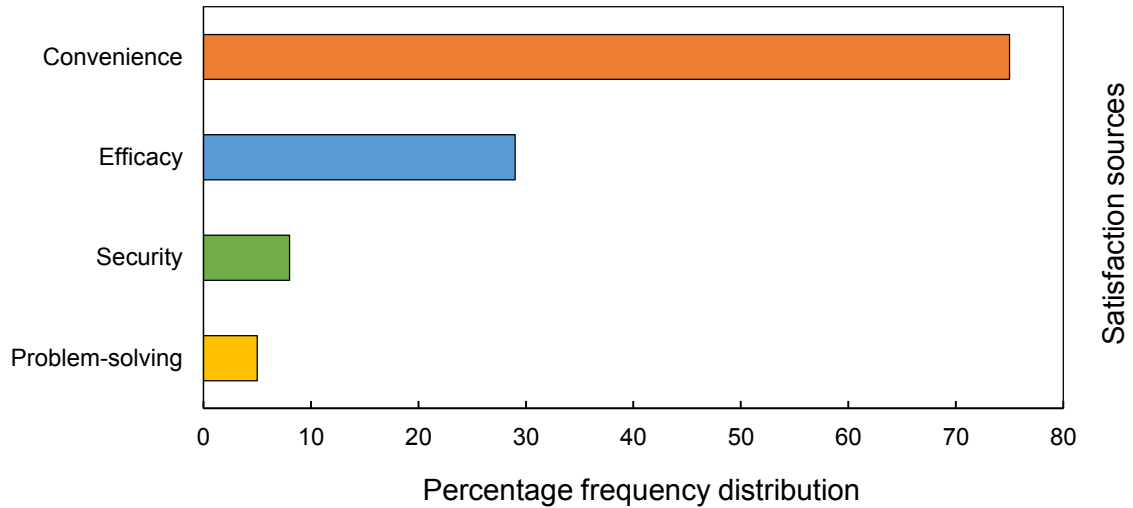


Figure 5 – Total percentage distribution of the satisfaction sources
 (Percentages refer to the total number of respondents (n=154). The majority of study participants mentioned more than one source of satisfaction).

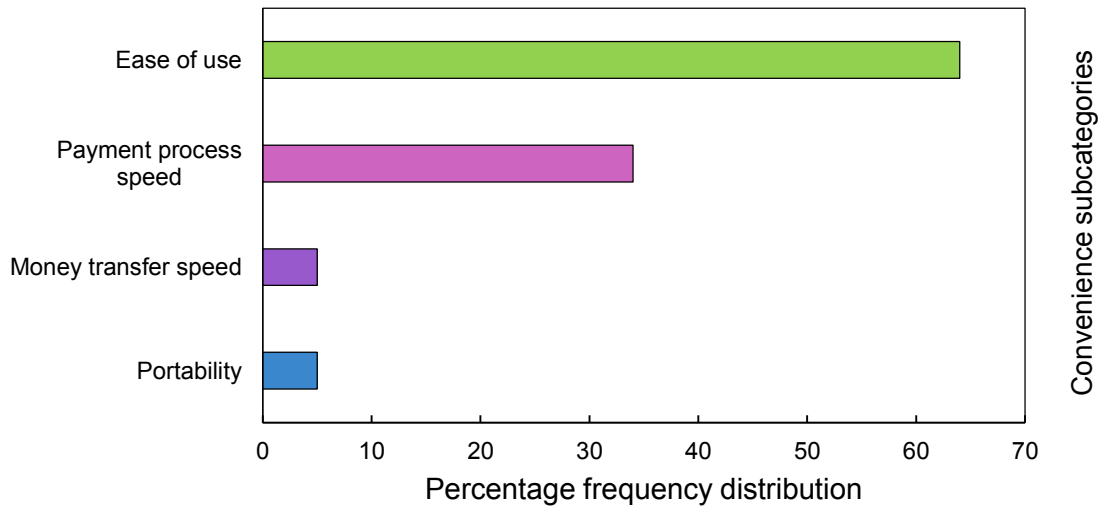


Figure 6 – Percentage distribution of the satisfaction sources under the convenience group
 (Percentages refer to the total number of respondents (n=154). The majority of study participants mentioned more than one source of satisfaction).

4.1.1 Convenience

Figure 5 shows that the majority of respondents identified convenience as a satisfaction source in the context of mobile payments. Mobile payments allow consumers to make payments easily,

fast, and efficiently. The convenience mentions are analysed next based on the sub-divisions proposed in Fig. 6.

Ease of use

Overall, 64% of the respondents mentioned ease of use as a source of satisfaction. The study participants referred mostly to the simplicity of the payment process. Although the procedures vary among different providers, most mobile payments can be completed with few simple steps. For example, one respondent using the OP-mobile app described that the process only required scanning the barcode and approving the payment: *“I did not have to write that much, just took a photo of the barcode. Then just approved payment with OP password”*. Similarly, another study participant recalled that the only step required to start shopping with the Zadaa app was to add his/her card details: *“Very easy. I just added my debit card number in the app. Now I can buy clothes with one click”*. Satisfaction also aroused from the clear instructions to complete a mobile purchase, and from the elimination of complex steps that might be required in other payment methods. For instance, one participant who used MobilePay to purchase beverages claimed: *“MobilePay nearpaying was very easy because I did not need to use PIN-code in shop”*. Finally, some study participants recognized that payments are straightforward regardless of the payment characteristics, that is, whether they refer to paying a bill, transferring money or making a payment of small or large monetary value.

Payment process speed

Payment process speed was described by 34% of the study participants and was often mentioned together with the ease of use. Overall, the respondents suggested that the swift payment process speed in comparison with traditional methods foster satisfaction. In the incidents, time-saving technologies that are included in mobile payment solutions were highlighted (*“I pay all my bills, if possible, with Nordea app (...) it makes it even quicker when I scan the code of the bill.”*), as well as the reduced amount of stages in the payment process (*“It was so fast. I just pushed the ok button”*). For some respondents, quicker payment was an especially important satisfaction driver due to their active lifestyle: *“(...) MobilePay took only a minute. Because it was so quick, and I have so much to do I was satisfied with the time it took”*.

Money transfer speed

The money transfer speed was the satisfaction source for 5% of the study participants. The related incidents focused on the ability of mobile payment solutions to quickly deliver money after the payment was issued. The respondents experienced satisfaction as their payments were transferred immediately (e.g. *“I was paying to online shop and my money were transferred instantly”*) or were processed faster than by using alternative payment methods (e.g. *I’m used to paying through my bank account and it is taking a long time for the payment to go through (...) with PayPal Mobile, it was almost instantaneous”*).

Portability

Portability was mentioned as a cause of satisfaction by 5% of the respondents. Overall, they suggested that, by eliminating the inconvenience of carrying physical tokens, mobile payments generate satisfaction. The physical tokens mentioned in the incidents include wallets (e.g. *“It is satisfying, because you can just use your phone, you do not actually need your wallet”*), credit and debit cards (e.g. *“(…) but now I don’t even need a card because I have a mobile device”*) and cash/coins (e.g. *“Paid for car parking. I never need to think that I must have coins or cash notes ready when I want to park my car into non-free parking area”*). Another feature of portability addressed in the incidents was the ability to make payments on the go; that is, without the need of accessing a computer or a banking device such as an ATM.

4.1.2 Efficacy

Efficacy was the second most commonly mentioned source of satisfaction. Overall, 29% of the respondents referred to the ability to perform the intended service as a satisfactory feature of the underlying mobile payment solution. Most commonly, satisfaction resulted from the capability to make a successful payment (*“The payment succeeded. It worked”*). In several incidents, the users were surprised by the performance of the mobile payment solution at hand (for instance, *“I paid using mobile bank and it worked surprisingly well!”*). Others were just satisfied that the application worked without any problems (*“I pay with PayPal mobile all the time when I shop online (...) I have never had any problems”*).

4.1.3 Security

In 8% of the incidents, the security of the transaction was mentioned as a satisfaction source. In general, mobile applications generate a feeling of trust, making the user feel confident that his/her money are managed securely. Most respondents simply referred to safety without including any experience details. For some individuals, however, the security feeling was associated with a specific trusted application. For instance, one individual describing his/her experience with Nordea Mobile Bank mentioned: *“I pay all my bills, if possible, with Nordea app (...) I trust the app (...).”* In this case, the feeling of trust motivated the person to use the same mobile payment solution for all transactions.

4.1.4 Problem-solving

In total, 5% of the respondents referred to problem-solving as a source of their satisfaction. Problem-solving can be described as the possibility to use mobile payments in the situations when alternative payment methods fail or are not available. For example, one female respondent described that a mobile payment solution allowed her to finalize a payment when she forgot cash and could not pay with her card: *“I paid for the hairdresser's price with mobile payment. I didn't have any cash with me and a payment card reader had some connection problems. But somehow mobile payment worked when nothing else did.”* Similarly, as a result of its wide accessibility, a mobile payment app provided a solution to another study participant whose situation urgency required a fast and easy payment method: *“I made a purchase on eBay. I was in hurry and could not find my card so payment via PayPal was fast (...).”*

Source of satisfaction	Example
Convenience	
Ease of use	<i>“It was very easy. I did not have to write that much, just took a photo of the barcode. Then just approved payment with OP password.”</i>
Payment process speed	<i>“I paid a HSL ticket to Metso by SMS. The service worked quickly (...)”</i>
Money transfer speed	<i>“I paid for the hairdresser's price with mobile payment (...) I didn't have to wait for many days that money transfer was done.”</i>
Portability	<i>“Paid for car parking. I never need to think that I must have coins or cash notes ready when I want to park my car into non-free parking area.”</i>
Efficacy	<i>“I did pay for a product that I bought online and everything went well and smoothly. Wendor received a payment and I received a product.”</i>
Security	<i>“I used the application to get a train ticket on board and I paid for that later, in connection with my phone bill. I didn't need any cash or credit card or online paying, it was safe.”</i>
Problem-solving	<i>“I forgot my wallet in the pocket of my jacket and remembered it only when I was on the line to get food at my school's cafeteria. Then I remembered that the cafeteria allows people to pay via MobilePay, and given that I had experience using it, I paid with it. At the cashier there was a small placate with MobilePay, and I placed my phone on top of it and proceeded to pay with it. (...) It gave a solution to my problem and didn't result in any hassle.”</i>

Table 7 – The sources of customer satisfaction with example quotes.

4.2 Dissatisfaction sources

Given that the number of dissatisfactory incidents is low, the sample size does not allow to draw statistically significant conclusions. Within the limited data collected, it is observed that the sources of dissatisfaction are opposite to the satisfaction sources, falling mainly into the umbrellas of complexity and inefficacy (Figure 7). The following sections discuss them, and briefly cover mentions of other dissatisfaction sources.

4.2.1 Complexity

Complexity was mentioned by 3% of the study participants. In particular, the incidents revealed that some mobile applications are complicated to use (“(...) *it was also pretty complicated in comparison to other apps I have used to start using Nordea’s mobile option*”), leading to overall payment dissatisfaction. In addition, some respondents mentioned that the registering process was difficult, the application did not provide clear instructions and the payment process was overall confusing.

4.2.2 Inefficacy

For some respondents (4%), dissatisfaction resulted from the inability of mobile payment solution to accomplish the desired money transfer function. The incidents in this category mainly described that the applications were not working properly and therefore the user was not able to conduct the payment (“*It did not work, and my phone crashed. I could not pay my friend over the internet*”). Inability to perform such basic service as money transfer is particularly frustrating to the users: “*My purchase didn’t go through. It is really annoying to have problems with paying*”.

4.2.3 Others

In total, 5% of the study participants mentioned other sources of dissatisfaction related to mobile payments. They included for instance the slow performance of a given mobile payment application, the feeling of insecurity in providing confidential data and extra costs involved in for example making money transfers through PayPal.

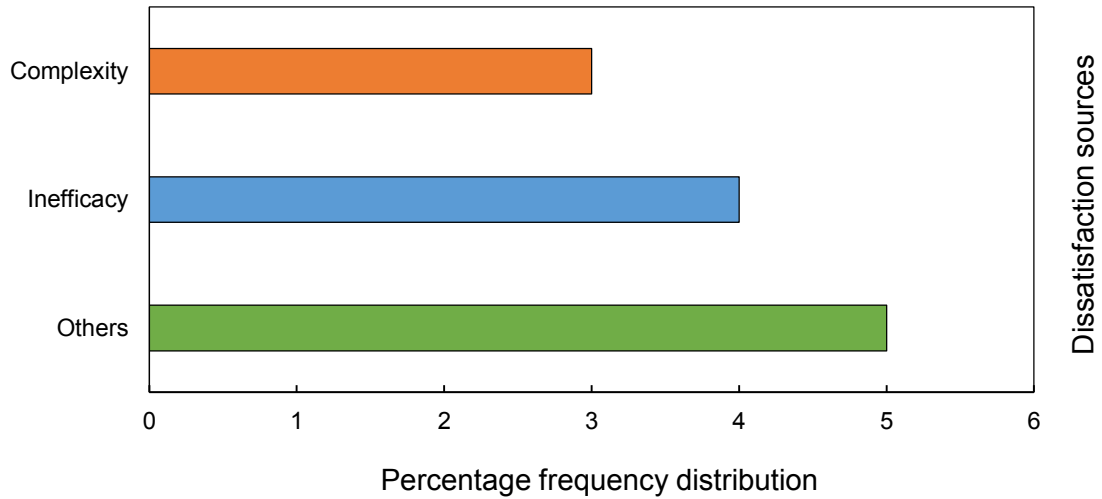


Figure 7 – Total percentage distribution of the dissatisfaction sources (Percentages refer to the total number of respondents (n=154)).

Source of dissatisfaction	Example
Complexity	<i>“There were problems with passwords and confusion between my mobile and PC accounts. At last I managed to pay but it was confusing.”</i>
Inefficacy	<i>“Tried to buy ticket with VR Mobile. First couldn't load the application to my smart phone. Then the application just didn't work. I tried several times - no success (...)”</i>
Others	<i>“It took a while to fully trust it (...) because I was worried that it would be easily hacked, and my information stolen.”</i> <i>“It often requires paying extra for these mobile payments so that is not fun.”</i>

Table 8 – The sources of customer dissatisfaction with example quotes.

5 DISCUSSION

The present study revealed that users are satisfied with mobile payments; significantly more study participants chose to describe a positive experience with a specific mobile payment solution. Given the tendency of humans to remember and recall negative situations more easily than positive (so-called negativity bias, e.g. Rozin and Royzman, 2001), this finding emphasizes a strong positive perception towards mobile payments. The inclination towards satisfaction can be explained by the mobile payment capabilities and conveniences. Mobile payments simplify and accelerate payment processes that were once time-demanding, and are available in the same mobile devices used for other professional and personal daily tasks. Moreover, they eliminate the need of carrying additional tokens such as cash or cards and inputting passwords. Overall, mobile payments respond to the expectations and desires of the modern consumers, and this fulfilment might be the key satisfaction driver as discussed by Fournier and Mick (1999).

The sample characteristics likely influence the distribution of incidents and significant inclination towards the positive perception. The study participants consisted of individuals with high technology readiness, which is a driver of satisfaction with technology (Lin and Hsieh, 2007). In addition, the majority of the respondents were frequent and experience mobile payment users. The continued use has been certainly fostered by a continued satisfaction (Wang et al., 2013). Finally, the age of the study participants might impact the dominant positive perception; younger individuals are overall more confident in learning and using new technologies and experience less adoption problems (Liébana-Cabanillas et al., 2014).

The critical incidents revealed that the major sources of satisfaction with mobile payments are convenience, efficacy, problem-solving and security. These findings are consistent with the literature on satisfaction and technology; most of the identified satisfaction sources were discussed previously either as satisfaction and/or quality determinants (e.g. Meuter et al., 2000; Parasuraman et al. 2005; Bauer et al., 2006). Convenience is the most prevailing theme in the gathered data. Similarly to the online versus physical shopping, mobile versus traditional payments bring customers a convenience advantage (Szymanski and Hise, 2000; Hayashi, 2012). Convenience has been discussed alongside such dimensions ease of use, speed, and portability (Hayashi, 2012). Likewise, the respondents mentioned these attributes as a source of their satisfaction with mobile payments.

Ease of use is an important source of satisfaction with technologies overall. Meuter et al. (2000) identified that self-service technologies foster satisfaction by offering clear instructions and straightforward processes. Similarly, uncomplicated processes and instructions were found to evoke satisfaction with mobile payments. In particular, the elimination of complex stages involved in the traditional payment methods has been deemed satisfactory. Given the fierce marketplace competition, ease of use is critical for a payment method to become popular and thrive against its competitors. Respondents have often reported satisfaction with the payment process speed when discussing ease of use, both being convenience-related attributes that are important to consumers. Technology facilitates the transactions by reducing number of payment stages and providing time-saving technologies such as fingertip identification or barcode scanning. Although the incidents emphasized the ability of mobile payments to increase payment process speed, they did not consider speed as a relative advantage but rather a general positive feature. Speed was also mentioned in the context of an outcome (that is, payment) delivery. Mobile payments enable quicker money transfers than most alternative payment options, and foster satisfaction in similar way as order processing time influences the quality of electronic service evaluations (Bauer et al., 2006). Portability is another convenience-related satisfaction source that has been reported. Previous studies referred to portability as a mobile payment advantage, given its flexibility relation to time and location (Mallat, 2007; Zhou, 2013). However, these studies did not investigate it in the context of customer satisfaction. The present research reveals that the ability to use mobile payments independent of time, location, the possession of additional tokens (e.g. cash, card) and equipment (e.g. computer, bank platform) promotes satisfaction. Mobile devices are constantly present in the modern life, thus payments can be conducted virtually anytime and anywhere.

Another major satisfaction source, efficacy refers to appropriate technical functioning and involves incidents which explained that mobile payment simply worked i.e. processed the payment without any problems. Some users were surprised with mobile payment capabilities. Functionality as a determinant of quality and satisfaction has been previously discussed in the context of electronic services (e.g. Parasuraman et al., 2005; Collier and Bienstock, 2006) and self-service technologies (Meuter et al., 2000). It is important to note that satisfaction often arises from the functional ability when the technology is new (Meuter et al., 2000). As mobile payments are still in an initial development stage, their ability to perform main functions is

satisfying. In the future, when mobile payments will become more common, the users expectations are likely to grow and efficacy might not be enough to foster satisfaction.

Conducting a payment, especially of high monetary value, through a mobile device is likely to generate security concerns. In fact, perceived risk is one of the main mobile payment adoption inhibitors (Mallat, 2006). Therefore, the finding of a positive impact of security on satisfaction with mobile payments is surprising. The respondents judged security mainly based on the company reputation, which was found to have a significant impact on security perceptions overall. It is important to note that study participants had past experience with mobile payments, what impacts their security perceptions (Barnes and Vidgen, 2002). Thus, extrapolations of this finding should be considered with caution.

The final satisfaction source identified from the incidents, problem-solving, involves situations in which the customer was able to use mobile payment when other payment instruments failed or were not available. Mobile payments which are not conducted at the POS only require Internet connection, and therefore are not dependent on external technology. Meanwhile, for example, card payments always require a terminal, which in case of failure prevents the transaction. Due to its high accessibility and flexibility, mobile payments are well-suited to be used when alternative payment methods fail. Smartphones are constantly carried by most owners, and can therefore replace cash or card in an emergency situation. In similar context, the ability of technology to help users in urgent situations was previously addressed in the context of STTs (Meuter et al., 2000).

In this study, the dissatisfying incidents were caused mainly by complexity and inefficacy. The former incidents emphasize that mobile payments include complicated stages and therefore may cause confusion and ultimately dissatisfaction. Meanwhile, the latter simply refers to the mobile payment inability to perform an expected payment function. As traditional payment methods, especially card payments, are still predominant any problems associated with the use of mobile payment will probably cause the customer to switch to card payment. Another option is to select an alternative mobile payment provider. Although only two groups of dissatisfactory sources emerged due to limited data, the single incidents confirm that some customers feel insecure while using mobile payments, and experience additional problems due to the use of a mobile payment solution. The influence of technology failure on customer dissatisfaction was

discussed by Meuter et al. (2000), however no previous study has examined the effects of complexity or insecurity.

The sources of customer dissatisfaction with mobile payments, although identified based on a limited number of incidents, reveal the technology paradox commonly discussed in the literature (e.g. Fournier and Mick, 1999; Mick and Fournier, 1998). The respondents experienced contrasting feelings towards mobile payments, for example applications were considered to be simultaneously easy and complex to use. It is possible that certain mobile payment solutions are in fact more straightforward than others. However, it is also likely that individual predispositions impact one's perceptions; e.g. for individuals who often use modern technologies, mobile payments might seem easier to use as compared to the infrequent technology users. The ease of use/complexity paradox is similar to efficiency/inefficiency technology paradox identified by Mick and Fournier (1998). Technological products can facilitate and/or hinder certain activities (Mick and Fournier, 1998). Likewise, easy to use mobile payment applications would facilitate the payment process, meanwhile complex applications would have an opposite effect. The clarity and functionality of a given mobile payment app might have an impact on the mobile payment process speed. The respondents recognised that mobile payments might lower or increase the overall payment process time. An Efficacy/inefficacy paradox has been also identified among the incidents; while for many users satisfaction resulted from the ability of mobile payments to simply perform its function, for others, who experienced functionality problems, it was a source of dissatisfaction. Mick and Fournier (1998) addressed this paradox by referring to competence/incompetence of technology. Single incidents also suggested that mobile payment applications can evoke the feeling of security and insecurity; e.g. applications released by reliable and popular brands might be seen as safe, meanwhile smaller and less common solutions as less secure. In fact, mobile payment solutions differ in their level of security, i.e. some applications offer more advanced authentication options than others. Although the remaining satisfaction sources have not proven to cause contradictory feelings, the paradoxical characteristics of mobile payments can be further assumed. For instance, mobile payments were found to help users in urgent situations i.e. when other payment methods failed or were not available. However, mobile payment applications can also lead to payment problems, and might not be always available considering the current merchant acceptance level. In addition, portability of mobile payments discussed in

the incidents relates to the greater independence and fewer payment restrictions, thus can be compared to the freedom of technology discussed by Mick and Fournier (1998). Although technology facilitates freedom, it also leads to increased dependence on the mobile device.

5.1 Theoretical implications

Due to the growing popularity of mobile payments and the importance of customer satisfaction for marketers, research examining mobile payment satisfaction has been deemed necessary. Prior to this study, little theoretical knowledge on this phenomenon has been reported. The present research contributes to the literature on customer satisfaction and mobile payments by 1) identifying the sources of customer satisfaction and dissatisfaction with mobile payments, 2) examining the overall perception of users towards mobile payments, and 3) finding support for the presence of mobile payment technology paradoxes.

Although satisfaction determinants are, in general, widely discussed in the literature, the number of studies examining it in a technology context is limited. In particular, few contributions investigate satisfaction in the context of self-service technologies (e.g. Meuter et al., 2000), or examine quality, antecedent of satisfaction, with reference to electronic services (e.g. Parasuraman et al., 2005; Bauer et al., 2006). The present study is the first to determine the sources of customer satisfaction with mobile payments. The underlying sources have been found to be similar to those discussed in the context of SSTs and online shopping websites. Based on the descriptions obtained from a questionnaire, the roles of convenience, efficacy, security, and problem-solving at driving satisfaction are discussed in detail. Furthermore, the research explores the impact of complexity and inefficacy on customer dissatisfaction.

The study also emphasizes the positive perception of customers towards mobile payments and draws conclusions based on the sample characteristics and evidences obtained from the answers. In addition, the research findings suggest that the sources of customer satisfaction and dissatisfaction are opposite. This provides evidence of the presence of mobile payment technology paradox. The identified mobile payment paradoxes are briefly discussed and compared to the technology paradoxes identified by Mick and Fournier (1998).

5.2 Practical implications

In our contemporary days, technology is an inseparable element of life, and consequently of the marketplace. Consumers are constantly offered novel solutions for completing payment services. Understanding how the users perceive current mobile payments and what drives their satisfaction or dissatisfaction is important for the mobile payment providers, merchants, and consumers.

Knowing what drives user satisfaction can help mobile payment providers to develop more successful future applications and improve the existing solutions. The identification of the core mobile payment satisfaction sources will enable the service providers to focus on the most important service attributes, thus providing customers with a better experience. This can ultimately lead to an increased number of mobile payment users. The attributes that the mobile payment providers should focus on during the development phase are summarized in Figures 5 and 6. Based on the study conclusions, managers and developers should emphasize efficacy and convenience. It must be ensured that the mobile payment services work as expected, i.e. that the payment can be completed without technical problems in a convenient, user-friendly manner. In fact, ease of use has been found to be the most important satisfaction source overall. Therefore, developing simple mobile payment applications should be a priority.

A further recommendation is that the satisfaction drivers should be emphasized during the promotional activities to attract customers. Consumers often select products and services based on the attributes which are important to them (MacKenzie et al., 1986). For instance, a potential advertisement campaign could illustrate an individual paying with a mobile device by positioning his/her phone towards the reader screen, successfully completing the payment within seconds. Such advertisement would highlight that mobile payments are easy and fast to use, and therefore appeal to the users seeking convenience. Promotional activities could also emphasize the overall positive perception of consumers towards mobile payments. For instance, an advertisement could show that the wide majority of current users are satisfied with mobile payment services, thus persuading non-users to try it as well.

The positive perception of consumers towards mobile payments should motivate merchants to accept mobile payment services. The number of mobile payment users is likely to maintain or grow. Given that a direct experience with a product or service has an impact on the future

behaviour (Glasman and Albarracin, 2006), the current customers will continue using mobile payments. To respond to this trend, merchants should embrace mobile payments by either accepting any of the available solutions (thus performing an acquirer role) or developing their own services (issuer role) (Dahlberg et al., 2008). In this study, it has been observed that MobilePay, mobile banking applications and PayPal mobile are the most used mobile payment solutions in Finland, in line with the statistics published in Statista (2016). This information can help merchants to decide which of the available solutions is best to offer to their customers.

Based on the survey results, it can be observed that individuals who use mobile payments have high technology readiness. This consumer group should therefore constitute the main target market for the mobile payment providers. Identifying the target market can help companies to focus on the most profitable customers by, for instance, communicating customised messages and reaching the audience through the most effective channels. For example, individuals with high technology readiness can be effectively reached by technological platforms such as social media.

Finally, recognizing that mobile payments can generate contrasting feelings should motivate companies to ensure cross-platform interoperability. Firms should provide consumers with seamless experiences independent from e.g. used operating system or mobile phone brand. This would ensure that each user has the exact same experience. In fact, cross-platform interoperability is deemed as significant in reaching a critical mass of customers.

5.3 Study limitations and directions for further research

The study was based on the critical incident technique, which as a research method has its limitations. First, since CIT relies on the past incidents description, it might be distorted by memory lapses and recall bias (Gremmler, 2004). As the described mobile payment experiences occurred at some time prior the data collection, they might not be well remembered, and in consequence misinterpreted by the respondents. Second, the majority of CIT questions were open-ended, therefore required considerable time and effort from the study participants. Although most respondents provided comprehensive answers, some of them did not include the incident details. The incidents that lacked details could be misinterpreted in the data analysis as they did not provide a complete picture of the situation. In addition, since the critical incidents

were reported through an online survey, there was no possibility to ask additional questions in case of, for instance, ambiguous answers. The researcher relied on own interpretations, what could have a further impact on the data analysis. The reliability of the identified satisfaction/dissatisfaction sources could be questioned by the presence of only one researcher (judge) to categorize the data. To limit this bias, information was read and sorted multiple times prior establishing the final categories and subcategories. Still, the researcher's background and past experience often has an impact on the findings.

Selecting an online survey as a data collection method poses limitations. Since surveys are self-administrated, there is no direct contact between the researcher and respondents. As a result, the researcher has no influence on the study participants and cannot motivate in-depth answers. The researcher also cannot clarify the instructions in case of any ambiguities, what might impact the responses quality (Evans and Mathur, 2005). Future studies should focus on examining customer satisfaction with mobile payments using more ethnographic methods, for example through interviews. It would allow gathering more comprehensive data, examining the causes behind one's perceptions and the incident-related emotions. Future research could also further explore the identified satisfaction/dissatisfaction sources using qualitative methods. For instance, considering that ease of use is the most important for customers, the research could examine in more details what constitutes the attributes of easy-to-use mobile payment applications. It would be also valuable to examine what elements contribute to the perception of security in the context of mobile payments.

Although the sample of experienced mobile payment users was appropriate for the purpose of gathering rich data, it possibly constitutes a research limitation. Previous experience in related technologies increases one's view of ability and self-confidence and impact recognition of reward (Meuter et al., 2005). It is therefore likely that mobile payment users with high technology readiness have overall a more positive attitude towards modern technologies, such as mobile payments, as compared to the general population. They might therefore recognise more benefits of mobile payments than the average person and disregard some of technology disadvantages. This bias could impact the findings and prevent from identifying more customer satisfaction and dissatisfaction sources. The selection of sample characteristics was rather natural i.e. resulted from the fact that mobile payments are still less widespread among

consumers than alternative payment methods and used mostly by technology-driven individuals. In the future, it would be valuable to examine how individuals who are less prone to use new technologies perceive mobile payments and what drive their satisfaction or dissatisfaction. Since such individuals use technology less frequently and are less comfortable with it, they might raise to a greater extent such issues as complexity and insecurity. Understanding the differences in the perception of mobile payments between individuals with high and low technology readiness can help in segmentation and targeting. An additional sample characteristic is that, as the survey was distributed among Qualtrics panel respondents, it reached individuals who are active Internet users. The sample was therefore skewed to certain attributes that might not be representative of the whole population.

The study was conducted in Finland, where the user penetration of mobile POS payments estimated approximately 7% in 2017, and the total transaction value was €265 million (Statista, 2018a). To compare, in the United States the penetration rate in the same year estimated 15%, while the total transaction value amounted to €65409 million (Statista, 2018b). These statistics emphasize that the degree of mobile payment adoption varies among countries. In fact, culture was found to have a significant impact on the mobile payment adoption and use. For instance, perceived usefulness was found to be an important mobile payment adoption factor in western cultures, while perceived ease of use was the most important adoption factor in eastern cultures (Zhang et al., 2012). Accordingly, it is possible that different cultures perceive mobile payments more/less favourably and recognize different satisfaction and dissatisfaction sources. This constitutes an area for future research.

As initially stated, the research herein presented is exploratory and does not aim to provide conclusive evidence but rather guide future research. Although data saturation was achieved in relation to the satisfactory incidents, the number of dissatisfactory incidents was not sufficient to reliably identify the sources of customer dissatisfaction with mobile payments. Further research could take a closer look into dissatisfaction. For example, it would be worth analysing online reviews of specific mobile payment applications to determine the content of the negative word of mouth. Also, future studies could specifically ask the respondents to report dissatisfying aspects of their experiences.

Future research could distinguish among different mobile payment categories while evaluating the customer satisfaction and dissatisfaction sources. In this study, the respondents were asked to describe an incident with any mobile payment application available and the data was analysed in relation to all applications. However, there exist different mobile payments categories according to different criteria, such as payments conducted dependently or not from the point-of-sale. Future research could evaluate whether there exist any differences in the user perception and reaction according to such categories. For example, it is possible that in-store payments are perceived as more secure given the presence of the store personnel.

One of the contributions of this study is the investigation of common stages involved in the mobile payment process (Figure 1). These stages could be addressed in future investigations. As an example, it could be examined whether the same factors drive satisfaction/dissatisfaction during the application setting up phase and the in-store payment process, and what is the most important for users during each process stage. This could be done by ethnographic research; the researcher could observe and interact with the respondents during the payment process to discover his/her thoughts at each payment step.

Finally, this research focuses on the sources of satisfaction and dissatisfaction as perceived by the customers. Research examining the merchant's perspective would help to gain further insights into the current capabilities and weaknesses of mobile payments. Although the existing literature (e.g. Hayashi and Bradford, 2014) examines the advantages and disadvantages of mobile payments for merchants, it is limited to specific contexts.

6 CONCLUSIONS

In this work, the customer experiences and perceptions towards mobile payment methods have been investigated with respect to customer satisfaction sources using the critical incident technique. Digital cashless alternatives are increasingly present in the everyday life and progressively reach different types of customers. The present research pioneers in studying the relationship between users and current mobile payment solutions and offers guidelines for developers in creating and updating their products, and merchants in choosing mobile payment solutions that suit their businesses.

The present research has extended the existing understanding of customer satisfaction and dissatisfaction sources with respect to technology. While satisfaction determinants with technological products were widely discussed previously (e.g. Meuter et al., 2000; Bauer et al., 2006), none of these works reached mobile payments. Overall, it has been found that the main sources of satisfaction in this context are convenience, ability to deliver the expected function, ability to guarantee secure transactions and function when other payment methods fail. Convenience, which was found to be the greatest satisfaction source, has been described as the ability to conduct payments quickly, easily and independent of the possession of cash and cards. Overall, the sources observed are similar to the determinants reported for other technology-based services (e.g. Meuter et al., 2000; Parasuraman et al., 2005; Collier and Bienstock, 2006), while some mobile payment specific sources, such as payment process speed, have also been herein reported. The perceptions towards mobile payments have been also found to be paradoxical; that is, some individuals reported dissatisfaction sources that are opposite to what others reported as satisfactory for similar services.

Based on the research findings, general guidelines have been created for application developers and merchants. Providers should focus on convenience, efficacy, safety, and cross-platform interoperability while designing their applications. The same attributes should be used in promotional activities to market mobile payments. In addition, the positive perception of the users should motivate merchants to accept mobile payment services.

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APPENDIX A – Survey design

INTRODUCTION

Aalto School of Business is conducting research on consumers' experiences with mobile payments. In particular, we would like to learn more about your satisfying or dissatisfying experiences with mobile payments.

In this study, mobile payment is considered as any payment performed on or with a mobile device such as for example:

- paying by means of mobile applications
- paying in-store with a mobile phone
- using a mobile phone for online shopping
- using a mobile phone to pay bills
- using a mobile phone to buy tickets
- transferring money to another person via a mobile phone

The survey should take only a few minutes, and your responses are completely anonymous. Most importantly, there are no right or wrong answers only your personal experience of the matter counts. It is however important that you provide complete and accurate information.

If you would like to continue, please confirm your agreement below and click the arrow.

- I hereby agree to provide honest, precise and complete answers to the survey

SCREENER QUESTIONS

Have you ever used any mobile payment solution?

- Yes
 No

(If yes, the survey continues. If no, the survey is ended.)

Do you remember any experience with mobile payments that you can describe?

- Yes
 No

(If yes, the survey continues. If no, the survey is ended.)

What is your country of residence?

- Finland
 Other

(If Finland, the survey continues. If other, the survey is ended.)

Do you speak English?

- Yes
- No

(If yes, the survey continues. If no, the survey is ended.)

What is your age?

- Under 18
- 18 – 29
- 30 – 49
- 50 – 64
- 65 and over

(If under 18, the survey is ended.)

Q1: What kind of solution(s) have you used to make payments? Select multiple if applicable by holding Ctrl on a PC or Cmd on a Mac.

- A. PayPal Mobile
- B. MobilePay
- C. Apple Pay
- D. Siru Mobile
- E. HSL Mobile ticket app
- F. VR Mobile
- G. Mobile banking app
- H. Store app
- I. Store mobile web
- J. Other

If Other was selected

Could you please specify what other solution(s) have you used? (if you do not remember the name, please describe)

Q2: How long have you been using mobile payment?

- A. Less than 3 months
- B. 3 to 6 months
- C. 7 to 12 months
- D. 13 months to 2 years
- E. More than 2 years

Q3: How often do you pay with a mobile?

- A. Rarely (few times a year or less)
- B. Sometimes (at least once a month)
- C. Often (at least once a week)
- D. Regularly (daily or almost daily)

Q4: Do you agree or disagree with the following statements?

	Strongly disagree (A)	Somewhat disagree (B)	Neither agree nor disagree (C)	Somewhat Agree (D)	Strongly Agree (E)
Q4a: Generally, I have a positive view on technology	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Q4b: I tend to be technology pioneer	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Q4c: When using technology, I often feel overwhelmed	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Q4d: I do not trust technology	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Now we would like to get to know more about your past experience. **Think of a time when you had a very satisfying or dissatisfying experience with any mobile payment solution** and please provide **detailed answers** to the following questions.

Q5: What mobile payment solution did you think of? (If you do not remember the name, please describe)

Q6: Did you have a satisfying or dissatisfying experience?

- A. Satisfying
- B. Dissatisfying

Q7: Could you please describe your experience in detail? (circumstances, results etc.)

Q8: Why was this experience particularly satisfying/dissatisfying and memorable to you?

This is the last step of this survey. Please give us some information about yourself.

Q9: Gender

- Male (M)
- Female (F)

Q10: What is the highest level of education you have completed?

- A. High school or equivalent
- B. College
- C. Trade/technical/vocational training
- D. Bachelor's degree
- E. Master's degree
- F. Doctorate
- G. Other

We thank you for your time spent taking this survey.
Your response has been recorded.

APPENDIX B – Survey results

Respondent	Age	Q1	Q2	Q3	Q4a	Q4b	Q4c	Q4d	Q5	Q6	Q7	Q8	Q9	Q10
1	18 - 29	A,B,F,G	C	B	E	B	B	B	MobilePay in school cafeteria	A	I forgot my wallet in the pocket of my jacket and remembered it only when I was on line to get food at my school's cafeteria. Then I remembered that the cafeteria allows people to pay via MobilePay, and given that I had experience using it, I paid with it. At the cashier there was a small placate with MobilePay, and I placed my phone on top of it and proceeded to pay with it. It was fast and efficient.	Because it gave a solution to my problem and didn't result in any more hassle.	F	A
2	30 - 49	B	D	C	A	D	D	C	i can pay with my phone	A	it was amazing.	It was so easy to pay.	M	F
3	18 - 29	A	A	B	D	C	A	A	paypal	A	Good	won ebay auction	M	B
4	18 - 29	A,B,F,J	C	C	D	C	C	E	Paypal	A	Buying from a private seller, all went fluently	My first OWN car	M	C
5	30 - 49	A,F,G	D	D	D	D	A	B	Paypal maksut	A	I paid for the online purchase through paypal. Payment was done with a couple of clicks and was quick and easy	Fast and easy	F	E
6	30 - 49	B,E,G,H,I	E	C	D	B	C	A	Mobilepay	A	I shopped some fabrics in a webshop and paid using Mobilepay.	It was simple and fast to use.	F	E
7	18 - 29	A,C	D	B	D	C	C	A	paypal	A	everything was easy and pretty fastly done,	everything was easy and pretty fastly done,	M	E
8	30 - 49	A,B,F,G	D	D	D	D	B	B	PayPal	A	I was buying clothes from one website and paid with PayPal	It was satisfying, easy, quick, I had no problems	F	E
9	30 - 49	A,E,G	D	B	D	B	D	D	I paid an invoice and used mobile pank app	A	I paid an invoice and it was very easy! I used also camera so I did not have to write anything. It was very fast and easy.	It was so fast and I just pushed a button ok.	F	E
10	30 - 49	E,F	E	A	C	C	A	D	HSL	A	Swift and easy payment system that confirmed the purchase fast & accurately.	It has been best mobilepayment system so far.	F	D
11	30 - 49	B,E,G	D	C	D	C	B	B	MobilePay	A	Quick payments for my adult children	It was so easy	F	C
12	18 - 29	F,G,J	D	B	E	C	A	B	VR mobile payment	A	I bought a train ticket with mobile payment.	It was fast and easy.	F	A
13	18 - 29	G	B	B	D	E	B	B	Siirto	A	paying to online shop	Everything went smoothly and money transferred with instantly	M	B
14	30 - 49	B	A	B	E	D	B	B	MobilePay	A	Sharing money with friends after restaurant.	Easy and fast, easy to pay, no cash involved.	M	D
15	30 - 49	A,C,E,G,H	C	C	E	D	A	A	PayPal	A	It was really awesome and fun	It was really easy	M	D
16	30 - 49	A,G	D	B	E	B	B	B	Paypal	A	bought an item from an online shop with paypal. The experience was quick, and easy.	because it was so fast	M	D
17	18 - 29	B,F,G,H,I	B	C	D	C	A	C	VR Mobile	A	I was travelling to Helsinki, and had to purchase tickets with VR Mobile. I had no issues with purchasing, and my trip went without problems.	It was a positive experience. I remember it being very easy to use.	F	B

Respondent	Age	Q1	Q2	Q3	Q4a	Q4b	Q4c	Q4d	Q5	Q6	Q7	Q8	Q9	Q10
18	18 - 29	A,B,F	A	B	D	C	C	C	paypal	A	pretty good	first time	M	G
19	18 - 29	A,B,G,H,I	A	C	A	C	A	D	mobilepay	B	mobilepay isn't really that good payment app because it has many bugs	Payment I was trying to make nearly failed because of the unstability of the app	M	B
20	18 - 29	A,B,C,F,H	C	B	E	C	C	B	PayPal mobile	A	It was easy and felt natural, but I immediately felt like I needed to change something after the payment. Like I do change the limits for the card payments or regional limitations after making payments via card online. Felt weird and somehow satisfying that it went smoothly.	Not much. It was quick - and out of my head.	F	E
21	30 - 49	B,D,F,G	C	B	E	D	C	A	Mobile bank app	A	Everything was working very well. Mobilebank app makes things a lot easier.	App was working sometimes little bit too slowly.	M	C
22	30 - 49	A,B	C	B	A	C	B	A	Paypal	A	Fast, easy and safe.	I do not know.	F	E
23	18 - 29	A,B,G	C	B	D	C	A	B	Last time is using my mobile bank for paying bills	A	I pay My bills by mobilebank. Experirnce was nice, fast and easy	Fast and easy	M	D
24	30 - 49	G	E	B	E	D	A	A	OP mobile app	A	It was very easy. I did not have to write that much, just took a photo of the barcode. Then just approved payment with OP password.	As satisfying as all of them using the app.	F	D
25	30 - 49	A,D,F,G	C	C	E	D	C	D	op pank app	A	easy to buy bills or transfer money	it was so simple and easy	M	C
26	18 - 29	B	B	B	D	B	B	D	MobilePay	B	I was using my smartphone to use the MobilePay application in my local supermarket. My phone was very slow on loading the app so it made it a bit unconvienient while waiting. I would have been quicker with just using my debit card like I normally do.	I remember this happening to me a few times now actually. Very dissatisfying when it happens.	M	A
27	30 - 49	A	B	B	D	A	A	B	Paypal	A	everything went smoothly	not particularly, because there were no memorable problems	M	B
28	30 - 49	A,C,G,H	E	D	E	E	C	A	s-pankki	A	it is safe, fast, easy	just i wish the mobile app was also in english	M	F
29	30 - 49	G	B	B	E	B	B	A	Mobilepay	A	i pay my beverages with nearpaying whitout PIN-code	Mobilepay nearpaying was very easy because i didnt need use PIN-code in shop	F	B
30	30 - 49	B,J	B	C	B	C	C	D	paymobile	A	the payment succeeded	it worked and was easy	F	D
31	30 - 49	A,G	D	A	D	B	B	B	Nordea payment	A	I bought stocks with their payment app	it worked	M	A
32	18 - 29	B,E,G	B	B	E	D	A	A	MobilePay	B	It did not work, and my phone crashed	I could not pay my friend over the internet	M	B

Respon- dent	Age	Q1	Q2	Q3	Q4a	Q4b	Q4c	Q4d	Q5	Q6	Q7	Q8	Q9	Q10
33	18 - 29	A	D	A	E	C	B	C	PayPal	A	Just paying for a product and with PayPal it worked quite well. From individual to individual.	Rarely use PayPal between with individuals, it worked as supposed to, though fees i don't like that much.	M	D
34	30 - 49	A,B,E,F,G	E	C	D	D	B	A	Mobile Pay	A	I bought an item on Facebook market place, and I made payment using Mobile Pay	It is so easy to pay stuff with mobile pay.	F	E
35	18 - 29	G	A	A	D	C	B	D	Mobile banking app	A	Grocery store, it was simple to show mobile phone at the cashier device. Quick and easy.	It surprised me how well it worked	F	D
36	18 - 29	B,D,F,G	D	A	D	E	D	B	op	A	very easy	paying in store	M	A
37	50 - 64	C	A	B	C	A	D	D	Apple pay	B	easy to learn how to use, works well	easy to use	M	C
38	30 - 49	A,B,C,E,F,H,J	D	C	C	C	C	C	VR Mobile	B	Tried to buy ticket with VR Mobile. First couldn't load the application to my smart phone. Then the application just didn't work. I tried several times - no success. Money transferred from my bank account to VR but still no ticket for me. Finally I got fed up and bought the ticket from train station. And it was very difficult to get my money back.	VR always messes up ;)	F	E
39	30 - 49	A	B	B	D	D	B	B	Paypal Mobile	A	I was playing a mobile game I enjoy and they added a type of virtual item I especially liked and wanted to have. I tapped on buy, got rerouted to buy the virtual currency needed for it and with a few taps and verification, it was done! I had the minimum currency needed and got to buy the item easily and quickly.	I'm used to paying through my bank account and it taking a long time for the payment to go through, what I ordered being shipped to me or virtual goods being applied to my account. With Paypal Mobile, it was almost instantaneous. It's easy, accessible and quick.	M	C
40	18 - 29	B,E,F,G,H,J	E	C	D	C	C	D	Mobiilipankki	A	Wonderful app!	Works great!	F	B
41	18 - 29	A,B,F	D	C	D	C	D	C	MobilePay	A	First I had to download the App. Then rest was very simple. I had to type down some kinds of codes and ended up with a successfull transaction!	Everything was so easy to do and reliable.	M	E
42	30 - 49	G,H,I,J	E	C	E	C	A	A	Siirto	A	Paying to other person who had bank account at different bank	Fastness	M	E
43	18 - 29	B	C	B	D	B	C	B	Mobile pay	A	The payment went success	It is satisfying, cause you can just use your phone, you dont actually need your phone	M	B
44	30 - 49	E,G,H	E	C	D	A	D	C	Game mobile payment(show in phonebills)	A	Need to buy diamonds in some game.	It was very easy.	F	A
45	30 - 49	A,B,F,G	C	C	E	E	B	A	mobile pay	A	i went to the store and bough stuff and paid with mobile pay. it was nice.	i didnt have to take out my wallet. it feels good man.	M	C

Respondent	Age	Q1	Q2	Q3	Q4a	Q4b	Q4c	Q4d	Q5	Q6	Q7	Q8	Q9	Q10
46	18 - 29	A,B,C,F,G,H	C	C	E	D	A	A	mobilepay	A	Mobilepay was very quick and easy to use, it was a face to face transaction for goods, so It was very easy to see how fast the money was delivered to the customer and how well it worked over all from the easiness perspective. We both got our goods, and the money was topped up very quickly, resulting in a very quick few minute meeting with some chatter.	It was so insanely easy and quick! I can't remember the last time something was so simple to pay for, other than a credit card in a shop that only requires tapping the card, but now I don't need a card because I have a mobile device!	M	D
47	18 - 29	A,B,G,I	E	C	D	B	C	C	Bank mobile pay	A	Easy way to pay	Because it is easier	M	B
48	18 - 29	A,B	B	B	D	C	B	D	mobilepay	A	ordered food with mobilepay. It was fast and easy and safe.	It's easy so thats satisfying. It often pays extra to use these mobilepays so thats not fun	F	B
49	50 - 64	G	E	B	E	D	A	A	nordea mobile bank	A	Paying bills by scanning the barcode. Easy and fast!	It saves lot of work	M	E
50	18 - 29	B,G,H	D	C	D	C	A	B	MobilePay	A	I paid my friend 20 euros.	It was easy and my friend got the money quickly.	M	B
51	18 - 29	C,E	A	C	E	C	B	A	HSL	A	My experience was all good, everything went well	It was easy and I use it often.	F	D
52	18 - 29	A,H	A	B	E	C	D	A	paypal	A	was very easy to use and quick	it was my first mobile payment	M	A
53	30 - 49	E,F,G,H,J	C	C	E	D	B	A	Pizzaonline,	B	I was charged multiple times	I lost money and noticed too latest they didn't agree to refund	F	D
54	18 - 29	H	B	C	B	D	A	A	Soner	A	Very nice and easy	because its easy	M	E
55	65 and over	A	B	A	D	B	B	C	google play	B	There were problems of passwords and confusion between my mobile and Pc accounts. At last I managed to pay	Because it was so confusing	F	D
56	18 - 29	B,E,F	A	C	E	B	B	B	HSL Mobilepay	A	I bought a ticket to travel By bus.	It was easy to pay and use with phone.	F	D
57	18 - 29	A,F,G,I	E	B	D	B	C	B	paypal	A	Last time I paid with paypal and I only remember that it was very easy. I had to click just few buttons and the payment was complete.	It was much easier than paying with online bank which I usually do.	F	C
58	18 - 29	B	B	B	B	C	B	C	Mobilepay	A	It was very good	It was easy to use	F	B
59	18 - 29	F,G,H	D	B	D	D	A	A	OP Mobiili	A	I used OP Mobiili to pay a bill. I got the bill by email and I applied the information to the application. Payment was/is easy with OP Mobiili app.	Like every other payment I have made.	M	B
60	18 - 29	A,B,E,F,G,H,I	E	C	D	C	B	C	HSL	A	Easy and fast way to buy bus tickets	It was first time when i did buy mobile tickets on my own	F	A
61	18 - 29	A,B,G	C	C	E	D	B	E	I was paying for this thing and everything worked well.	A	Everything was working so I didn't experience bad things. Result were good and mobile payment is easy.	Because it works out so nicely. I have not experienced bad things like never.	F	C

Respondent	Age	Q1	Q2	Q3	Q4a	Q4b	Q4c	Q4d	Q5	Q6	Q7	Q8	Q9	Q10
62	18 - 29	F,G	D	B	E	D	A	A	Mobile Bank	A	I paid using mobile bank and it worked surprisingly well. It was also really fast and easy to do so.	I was surprised how fast and easy it was.	M	C
63	18 - 29	B,C,E	C	B	D	C	C	B	Mobilepay	A	Good app	Easy	F	A
64	18 - 29	A,G,H,I	E	B	E	C	B	C	paypal mobile	A	Bought some clothing online and payed with paypal	It was very easy and fast as you just log into paypal and confirm. I mostly use paypal so thats what I remember best	F	B
65	30 - 49	A,B,E	B	C	D	D	D	B	Paypal	A	Good results	Good service	M	B
66	30 - 49	B,G,H	E	C	D	B	B	B	Mobilepay	A	I used mobilepay to pay my webshop shopping. It is so easy and quick.	Because it is so easy.	F	D
67	30 - 49	A,E,F,G,H	D	D	E	E	A	A	HSL Mobile pay	A	Easy to use, fast	Using weekly	M	D
68	18 - 29	A	D	B	D	D	C	B	paypal, there was some issues with the payment and i had to sent email and took a long time to get my money	B	its wasnt fun to go back and fort with emails	i thought paypal was easy	M	E
69	30 - 49	B	B	A	D	B	C	B	Mobile pay	A	I sent my son some money	It was easy and fast	F	B
70	30 - 49	J	E	A	D	B	B	C	Tekstiviesti	A	I paid a HSL ticket to Metso by SMS. The service worked quickly and easily.	Because it was easy; I did not have the proper kits I would have bought a ticket from the automaton. It was also fast.	F	E
71	18 - 29	B,G,J	D	D	E	D	D	A	MobilePay	A	I was overwhelmed about how easy MobilePay is. Like sometimes mobile pay solutions can be very hard and take some time but MobilePay took only minute.	Because it was so quick and I have so much to do so I was satisfied about the time it took	M	D
72	18 - 29	F,G	E	C	E	D	A	A	VR mobile pay	A	I had to buy a ticket for a train, which was easy to do and I got it.	It's fast and easy to buy the ticket. Also easy to check the ticket information from the sidebar. Creating a profile there is not hard at all.	F	C
73	18 - 29	A,C,G,J	D	B	D	A	B	B	Mobile pank	A	Using my bank daily paying bills etc	It is just super usefull	F	B
74	18 - 29	A	C	B	D	D	D	B	ebay	A	Is so easy.	is whas so easy	M	C
75	18 - 29	A,G,H	E	B	E	E	A	A	My bank app	A	It works good and is easy to use	Because they have all my information and I can use it as a passport	M	A
76	30 - 49	E	B	C	E	E	B	A	hsl payment	A	helpful	save time	F	D

Respondent	Age	Q1	Q2	Q3	Q4a	Q4b	Q4c	Q4d	Q5	Q6	Q7	Q8	Q9	Q10
77	18 - 29	A,B,C,H,I	C	B	E	C	D	A	Apple pay	A	VERY GOOD APP	SMOOTHNESS	M	E
78	18 - 29	A,B,F,G	B	B	E	D	B	D	Paypal mobile	A	Paying an ebay item	It was easy and very fast	F	B
79	18 - 29	B,E,F,J	D	B	A	C	D	D	Pivo	A	Send my friend half the money she spent on our snacks.	It was nice that i could do it only becouse she was in my contacts on my phone	F	B
80	30 - 49	A,F,J	D	C	D	C	B	B	Paypal	A	Paid item to person worked well	Everything worked smoothly	M	D
81	30 - 49	E	E	C	D	D	A	A	Boku	A	I bought credits to IMVU service and got those fast.	It was fast and safe to use	F	A
82	18 - 29	A,B,C,H	B	C	D	C	C	B	Play Pal	A	Using Pay Pal was simple ja easy, and that's why it made me happy to use it even more!	It was satisfying, because it suprised me how simple this could actually be, to use.	M	F
83	50 - 64	A	D	B	B	D	D	D	paypal	A	it was in department store and it got well	it was so easy	F	D
84	18 - 29	E,F,G,H,I	E	B	E	C	B	D	Zadaa	A	Very easy to use, I just added my debitcards number in the app. Now I can buy clothes with one clicke.	So easy to use and safe	F	D
85	30 - 49	C	A	C	E	C	C	B	Apple pay	A	Fast and very quick	Sometimes it gets declined and you have to go trough complicated process to make it work again.	M	A
86	30 - 49	B,H,J	C	B	D	C	B	B	Mobilepay	A	I was playing Pokemon Go and buying ingame coins with real money via MobilePay. It went very smoothly without any problems. I was very satisfied.	It went so easily and smoothly!	M	D
87	30 - 49	A,B	D	B	C	D	D	D	Kill shot bravo	A	It's a game that I play. I buy gold (which you need) in that game and it work's perfect!	Satisfying, always.	M	A
88	30 - 49	A,B	B	B	D	C	D	D	Mobile pay	A	It's fast and less time consuming	It's save your time	F	E
89	50 - 64	E,F,G	E	C	E	C	A	E	Paying via Nordea app.	A	I pay all my bills, if possible, via Nordea app.	It is simple, easy and I trust the app. It makes even quicker when I scan the code of the bill. I can also change the payment date without contacting the bank.	F	E
90	30 - 49	A,B,G	E	C	E	D	C	B	MobilePay	A	Absolutely easy to use and everything went smoothly.	Because it was so simple.	F	D
91	30 - 49	A,B	D	B	D	C	D	B	PayPal	A	Last time I moved transferred money from paypal to your account and it runs fast	Because it was so easy and fast	F	C
92	30 - 49	B	E	A	C	B	C	B	I do not know	A	I bought game money	Because it was easy and fast	F	C

Respondent	Age	Q1	Q2	Q3	Q4a	Q4b	Q4c	Q4d	Q5	Q6	Q7	Q8	Q9	Q10
93	30 - 49	A,E,G,H,I,J	E	C	A	D	B	D	As far as I can remember, basically all my mobile payment experiences have been satisfying. Only Nordea web bank has caused some problems.	B	I still haven't been able to use Nordea's mobile bank app, because it doesn't work - for some reason it doesn't connect with the password app, only loads for several minutes and then gives an error message. Whenever I want to log in my bank account I have to open Nordea's web bank on a browser. It also was pretty complicated in comparison to other apps I've used to start using Nordea's mobile options.	I pretty much described it in the previous field.	F	B
94	30 - 49	B,E,F	D	C	D	B	B	C	mobilepay	A	I bought stuff for my children from a friend and didn't have cash with me, but it didn't matter since we both have mobilepay	It was so easy	F	D
95	18 - 29	A,B,G	B	B	D	B	D	A	My bank's, OP Mobile	A	It took a while to fully trust it, but it has been enjoyable.	Because I was worried that it would be easily hacked and my information stolen.	F	B
96	30 - 49	A,B,D,G,J	D	C	D	C	B	A	Op Bank	A	paying with mobile phone and pin code was new way to use online banking with phone	it's handy, and easy	F	B
97	18 - 29	G,H	B	B	E	D	B	B	Paying bills and other stuff via banking app	A	I need to pay certain amount of money to colleague of mine because we were doing a project, it was very practical and easy to pay them with mobile.	It was simple and easy.	F	A
98	50 - 64	A	E	C	E	D	E	A	Monia eri vaihtoehtoj	A	Maksut on onnistuneet useimmiten	Etten ole tullut huijatuksi	M	C
99	30 - 49	C,E,G	E	B	E	E	A	E	Mobile bank, HKL	A	Fast.	Fast.	F	B
100	18 - 29	G	D	C	D	A	B	B	I paid my online shopping by the service my bank is offering.	A	no	Everything went smoothly.	F	D
101	18 - 29	A,B	B	C	D	D	A	A	paypal	A	good	it was easy to use	M	E
102	18 - 29	A	A	A	E	D	B	A	PayPal	A	I paid for the hairdresser's price with mobile payment. I didn't have any cash with me and a payment card reader had some connection problems. But somehow mobile payment worked when nothing else did.	It was surprisingly fast and easy. Instructions were clear and simple. I didn't have to wait for many days that money transfer was done. I paid for the hairdresser's price with mobile payment. The hairdresser was also very happy for the result.	F	A
103	18 - 29	A	B	B	D	D	C	B	paypal mobile	A	payment was fast and easy	it was my first time paying with my phone	M	G
104	18 - 29	A,B,F	B	B	A	C	B	A	PayPal	A	easy to use, easy to learn, effective	easy to use	M	B

Respondent	Age	Q1	Q2	Q3	Q4a	Q4b	Q4c	Q4d	Q5	Q6	Q7	Q8	Q9	Q10
105	30 - 49	B	B	C	D	C	D	A	mobile pay	A	Paid for car parking	Never need to think that have coins or cash notes ready when want car into non-free parking area	M	A
106	30 - 49	A	B	B	D	C	B	A	paypal	A	payment was quick	it was quick	M	A
107	18 - 29	A,B,E	E	B	E	C	C	B	PayPal	A	Easy to use	Easy to use	M	C
108	18 - 29	C	A	C	C	E	C	A	Mobile Pay, Apple Pay	A	My experience was good. Paying was as smooth as the card in general	The payment went well.	M	B
109	18 - 29	G	D	C	D	D	A	A	Nordea	A	Paying bills	It was easy	F	D
110	30 - 49	A,B,G,H,I	E	C	E	C	A	B	Paypal Mobile	A	I pay with Paypal mobile all the time when I shop online. It's a very easy, safe and quick way to pay. I have never had any problems.	Because it was fast and safe.	F	D
111	18 - 29	A,E,F,G	C	B	D	D	D	B	online banking app	A	to send money to a relative, to purchase fast food	quick and easy, no hassling with cash, would do again	M	B
112	18 - 29	B	B	A	C	C	C	C	mobilepay	A	it worked fine	there was no problems	M	D
113	18 - 29	B,F	A	C	E	B	A	A	Mobilepay	A	Bying things online	It was quick	M	C
114	30 - 49	E,F	D	A	B	D	B	D	vr	A	bought a train ticket. At first it was a bit confusing and manged to do it in the end	confusion	F	E
115	30 - 49	B	D	A	D	D	D	B	I bought a soda can from vendingmacine	A	Nothing special. I sent a text message and did get my soda can	I was thirsty and i didn't have coins	F	B
116	30 - 49	A,G,H	E	C	D	E	A	B	PayPal	A	Purchase on eBay. I was in a hurry and couldn't find my card so payment via PayPal was fast.	The purchase i made came just in time before christmas.	M	C
117	30 - 49	B,E,G,H	D	C	D	B	B	A	Oma Elisa	A	You can pay your bills directly from the app.	It's easy to check your open invoices and pay directly through the app.	F	D
118	18 - 29	A,D,E,F,H	B	B	A	B	B	C	Some payment errors	B	I had problems with paying.	Its annoying to me.	M	A
119	30 - 49	A	A	B	E	B	B	B	Paypal mobile	A	I did pay for a product that i bought online and everything went well and smoothly. Wendor received a payment and i received a product.	It was fast and reliable	M	D
120	18 - 29	A,B,D,E,H	B	B	B	B	C	A	Payment errors	B	My purchase didn't go trough.	It is really annoying to have problems with paying.	M	A
121	18 - 29	D	E	C	B	C	C	D	siruu mobile	A	went well	it was fast	M	E
122	30 - 49	A,G	D	B	D	B	C	C	PayPal	A	All went good	Everything was easy	F	D

Respondent	Age	Q1	Q2	Q3	Q4a	Q4b	Q4c	Q4d	Q5	Q6	Q7	Q8	Q9	Q10
123	30 - 49	G	B	A	E	B	C	C	bank transfer	A	I paid a ticket by bank mobile transfer	I was not aware this can be done and once it was so easy, it was very satisfying.	F	D
124	18 - 29	A,B	B	B	D	B	C	A	Mobilepay	A	It is easy to use	ly is satisfying cause you can just use like "virtual money"	M	B
125	18 - 29	A,G,H,I	C	B	E	C	B	A	Mobile bank payments	A	I was paying my bills on my cellphone on phone bank app.	It was easy and fast	M	D
126	30 - 49	A,G,H,I	C	A	D	D	B	B	pivo	A	it works	it works fine	M	E
127	30 - 49	G	D	B	D	C	B	A	Op	A	Paying bills	Smooth transaction	F	E
128	18 - 29	G	E	C	C	A	B	B	bank payment	A	I made the payment and everything was okay	The payment was fast and easy	F	D
129	30 - 49	G	E	D	E	C	E	A	Nordea Mobile Banking	A	It is very trustworthy and recommendable	because it gives us pay easily without going on a computer.	M	D
130	30 - 49	E	A	B	E	D	D	B	Apple Pay	A	Was able to at local Grocery store with cell	easy to use	F	C
131	18 - 29	A,B,G,H,J	B	D	E	C	B	A	pivo	A	Pivo is very easy and quick to use	It is so easy to pay by it	F	A
132	30 - 49	G	D	B	E	C	C	C	Danske mobile-bank	A	application been fast and working since the beginning i started to use. paying been easy. good solution.	because application works very good, never been problems.	M	C
133	30 - 49	A,G	D	A	E	B	B	B	op mobiili	A	i use it to pay my bettings when travelling	I could pay something that I forgot to do home.	M	C
134	18 - 29	B	C	B	D	D	E	E	paypal	A	it was good	easy and fast	M	B
135	18 - 29	B	B	B	E	B	C	A	Stripe	A	It was quite good.	It was easy to use.	M	D
136	18 - 29	G	A	B	C	A	C	D	I don't remember	A	I paid bills	It was my first time	F	A
137	18 - 29	A	B	B	E	C	C	B	paypal	B	i dont remember anything	because it was hard to sing in	M	G
138	30 - 49	A,G	E	B	D	B	B	B	mobile payment	A	I was in SÄörkäönniemi amusementpark and paid my parking ith mobile phone. It was very easy and quick.	It happened so easily. This as first time I paid ith my mobile phone	F	E
139	30 - 49	G	D	D	B	B	A	D	Mobile banking app	B	I was trying to contact the customer service via the application and I did not get a response.	I was waiting for an answer and they promised to contact the customer within 3 days.	F	E
140	18 - 29	H	D	A	D	D	B	B	apple appstore	A	I purchased some paid apps in apple appstore	It was easy to buy the apps that are useful to me.	M	A
141	18 - 29	G	A	D	D	D	C	D	OP	A	Its easy	I love it its easy	F	A

Respon- dent	Age	Q1	Q2	Q3	Q4a	Q4b	Q4c	Q4d	Q5	Q6	Q7	Q8	Q9	Q10
142	30 - 49	G,H,J	C	B	D	D	A	B	That app doesnt change euro to php	B	I was oh yeah new app to test to send money to php.usually 1st transaction is free on these services,but this not allowed php currency	Its above totally useless for me	M	C
143	30 - 49	A,G	E	C	E	C	A	A	PayPal	A	Comfortable paying	Easy and safe	M	C
144	30 - 49	G	C	B	E	E	B	A	Interner bank app	A	Internet bank app really helps in everyday life.	Everything was working so well.	M	D
145	30 - 49	A,B,F	B	B	D	D	D	D	Mobile Pay	A	Easy to start up with and seutp and fast playments.	Satisfying part was that the service worked as expected and with even mobile phone numbers when transferring from mobile pay to other mobile pay	M	A
146	30 - 49	A	C	B	D	A	B	B	mobilepay	A	used mobilepay in an online store	it was easy and convenient	F	D
147	50 - 64	B	C	B	C	D	D	C	mobilebay	A	I think it was very easy.I was with my friends.and it was not unclear to anyone.we were in the restaurant	it was so enjoyable easy	M	C
148	30 - 49	B	C	B	D	B	B	B	Mobilepay	A	We had bought a gift with few friends. One of us payed it and all the others payed her our own shares with mobilepay.	I didn't have to log in to bank and use any account numbers.	F	D
149	18 - 29	A	B	B	D	C	D	A	paypal	A	It was super easy	It was easy and different	M	A
150	30 - 49	B	B	A	B	C	C	E	nokia	A	Easy	Easy	M	B
151	30 - 49	E	C	A	C	B	D	C	HSL	A	I used the application to get a train ticket on board and I paid for that later, in connection with my phone bill	I did not need any cash or credit card or online paying, it was safe	F	E
152	50 - 64	G	D	C	B	B	C	C	i cant describe, sorry	A	i was little nervous to use it first time but it was easy to use	it was easy to use	F	C
153	30 - 49	C	B	C	E	D	C	B	apple pay	A	all worked nicely	fast payment	M	C
154	18 - 29	A,B,C,G,H	C	D	D	A	D	B	Apple Pay	A	Easy to pay small or big payments	satisfying	F	C