

LAPPEENRANTA UNIVERSITY OF TECHNOLOGY

School of Business and Management

Master's in International Marketing Management

Master's Thesis

Self-Service Technology's Role in Building Satisfaction and Loyalty in the Banking Sector

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ABSTRACT

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Title:	Self-Service Technology's Role in Building Satisfaction and Loyalty in the Banking Sector
School:	LUT School of Business and Management
Programme:	International Marketing Management
Year:	2019
Master's Thesis:	Lappeenranta University of Technology LUT. 63 pages, 3 figures, 18 tables, 1 appendix
Examiners:	Professor Sanna-Katriina Asikainen, Professor Anssi Tarkiainen
Keywords:	Self-service technology, value-in-context, satisfaction, loyalty

This quantitative thesis concentrates on investigating self-service technology's perceived value on customer satisfaction and loyalty. This study focuses much on the term value-in-context, which means that value is always context dependent. Based on this assumption value can be realized differently by different customers. Unique skills and preferences can influence the experienced value of using self-service technology. This realized value can also change within time as the skills and knowledge of the user can grow.

Based on the value-in-context theory, this study investigates different value components based on the previous literature which might increase customer satisfaction. These are ease of use, self-control, usefulness and costs saved. A questionnaire on the users feelings towards the use of mobile banking application was conducted and analyzed with SPSS, and based on that this study identified usefulness and costs saved as value attributes which have a positive effect on satisfaction.

This study also studied the correlation of satisfaction to loyalty. Previous literature also identified that relationships with satisfaction and trust lead to loyalty often than relationships with just satisfaction. Therefore trust's correlation was also measured against loyalty. Theory also suggests that a relationship can also have loyalty without satisfaction and trust, because of high switching costs. Therefore switching costs were also studied against loyalty to see the correlation. The outcome was that from these measures satisfaction and trust was seen as having positive correlation with loyalty.

TIIVISTELMÄ

Tekijä:	Sami Suutarinen
Tutkielman nimi:	Itsepalveluteknologian Vaikutus Tyytyväisyyteen ja Lojaaliuteen Pankkisektorilla
Tiedekunta:	Kauppatieteellinen tiedekunta
Pääaine:	International Marketing Management
Vuosi:	2019
Pro-Gradu -tutkielma:	Lappeenranta University LUT. 63 sivua, 3 kuviota, 18 taulukkoa, 1 liite
Tarkastajat:	Professori Sanna-Katriina Asikainen, Professori Anssi Tarkiainen
Hakusanat:	Itsepalveluteknologia, kontekstistasidonnainen arvo, asiakastytyväisyys, asiakaslojaalius

Tämä kvantitatiivinen Pro-Gradu -tutkielma keskittyy tutkimaan itsepalveluteknologian kautta koetun arvon vaikutusta asiakastytyväisyyteen ja lojaaliuteen. Tutkimuksen keskiössä on termi kontekstisidonnainen arvo. Eri ihmiset kokevat arvon eri tavalla riippuen heidän taidoistaan ja preferensseistään esimerkiksi itsepalveluteknologiaa käyttäessään. Tämä koettu arvo voi vaihdella ajan kuluessa kokemuksen ja taidon karttuessa.

Kontekstisidonnaisen arvon teorian perusteella tämä tutkielma on tunnistanut erilaisia arvoattributteja, jotka mahdollisesti vaikuttavat asiakastytyväisyyteen. Nämä ovat helppokäyttöisyys, itsekontrolli, hyödyllisyys ja kustannusten säästö. Mittaamaan näiden korrelaatiota asiakastytyväisyyteen, suoritettiin kyselytutkimus jonka tulokset analysoitiin SPSS-ohjelman avulla. Tulosten perusteella asiakastytyväisyyteen vaikuttavat hyödyllisyys ja kustannusten säästö.

Tämä tutkielma tutki myös asiakastytyväisyyden vaikutusta lojaaliuteen. Aikaisempi teoria on tunnistanut sen, että asiakassuhteet joissa on tyytyväisyyden lisäksi myös luottamusta, sisältävät todennäköisemmin myös lojaaliutta. Tämän vuoksi luottamuksen korrelaatiota lojaaliuteen tutkittiin. Selittämään mahdollista luottamusta, mikäli asiakastytyväisyys ja luottamusta ei esiintyisi, otettiin mittariksi myös vaihtamisen kustannukset. Tulokseksi saatiin lopulta, että tyytyväisyys ja luottamus korreloivat lojaaliuden kanssa.

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1 INTRODUCTION

Do you wish for someone else to do it for you or would you rather do it yourself in a faster manner? Are you willful to use machines in place of interpersonal interactions in your service encounters? The expectations in our world have evolved to the direction where we have become to expect that everything is available 24/7 and for the service to work right away. Customers today can order their clothes and other retail items online, conduct their financial matters with just a few swipes with their phones and perform flight check-ins with self-service kiosks. These kinds of services are possible because of a phenomenon called self-service technology. At its best, self-service technology provides its users a unique experience where they are able to satisfy their particular need at the time of their choosing in just a matter of few seconds.

The only way these needs have been able to be met is by leaving the actual human interaction, or as we know it, customer service out of the equation. Is this then the right way forwards for the companies? Can a service model where there is no interaction with a human still offer satisfaction and can you feel loyalty towards it? These are a question this thesis aims to answer.

Customer service is something that consumers have previously come to expect when they seek out services. It has been also argued that a good customer service is the best way to enhance customer satisfaction. (Barger and Grandey, 2006) However, it feels like self-service technology has come here to stay. Can self-service technology actually play a part in creating loyalty? How does self-service technology affect customer satisfaction? Can the customers be satisfied and still not loyal? Or can the customers be quite unsatisfied, but still have no intention to leave the current service provider? The banking industry is has been battling with issues affecting their reputation. The current issues, namely money laundering scandals, which the banks that are operating in Finland are experiencing, are not making it any easier for banks (Yle, 2019). At the same time the banks are

pushing their operating models to work with less human interactions such as incorporating the self-service technology more and more. Is this a move which brings something new and wanted to the banking sector and thus creating satisfaction and or loyalty, or is it the wrong way to go?

1.1 Background and need for the research

The banking industry has faced a lot of criticism especially after the financial crisis of 2007-2009. Even though the effect of the financial crisis on customer satisfaction and loyalty was felt much more negatively in the developing Europe, also countries in the developed Europe received their fair share according to Skowron and Kristensen (2012). After the financial crisis, customer satisfaction and loyalty has generally progressed little by little to this point.

Several factors can influence customers' satisfaction and their loyalty towards their bank. One of these is the service provided by the banks. Self-service technology has steadily risen in the banking sector especially during the 21st century and now a days it seems that customer service is something that cannot be received easily if at all. Bank branches in Finland for example are harder to come across each year. Does the rise of self-service technology then increase or decrease customer satisfaction and customer loyalty? Self-service and its effect on customer experience (Froehle and Roth, 2004; Keh, Pang, 2010; Meuter Bitner, Ostrom and Brown, 2005) has been discussed before as well as self-service technology's effect on customer satisfaction and loyalty (Selnes and Hansen 2001; Sindwani and Manisha, 2015) No clear consensus has risen from the previous research and therefore there is a clear need to discuss and conduct further studies on this matter.

1.2 Research problem and the aim of the study

The purpose of this study is to investigate what is the role of self-service technology in modern day banking sector in creating customer satisfaction and customer loyalty. Thus the study aims to

analyze self-service technology through the different value factors associated with it. The possible correlation of these factors towards customer satisfaction and the link between satisfaction and customer loyalty should provide indications to companies in the banking sector that which are the key contributors to attract longevity in customer relationships.

The main research problems for this study go as follows:

What is the effect of self-service technology's value on customer loyalty?

Sub questions to help reach the goals of the study are as follows:

How does self-service technology's value affect customer satisfaction?

How does customer satisfaction correlate to customer loyalty?

The idea of these sub questions is to help gather relevant information which is used to analyze and make conclusions about the main research question.

1.3 Literature review

The first technology application that was built for self-service was the ATM machine in the 1980's. Since then the banking sector has developed self-service technology in the form of online banking. Campbell and Frei (2010). Some of the very first online banking systems were created in Finland by OP-group in 1996. (OP-group, 2019). Since then Danske Bank (formerly known as Sampo Pankki) has provided us with the first mobile banking application in Finland in the year 2010. (Danske Bank, 2019)

As its evidently clear self-service technology is a rather new phenomenon, it's no surprise that the main bulk of the studies that evolve around it are also written recently. Most of the studies done are written during the current century and the term self-service technology was first used by Meuter, Ostrom, Roundtree and Bitner in the year 2000. (Meuter et al., 2000) The term has since gained a wider acceptance in other research papers (Curran and Meuter, 2003; Forbes, 2008; Shamdasani, Malhotra and Mukherjee, 2003).

Research papers have discussed the self-service topic from many angles. Research papers examining self-service technology in particular in the banking sector have been written by Karjaluoto, Mattila and Pento (2001), Hitt and Frei (2002), Campbell et al. (2010), and Xue, Hitt and Chen (2011). Karjaluoto et al. (2001) suggested already in 2001 in their research that mobile banking will soon become the main way to make transactions and that it will make void different payment methods such as credit cards. Karjaluoto et al. (2001) continue to state that customers value convenience, increased choice of channels and improved control over their banking activities in the self-service technology. Campbell et al. (2010) have suggested that while customers adopting self-service technology such as online banking increase their volume of transaction and customer retention, the profitability of them lowers.

Research around self-service technology towards customer retention and loyalty has reached varying results. Mols (1998), Hitt and Frei (2002) and Xue and Harker (2002) suggest that self-service technology leads to more purchases from the customer and Chen and Hitt (2002) have made the finding that self-service technology leads to increased customer retention. Other research, however, such as Selnes and Hansen (2001) suggest that self-service technology offers lower levels of customer loyalty than a personal service model.

Researchers such as Chandler and Vargo (2011), Lusch and Vargo (2004), and Scherer, Wunderlich and von Wangenheim (2015) have written quite a bit about service-dominant logic. The service-dominant logic takes a different perspective to marketing from the old goods-dominant view. The

main findings of the service-dominant logic are that the customers have an active role in co-creating value in services. The service-dominant logic also defines value as being different depending on the context. This finding plays an essential role in this thesis as we conduct a research which tries to quantify how the perceived value of self-service technology has an effect on customers' satisfaction and loyalty towards the company who is co-creating the value with the customer.

Ho and Ko (2008) identified four different self-service technology attributes which correlate with perceived value. These are ease of use, self-control, usefulness and costs saved. These four attributes are also in the core of this study as they will serve as the value components with which the measurement of self-service technology's correlation towards satisfaction shall be measured.

There are a lot of instances where consumers feel satisfied with our purchases or our service but afterwards we do not repeat the purchase. In some cases the correlation between satisfaction and loyalty is going hand in hand. Oliver (1999) has written a great deal about the correlation between customer satisfaction and customer loyalty. Oliver (1999) identifies different representations of customer satisfaction and customer loyalty and brings to the reader's attention different cases where satisfaction leads to loyalty and also gives examples why this is not always the case.

1.4 Theoretical framework

The focus of this work is presented theoretical framework below. The illustration clarifies that the phenomenon studied is limited to the banking industry. The study itself includes a study of how the value of self-service technology affects customers' satisfaction towards the service encounter. To be more precise the value-in-context that the customers are receiving from using self-service technology is being scrutinized. With the use of self-service technology customers receive new benefits such as that the service encounter is not limited by time or space, but they also have to

face new sacrifices like losing the human to human connection or the fact that the actual service has to be performed by themselves.

Customer satisfaction's correlation towards achieving customer loyalty is also studied to see if possible customer satisfaction also leads to loyalty, or if possible dissatisfaction arises, shall this lead to churn or do the customers still opt to stay as paying clients to the technology provider.

The self-service technology representation chosen to the study is mobile banking applications used in the banking business. Now-a-days almost every bank has got their own mobile banking application and therefore it is a viable and the most contemporary illustration of self-service technology in the banking sector to have a focus on.

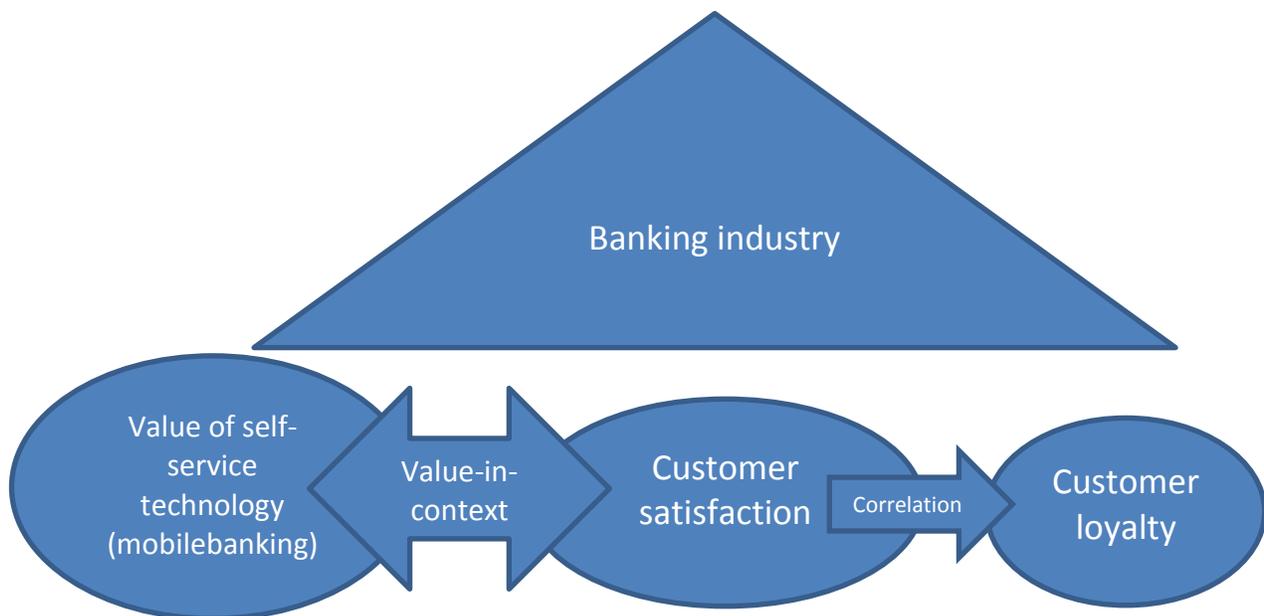


Figure 1: Theoretical framework

1.5 Definitions of key concepts

Self-service technology:

Meuter et al. (2000) came up with the name self-service technology back in 2000. They defined this phenomenon as: “technological interfaces that enable customer to produce a service independent of direct service employee involvement” (Meuter et al., 2000, 50) Continuing on this definition, self-service technology has two clear distinct aspects. Firstly the customer has to be heavily involved in the service process and secondly the use of technology in the process.

Yang and Klassen (2008) have added that self-service technology helps companies to serve customer faster and with less costs situated to labor as self-service checkouts can replace employee costs.

Customer satisfaction:

Tse and Wilton (1988) define customer satisfaction as an assessment of the felt discrepancy between expectations and the realized performance of the product. Hill, Roche and Allen (2007, 2) state that customer satisfaction does not always refer to customers fondness of product or service, but the general levels of feeling satisfied, may it be dissatisfaction or satisfaction. Hill et al. (2007) continue to proclaim that customer satisfaction summarizes customers’ feeling towards the brand although it cannot be limited to just a few words. Terms such as customer loyalty, the customer experience, customer retention, service quality, the customer relationship, customer win-back are thrown around to describe customer satisfaction. According to Hill et al. (2007), all these terms lead to the same point and describe the customers’ attitudes they form on the basis of their experiences on a particular organization.

Customer loyalty:

Oliver (1999, 34) defines customer loyalty as: “a deeply held commitment to rebuy or patronize a preferred product / service consistently in the future, thereby causing repetitive same-brand or same brand-set purchasing, despite situational influences and marketing efforts having the potential to cause switching behavior.” Oliver (1999) also adds to this by stating that customers will remain with their current provider of services as long as they see this behavior as beneficial for them.

Service-dominant logic:

Service-dominant logic is a theoretical finding by Vargo and Lusch in 2004. (Vargo and Lusch, 2004) Service-dominant logic serves to move the marketing discussion from a goods-dominant logic to a logic where intangibility, exchange processes and relationships are central. The customers are seen as resources and co-creators of value. In service-dominant logic companies are seen as operators which make value propositions rather than value distributors.

Value-in-context:

Value-in-context is a term which is in the core of the theoretical finding of service-dominant logic. When companies make value propositions according to service-dominant logic, value-in-context highlights the fact that from those value propositions customers derive value and determine the value by incorporating the firm's offering into their own lives. Customers value the service offerings differently according to their unique set of skills and knowledge and each customer can derive value differently. (Vargo and Lusch 2004)

1.6 Delimitations of the research

Self-service technology is in use in several different sectors, but this study is restricted to investigate how the possible value of self-service technology affects satisfaction and through satisfaction to loyalty in just the banking sector. Seeing that the banking sector differs from other sectors, the intention is not to suggest any possible findings of this study to be applicable in other such sectors which also utilize self-service technology.

Another limitation to this study is that it only includes the customers of banks operating in Finland and thus the primary data of the study is collected from individuals living in Finland. The research will be also conducted to examine customers' use of mobile bank application. This is not the only self-service technology available for customers to use, but as the use of mobile banking is on the rise to surpass actual Internet banking, it is seen as being the most contemporary self-service technology and therefore a viable option to conduct research on. However, it is also understood as that mobile banking applications are a new technology; it might have an effect on the realized value as the lack of experience on the technology can have its effect based on the fact that realized value can differ based on capabilities.

This study is using quantitative methods to investigate the relationship between self-service technology, satisfaction and loyalty. This study did not include methods which include quantitative and qualitative measures such as the structural equation modeling (SEM) of studying these different phenomena.

1.7 Methodology

The objective of this study is to find how the value of self-service technology affects customer satisfaction and whether such satisfaction has correlation to customer loyalty. Moreover the study

investigates different value attributes that the customer takes into consideration when he/she decides whether the product of service proves as satisfactory for him/her. To investigate all this, it is decided to use both primary and secondary data sources so that more profound conclusions can be drawn in relation to just using just one or the other of these sources.

When collecting primary data, the method of collections must be in line with the type of research conducted. There are two main ways of collecting data and conducting a study around the data: qualitative and quantitative research. (Tuomi and Sarajärvi 2009, 65) Quantitative studies are conducted so that statistical generalizations can be concluded from the data. (Hirsjärvi 2007, 176-177) Quantitative studies also aim to answer questions such as what, where, how much and how often. The studies describe different phenomena from a numeric standpoint are based on a larger sample than qualitative studies which aim to understand and describe different phenomena with information that is more qualitative. One distinct character which appears in quantitative studies is the ability to study correlations between two or more factors. (Heikkilä, 2001)

The aim of this study is to evaluate consumer behavior, by analyzing their relative attitude towards self-service technology and the shifts of satisfaction and loyalty this might have an effect to. Therefore it is concluded that a quantitative research will be the more appropriate method of collecting data for analysis. The quantitative data will be collected through a survey conducted in Finland. The response data shall be later on analyzed with SPSS.

To support the study also a secondary data shall be collected. This secondary data includes studies done from self-service technology affecting customer satisfaction and the role of customer satisfaction in generating customer loyalty. The data shall be synthesized and conclusions shall be drawn

2 THE VALUE OF SELF-SERVICE TECHNOLOGY IN BUILDING CUSTOMER SATISFACTION

Companies have several different reasons to organize their services into the form of self-service model. They can for example substantially lower the cost of the service encounter. Is the transition to self-service technology just a trade-off between lower costs and poorer customer service or is the company able to also offer as good or better customer service and enhance the customer loyalty with self-service technology? From the customers point of view it all boils down to what the experienced value by the customer is while using self-service technology.

2.1 Service-dominant logic and value-in-context

The value that different services bring to customers isn't always easy to define. The term value itself is rather vague. One way of viewing value is to see it in a context. Service dominant logic is something that offers a theoretical base to view the value of a service in use and as a co-creating process where the customer has an active role (Hilton and Hughes, 2013).

Service-dominant logic is theoretical finding which is named by Vargo and Lusch in 2004. Vargo and Lusch (2004) describe this new dominant logic in the field of marketing in relation to the past dominant logic as follows: "marketing has moved from a goods-dominant view, in which tangible output and discrete transactions were central, to a service-dominant view, in which intangibility, exchange processes, and relationships are central. Vargo and Lusch (2004, 2) continue by comparing previous marketing logic and the new service-dominant-logic by stating that previously "the customer was an operand resource. Customers are acted on to create transactions with resources." They state that in the service-dominant-logic "The customer is primarily an operant resource.

Customers are active participants in relational exchanges and coproduction.” (Vargo and Lusch, 2004, 7) Value of the service is realized by the customer in use. “Value results from the beneficial application of operand resources sometimes transmitted through operant resources. Firms can only make value propositions”. (Vargo and Lusch, 2004, 7) This differs quite a bit from the older logic for marketing as Vargo and Lusch (2004) describe that the presumption was that value is determined by the producer. “It is embedded in the operand resource and if defined in terms of exchange-value.” (Vargo and Lusch, 2004, 11)

Scherer et al. (2015) describe service-dominant logic as something where firms do not deliver or distribute value rather than they make value propositions. “Firms create and deliver resources that enable customers to derive value, while customers are the ones who determine value by incorporating the firm’s offering into their own lives.” Scherer et al. (2015, 179) The term value-in-context highlights the fact that every customer experiences and values differently their service encounters based on their capabilities to use and create value with their own skills from the value proposition that the firm offers. Moreover, the value-in-context signifies that the value customers can obtain is not only based on the firm-provided resources but also on the consumers unique set of knowledge and ability to utilize the resources to fullest. (Scherer et al., 2015)

For users of self-service technology to be able to utilize the resources to the fullest, it is paramount that the technology is relatively easy to use. Davis et al. (1989, 320) have defined ease of use as “degree to which a person believes that using a particular system would be free of effort.” Ho et al. (2008, 430) define ease of use “as a factor in which the self-service activity provides a clear interface and simple process to ensure customers can use it effectively.” While investigating the causality between perceived enjoyment and perceived ease of use Sun and Zhang (2006) stated that perceived ease of use is widely considered to have positive correlation with perceived enjoyment. Calisir and Calisir (2004) have stated that perceived ease of has a strong relation with satisfaction. From the value-in-context standpoint ease of use seems to be an important factor towards reaching satisfaction.

While looking at value from the value-in-context perspective, Scherer et al. (2015) found that for different kinds service situations the so called richness of a medium has an effect on the perceived outcome of the service. Self-service channels are usually very lean and do not concentrate on customization or personalization. Self-service channels are in better use, when something rather simple has to be done. If customers were to for example commute to their local bank branch, queue there and receive personalized customer service for something rather quick and easy tasks, they might not be pleased by the service even though they received proper attention and customized service. It is in these kinds of cases where the benefit of self-service technology usually offers most value. There is no need for a rich medium (e.g. customized personal contact) for a quick easy task if you can perform the task by yourself. Self-service value proposition is as such that you can perform some fairly simple tasks without any dependency of time or place. (Scherer et al., 2015)

Being able to perform simple tasks without any dependency towards time and place can be defined as a self-control variable. Self-control is one of the key attributes in creating value in using self-service technology. Users are able to handle their lean medium errands without having to visit a banking branch in the example of mobile banking. Self-control is said to provide the essential flexibility to ensure proper attainment of one self's goals. (Ho et al., 2008) Lee and Allaway (2002) have reasoned that self-control is strongly correlated with perceived value of self-service technology. Lee et al. (2002) continue by stating that the customer value increases when self-service technology offers the ability for users to perform activities independently and free of harassment of service people. Hofmann, Luhmann, Fisher, Vohs and Baumeister (2014) in turn deemed that self-control offers value leads to satisfaction and happiness.

Rich mediums are in turn needed when tasks that need performing are rather ambiguous and might need complex knowledge and interaction to be sufficiently handled. Mediums such as calls or visits to a bank branch can be seen as rich mediums where more complex service situations can be handled. (Scherer et al., 2015)

This brings the conversation to the usefulness of the self-service technology. Even though Scherer et al. (2015) highlighted that self-service technology is not creating value in every situation, it has been deemed that self-service technology adds value through the usefulness of the technology in certain situations. Meuter et al. (2005) underlines that customer value is increased when self-service technology has the ability to fit into people's work as well as regular life. Meuter et al. (2005) continue by stating that when customers' needs and self-service technology meet, the customers are able to enjoy the benefits. Pikkarainen, Pikkarainen, Karjaluoto and Pahnla (2004) even state that the sense of usefulness is the main contributor factor behind the acceptance of self-service technology in the form of Internet banking. Calisir and Calisir (2004) state that among ease of use, also perceived usefulness is very important component in creating satisfaction.

Lastly self-service technology has the ability to reduce perceived costs situated with the service according to Ho et al. (2008) Costs saved with the use of self-service technology to the user are not limited to the time saved but include also monetary savings. Costs saved on either monetary or non-monetary related units have a positive effect on the customer perceived value according to Ho et al. (2008), and Globerson and Maggard (1991). Money can be saved with lower fees related to using self-service technology or time waiting in traffic or queues.

2.2 Possible issues in adoption of self-service technology

The appeal for incorporation of self-service technologies has been widely recognized by academics as well as companies (Bitner, Brown and Meuter, 2000). The use of self-service technology improves efficiency and cuts costs for companies as they are able to use their customers partially as employees (Lovelock and Young, 1979).

However, recent literature has concentrated much on the benefits of self-service channels with mostly disregarding previous studies which have found positive remarks on personal service channels for companies and customers alike. The pros of using personal service channels are according to Barnes et al. (2000) barrier to exit the relationship, enhanced trust and customization. All of these factors are quickly dissolved once the incorporation of self-service technology comes into play.

According to Langer, Norman, Kekre and Sun (2012) companies are too quick to disregard the simultaneous use of both personal service channels and technology based service channels and push customers towards the use of self-service technology. Selnes and Hansen (2001) state that this kind of a push to self-service technology can lead to lowered customer loyalty if personal service channels are at the same time disregarded.

Kumar and Telang (2012) mention that this is not a healthy way for the companies to move forwards as the value propositions of personal service and self-service channels are not interchangeable between one and other. Kumar et al. (2012) also note that the introduction of self-service technology actually adds the amount of calls from customer to the call center of the company, so self-service technology needs some form of personal service channel in order to be effective. According to Buell, Campbell and Frei (2010) the introduction of self-service technology especially without proper personal service option may lead to customers feeling stuck with the technology, rather than appreciating the new service channel.

Karjaluoto et al. (2001) mention that while customers value the fact that self-service technology offers functionality, a different kind of accessibility and service at a lower price, they are still concerned about usage problems when dealing with self-service technology.

Meuter et al. (2000) had found out that self-service technology may lead to dissatisfaction. Customers have reported feeling of being annoyed and frustrated with their self-service technology

due to technology failures, issues with service design, process failures and also failures caused by the customer using the system. Meuter et al. (2000) continues by stating that customers having anxiety towards technology are less likely to have a positive self-service technology experience even if things have gone well. Parasuraman (2000) also noted that customers might not take on self-service technology easily due to their fears and discomfort in dealing with new technology.

Problems with the incorporation of self-service technology might appear when highly ambiguous and complex matters are left to be dealt with a lean media as self-service technology. Even though in theory the customer can complete the service encounter without restrictions of time and place which is the value offering of self-service technology, they might not be able to perform the task at all without assistance and therefore the perceived value is not realized. (Scherer et al., 2015).

However, the decision to incorporate rich or lean media is not that simple. The richness of the media is also something that is context specific. Even a lean media can be perceived as a rich media, once customers learn to fully and efficiently use the media. Therefore, different customers in different times can perceive the same medium differently according to their own unique skills and competencies. (Scherer et al., 2015)

2.3 Incorporation of self-service technology

It is clear that self-service technology should be carefully implemented as it has different customer value drivers than personal service models, which customers have got used to. Companies may risk lowering customer loyalty if they do not recognize this, but rather push the customers towards their new service model. Scherer et al. (2015, 179) also add to this by stating: "Firms need to consider the capabilities of their service channels as well as the customers' unique circumstances, such as their

duration with the provider, to fully leverage the potential of technology-based self-service channels.”

Xue et al. (2011) found that bank customers who have a high service demand adopt self-service technology more willingly and faster than customers which tend to not have that many service encounters with their bank. Xue et al. (2011) also note that customer efficiency plays a big part in the adoption of self-service technology. This means that “customers who are more able to participate in service coproduction will potentially experience a lower cost in adopting and using Internet banking” .Xue et al. (2011, 294).

Interesting enough, Xue et al. (2011) concluded in their research that younger customers are more prone in adopting self-service technologies when it comes to banking services. This is also suggested by other researchers such as Kim (2005) and Perumal and Shanmugam (2004). What Xue et al. (2011) did not find is correlation between having less bank branches in the region correlating with faster adoption of self-service technology.

It can be concluded that banks wishing to incorporate self-service technology into their service offering should consider several different factors before they do this. They should study their customer base thoroughly to understand their level of acceptance and quickness to adopt self-service technology. They should also think about the value-in-context when implementing self-service technology. Different people derive value through different value components. It should be kept in mind how to best enhance the attributes that most likely affect customer satisfaction which are the ease of use, usefulness, self-control and costs saved.

2.4 Hypotheses on value components of self-service creating satisfaction

Although there are instances where incorporation of self-service technology might need the assistance of personal service channels and self-service technology might not always add value to the user (Buell et al., 2010), this study goes with the hypotheses that different value attributes involved to self-service correlate with satisfaction of the user.

This study has picked four different value attributes which shall be the basis of the hypotheses. These are as discussed in the previous chapters: the ease of use, usefulness, self-control and costs saved. These attributes shall serve as the representations of the value of self-service technology. All these attributes have been established to correlate positively with customer perceived value and customer perceived value has been correlated positively with customer satisfaction according to various studies: Fornell, Johnson, Anderson, Cha and Bryant (1996), Grönroos (1996), Zeithaml (1988) and Hu, Kandampully and Juwaheer (2009).

According to Metsämuuronen (2006, 44-46) when deciding on the form of the hypotheses, the outcome depends on how much the concepts have been previously studied upon. If there hasn't been much studies performed on the concepts and the study area itself, the hypotheses cannot be formed as statements since no prediction of the outcome can be foreseen. Even if there are some studies on the main concepts, but if they have been studied separately no prediction and therefore hypothesis is suggested to be given for the study. If the concepts, study area and the correlation of the concepts have been studied before, it is advisable to generate hypothesis to the study. Metsämuuronen (2006, 44-46) Based on this, this study has here listed the first four hypotheses.

The first hypothesis is: *H1 Ease of use has a positive correlation with customer satisfaction*

The second hypothesis is: *H2 Self-control has a positive correlation with customer satisfaction*

The third hypothesis is: *H3 Usefulness has a positive correlation with customer satisfaction*

The fourth hypothesis is: *H4 Costs saved has a positive correlation with customer satisfaction*

These concepts have been studied before separately and together and therefore it has been concluded to make hypothesis with clear statements of the supposed outcomes.

The theoretical framework for the first part of the study with the hypothesized relationships goes as follows:

3 FROM CUSTOMER SATISFACTION TO CUSTOMER LOYALTY

The role of customer satisfaction and customer loyalty has been anything but clear and agreed upon in previous literature (Oliver, 1999). Different studies suggest that there is a clear connection between satisfaction and loyalty (Sivadas and Baker, 2000), but at the same time part of the literature advocates that satisfaction is not always a precursor for loyalty (Oliver, 1999). Before going further into the relationship between customer satisfaction and customer loyalty, a further look into these two terms shall be taken.

3.1 Customer satisfaction

Customer satisfaction has been seen as a critical goal to which companies should aim for when providing their services. Guo, Kumar and Jiraporn (2004, 141) have stated that customer satisfaction has a clear connection to firms' growth and long-term success and rarely companies which have a low rate of customer satisfaction continue to thrive. Correlation with customer satisfaction and customer re-buying, or customer retention as well as customer loyalty has been detected. However, this topic shall be discussed further on why it isn't always so.

Hallowel (1995) states that previous literature has defined customer satisfaction as the customers' perception of received value from a relationship or transaction. Value is the perceived service quality in relative to the price of the service in relation to the value expected from different competing relationships or transaction which can be had with a different service supplier. (Hallowel, 1995).

This line of thought described by Hallowel (1995) is the one the Vargo and Lusch (2004) have criticized and they have developed their service-dominant logic to move further from this line of thought. Whereas Hallowel (1995) describes value in relationships and transactions as something

that is almost a given thing, Vargo and Lusch (2004) emphasize that value is always derived from context.

Customer satisfaction is usually divided into two different conceptualizations which are: transaction-specific satisfaction and cumulative satisfaction. Transaction-specific satisfaction according to Oliver (1980) relates to the feeling of satisfaction or dissatisfaction that the customer experiences after a specific service encounter. Cumulative satisfaction in turn is related to the overall process of post-purchase evaluation which continues over time and isn't related to a specific service encounter (Jamal and Naser, 2002, 147). Cumulative and repetitive satisfaction is needed according to Oliver if customer loyalty is to be realized between a customer and the service providing company (Oliver, 1989, 34).

Fournier and Mick (1999) also state that customer satisfaction is something that is based on the customer – provider relationship and it's dynamic. Context is something that has very much effect on the perceived satisfaction as each customer can receive different levels of satisfaction from the same service offer. (Fournier et al., 1999) Cronin and Taylor (1992, 30) also agree with the fact that the perceived value of the service encounter has a direct impact on customer satisfaction.

Satisfaction is also something that is based on expectations. If the customer's expectations have been fulfilled or exceeded, you can expect a satisfied customer, whereas a service encounter where customer receives something less than expected leads to the contrary results.

3.2 Customer loyalty

Customer loyalty plays an important part in the success of any business in several different ways. One of the most important factors of customer loyalty is the fact that keeping existing customers is a much more cost-efficient than trying to acquire new ones as Desai and Mahajan (1998, 309) have

found out. Keeping customers loyal has also been found to have positive correlation with financial performance

Sasser claimed in 1990 according to Hallowel (1995, 28) that customer loyalty: “including relationship continuance, increased scale or scope of relationship, and recommendation result from customers’ beliefs that the quantity of value received from one supplier is greater than that available from other suppliers.”

Oliver (1999) defines customer loyalty as: “a deeply held commitment to rebuy or repatronize a preferred product / service consistently in the future, thereby causing repetitive same-brand or same brand-set purchasing, despite situational influences and marketing efforts having the potential to cause switching behavior.” (Oliver, 1999, 34)

3.2.1 Different levels of customer loyalty

Defining customer loyalty has led to different theories in literature. According to Jacob and Kyner (1973) there are two distinct ways of seeing loyalty: attitudinal and behavioral. The first one sees loyalty mostly as an attitude. According to Hallowel (1995) this means that different personal feelings create customers’ preferences and attachments towards products and services offered. The feelings of the customer are solely responsible of the degree of loyalty the customer has on the product or service.

Whereas the first way of identifying loyalty is strictly cognitive the second way concentrates on behavioral aspects. Examples of behavioral loyalty are not just thinking of a repurchase, but the actual action of repurchase from the same supplier where the scale or scope of the relationship is

increased. Also the act of recommending the producer of the customer's service provider is an example of behavioral loyalty.

Oliver (1997) doesn't see customer loyalty in directly the same way as mentioned above. It takes time to achieve the loyalty phase of interaction with a customer and Oliver (1997) has therefore concluded different loyalty phases to identify different stages where the customer might be on the loyalty track. The first loyalty phase is cognitive loyalty. This is described as something where the loyalty is fragile and superficial. It is based on believes that the particular brand offers superior attributes compared to other brands. The experience of the superior brand can be just recently experienced or obtained from previous encounters, or it can be even gained through other people. On the cognitive stage loyalty is often based on routines.

Whereas previous literature that had loyalty being either cognitive or behavioral, Oliver (1997) sees the cognitive level as the first very basic step which leads towards the actual repurchase. Previous literature didn't define the cognitive and behavioral loyalty as necessarily being two different stages on the same ladder, it was rather seen that these two aspects were parallel.

From cognitive loyalty the customer can reach the phase called affective loyalty. As the name of this stage states, this is a stage where the customer arrives when his / her cognitive loyalty is met with affection towards the brand. This stage is reached through several cumulative occasions where the customer feels that his / her needs have been met and satisfied. (Oliver 1997)

The next stage where the customers' loyalty towards the brand reaches an even further level is called conative loyalty. Conation means a brand-specific commitment to make a repurchase of the brands product or service. This stage is reached when a customer has experienced several positive affective episodes with the brand. It is customary to this stage that customers' intention to purchase this particular brand is higher than for other brands. However, the intention to purchase the brand doesn't necessarily reach the point where an actual purchase happens. (Oliver 1997)

The final stage that Oliver (1997) mentions is action loyalty. This is the stage where intentions of buying become reality. Even more so, in this stage the desire for purchase is so strong that possible obstacles that might hinder the purchase of the brand are sought to be overcome by the customer. (Oliver 1997)

This study takes on the more widely accepted form of viewing loyalty which sees loyalty as being both attitudinal and behavioral also known as composite loyalty. (Bowen and Shiang-Lih, 2001, 214)

3.3 Customer satisfaction's relation to customer loyalty

3.3.1 Different variations of customer satisfaction's connection to customer loyalty in literature

Oliver (1999) has summed up previous literature about customer satisfaction role towards building customer loyalty. He analyzes these different variations of opinions and concludes what current literature deems about the different representations.

Oliver (1999) has identified six different ways which previous literature has viewed the relationship of customer satisfaction and customer loyalty. The first representation (see figure 1 for the representations) sees satisfaction and loyalty as "separate manifestations of the same concept" Oliver (1999, 34). Oliver (1999) refers to this view as faulty as the view of satisfaction being equal to quality. The second representation sees satisfaction in the core of loyalty and that without satisfaction, loyalty couldn't exist. Third representation identifies satisfaction as being only one of many parts of loyalty. Representation number four shows us that loyalty is in fact a similar variable with satisfaction towards a term called ultimate loyalty. The fifth representation suggests that some

part of satisfaction is found in loyalty, but the whole satisfaction is by no means a precursor for loyalty. Lastly the sixth representation shows that loyalty can be derived from satisfaction, but there are different factors between them, which the satisfaction influences. Satisfaction can be a precursor for loyalty, but loyalty can also be derived by other means Oliver (1999).

Oliver (1999) is quick to state that the first representation doesn't seem very logical in light of current knowledge. Satisfaction is something that relates to a post-use feeling of fulfillment, whereas loyalty is a continuous preference of a product or service. Satisfaction might also be attained separately of loyalty in the case of customer being satisfied with products or services of different brands and prefers to continue the purchase of the other.

Representation two and three are similar in the sense that they propose that satisfaction is an essential part of loyalty. Number two defines satisfaction to be in the very core of loyalty, whereas number three refrains to state that satisfaction is part of loyalty. Nevertheless, both institute the idea that satisfaction is wholly encompassed by loyalty. This is simply not the case every time. Oliver (1999) gives an example, where he states that one can be satisfied in just one meal of a three course menu and that blind loyal can exist for example towards one's country even though you wouldn't be satisfied with it. (Oliver, 1999)

The fifth representation is more accurate in terms that it sees satisfaction and loyalty to overlapping each other. Overlapping is however just a small part of these two and representation five fails to take into account situations as described before where satisfaction and loyalty can be encountered separately from each other. (Oliver, 1999)

Oliver (1999) sees the remaining two representations four and six as being the most valid. Representation four, however, has satisfaction enclosed similarly as representations two and three and therefore doesn't have absolute validity. The term of ultimate loyalty in turn can be seen as valid. Regarding the representation six, Oliver (1999) agrees that there are different loyalty stages and

steps which lead to the ultimate loyalty. Satisfaction does not simply grow into a loyalty by itself, just like a seed doesn't grow to a plant by itself.

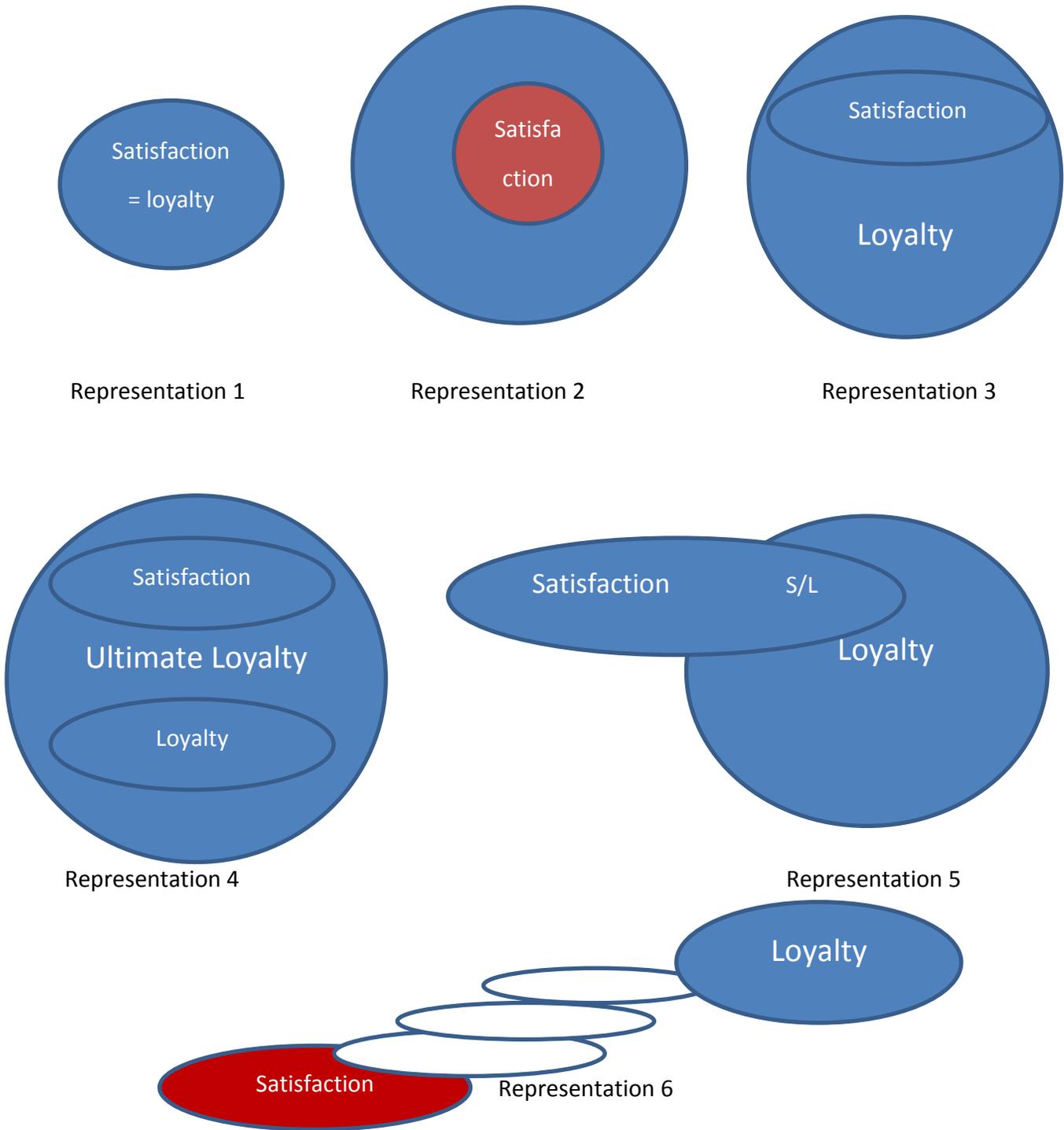


Figure 2: Different representation of satisfactions' role towards obtaining loyalty (Oliver, 1999)

3.3.2 Customer satisfaction not always a precursor for loyalty

Customer satisfaction has been studied a lot through time. A lot of the previous literature has taken for granted the fact that customer satisfaction automatically leads to customer retention and customer loyalty. This ideology has been disputed according to Oliver (1999) by Deming in 1986, Jones and Sasser in 1995 and Stewart in 1997. In 1996 Reichheld studied the effects of customer satisfaction to customer retention. Findings were such as that of the customers which claimed to be satisfied or very satisfied 65 to 85 percent defected. More over in the automobile industry satisfaction rate is up to 85 to 95 percent but only 30 to 40 percent of these customers will actually come back for repurchase.

Reichheld, Markey and Hopton (2002) go also further to talk about customer satisfaction and customer loyalty and why satisfaction is not always a precursor to loyalty. They found out that satisfaction surveys are easy to manipulate. Surveys could be sent right away after a purchase when the customer is usually at the most satisfied with the product or service. Reichheld et al. (2002) suggests that repurchase loyalty is therefore a better mark of the real level of satisfaction.

Bendapudi and Berry (1997) also state that even though usually customer satisfaction is correlating with customer loyalty, it's not always the case that dissatisfied customers defect and that satisfied customers stay loyal to the company. Therefore the relationship between customer satisfaction and customer loyalty is indirect and multidimensional.

3.4 Correlation between satisfaction and loyalty

While the argument has been made that satisfaction isn't a clear precursor for loyalty, different studies have found out that they do share a correlation. Fornell (1992) stated already in 1992 in his research that customer satisfaction has a direct impact on the future revenues a company will receive from the customer, thus can be concluded that he found the connection between customer satisfaction and customer loyalty as correlative. Sivadas and Baker (2000) have studied the same phenomenon of customer satisfaction's and loyalty's role in the banking sector and deemed that: satisfaction has a correlation on customers recommending bank to others and also to repeat purchase. Madjid (2013) continues by stating that consistent and growing levels of satisfaction can generate a feeling of trust in the relationship and can reflect as loyalty.

Yadav, Agrawal, Khandelwal and Tripathi (2018) talk about the same phenomenon, but give another perspective by stating that profit in banking sector is generated by repurchase and loyalty and loyalty in turn is generated by satisfaction to the products and services. However, the jump from satisfaction to loyalty according to them always requires trust. Reichheld and Schefter (2000) have also come to the same conclusion by stating that more often price isn't the deciding factor in influencing loyalty, trust is.

Hallowel (1995) found out in his study where he analyzes customer satisfaction, customer loyalty and profitability that customer satisfaction carries a positive correlation towards customer loyalty in the banking sector. He found out that customer satisfaction could be the explaining factor on as much as 37 % of the difference in loyalty levels. Hallowel (1995), like others, did not find conclusive evidence to claim that price would have a distinct correlation with customer loyalty.

Hennig-Thurau (2004) found that specifically in consumer service context customer satisfaction had a positive correlation with customer retention and loyalty. The indication of the results was that in a

service setting where there is high-interaction with the customer, customer satisfaction had a more direct effect to customer retention and loyalty than in a context where the service was not as individualized and less personal. This would indicate that satisfaction has correlation with loyalty, but it isn't found to be as easily achieved in a less personal service situation such as self-service encounters are. The reason for this discrepancy could very well be that trust in the customer – service provider relationship isn't formed as easily in less personal service situations

3.5 Hypotheses for satisfaction creating loyalty

As it was previously discussed, satisfaction does not always lead to loyalty. Measuring satisfaction isn't always enough to understand the correlation between satisfaction and loyalty. The relationship with these is said to be multidimensional. What literature seems to point out is that usually satisfaction leads to loyalty in relationships where trust is also playing its part (Madjid, 2003). Trust could be a so called mediating variable. Therefore it is decided to investigate not only whether satisfaction correlates with loyalty, but also could trust be an explanation for this. Therefore hypotheses go as follow:

The fifth hypothesis is: *H5 Satisfaction correlates positively with loyalty*

The sixth hypothesis is: *H6 Trust correlates positively with loyalty*

There is enough evidence in the literature to expect these outcomes from the study. However, there is a possibility that there would be other explanations for loyalty other than satisfaction. Therefore this study has included a variable for measuring switching costs. The purpose of this measurement is to see if loyalty can be seen derived from the fact that actually changing the mobile bank service provider is too cumbersome for the users. Therefore the last hypothesis goes as follows:

The seventh hypothesis is: *H7 Switching costs associated with mobile banking do not correlate positively with loyalty.*

The seventh hypothesis is the last hypothesis included in this study. In the figure 3 below are all the hypotheses represented.

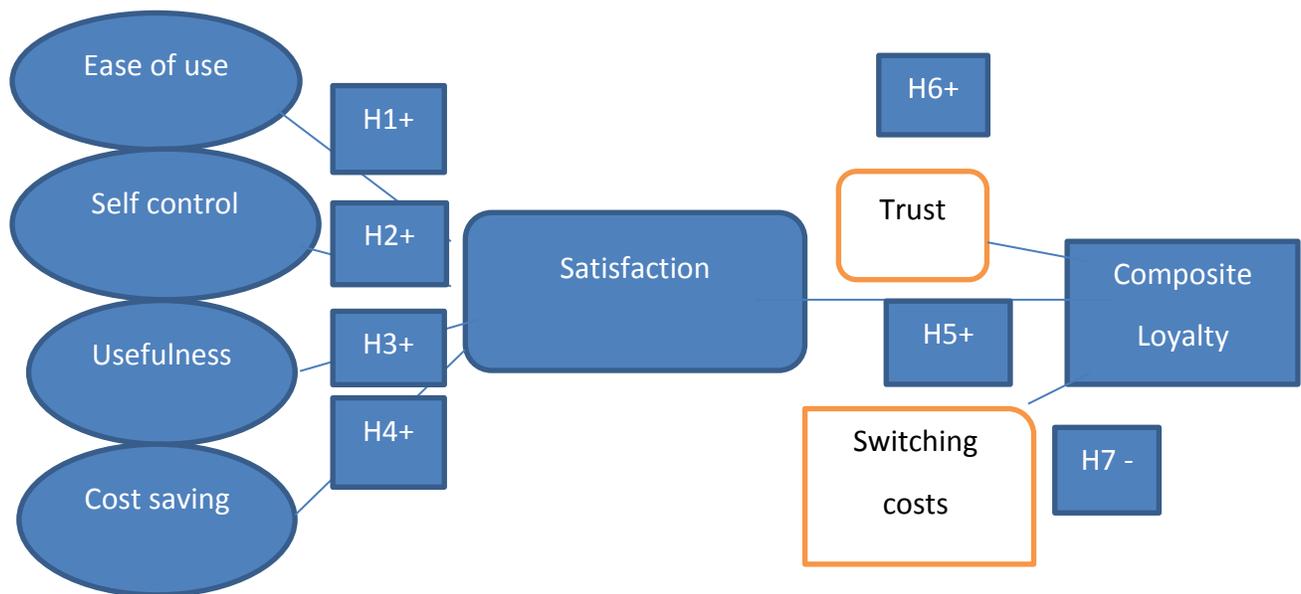


Figure 3: Representation of the study's hypothesis

4.0 METHODOLOGY

This chapter describes the methodology of the thesis. The measures used in the questionnaire, the sampling of the data as well as the collection of the data are described further. The questionnaire which was open for answering during 25th of March – 4th of April 2019 consisted of basic background questions as well as the statement sections. The participants were also able to leave their contact information in case they wanted to be part of a lottery to win a gift card. The measures including the process of obtaining the measures are described next. In the following chapter are presented information on the questionnaire measures, data collection, self-service technology in banking, and banking as an industry.

4.1 Questionnaire measures

The main bulk of the measures for the study's questionnaire were chosen based on measures deemed reliable and valid in previous literature. This is also advised by Metsämuuronen (2006, 49). Accompanied with these measures, the research includes also a few additional measures which were decided to include into the research as they were seen as addition which the research might benefit from.

The respondents were given instructions how to answer the questionnaire. The questionnaire informed the respondents that the questionnaire's mission is to obtain information about self-service technology's effect on customers' satisfaction and loyalty towards the service provider in the banking sector and that mobile banking application is chosen to be the representation of the self-service technology in this research. Mobile banking was chosen as the representation of self-service technology rather than the use of Internet banking since mobile banking was seen as the more contemporary technology and therefore seen as the more meaningful representation to

investigate more. The respondents were given 31 different statements and they are asked to pick the agreement level they feel represents the most their feeling about the statement. Likert scale of 1 to 7 (1 being strongly disagree and 7 being strongly agree) was decided as the measurement scale. The 31 different questions measured customer loyalty, customer satisfaction, trust, switching costs, ease of use, self-control, usefulness and cost savings. The questionnaire was conducted in English and can be found in the Appendix.

Value-in-context is in the core of this study. The way to measure the value in the context of using a self-service technology application was to define some variables which might be attached to the use of self-service technology depending on the user. These variables were identified as ease of use, usefulness, self-control and cost saved and they were used in this study as representation of value-in-context of using self-service technology. The study is aiming to see the correlation of these measures to satisfaction to see whether the use of mobile banking application will correlate with satisfaction.

4.1.1 Ease of use

Ease of use is seen as a factor which provides the self-service activity provides with a clearly usable interface and simple enough process to ensure effective customers usage. (Davis et al., 1989) Ease of use is seen here as an example variable that creates value which is dependable from the person who is using the self-service technology. In the table 1 below are the ease of use statements. These statements have been used and deemed valid previously by Curran et al. (2005) and Ho et al. (2008)

Table 1. Ease of use items and statements

Item	Statement
EasyUse1	I find that mobile banking is easy to use
EasyUse2	It is easy for me to be skillful at using mobile banking application
EasyUse3	Using mobile bank comes naturally for me

4.1.2 Self-control

Lee et al. (2002) described self-control as the ability to perform the service actions flexibly. The items from SelfC1 to SelfC3 were used and deemed valid by Globerson et al. (1991), Lee et al. (2002) and Ho et al. (2008). Even though the previous self-control items were validated it was seen that the study might benefit from additional items (SelfC4 and SelfC5). Items SelfC2 and Selfc3 were more related to the ability to gather information by one's self with the self-service technology and it was decided that this study might benefit from two more items covering more of the actual ability to control the ones actions with the self-service technology.

Table 2. Self-control items and statements

Item	Statement
SelfC1	I have more control over my account due to mobile banking
SelfC2	Mobile banking allows me to know all of the financial services my bank provides
SelfC3	I believe that I can gain more useful information by using mobile banking
SelfC4	I feel it valuable to be able to control my transactions
SelfC5	I am able to be independent with my banking dealings with the use of mobile banking

4.1.3 Usefulness

Usefulness is described as “the self-service activity can improve the way a task is carried out or be helpful with completing the user's tasks” (Davis et al. 1989). Meuter et al. (2005) add that self-service usefulness is able to create customer value in the case when self-service technology is able to fit into people's lives and work. The items to study usefulness which can be seen in table 3 have been previously used and deemed valid by Curran et al. (2005) and Ho et al. (2008)

Table 3. Usefulness items and statements

Item	Statement
Useful1	I can deal with my financial businesses more effectively with mobile banking
Useful2	Through mobile banking I can more effectively manage my money
Useful3	Using mobile banking would allow me to deal with my transactions more quickly

4.1.4 Costs saved

Cost saving can be viewed by saving monetary and other costs. An example of costs not situated with monetary costs are time saving. Ho et al. (2008) have identified that costs saved lead to increased customer value. The items from Cost1 to Cost3 were used and deemed valid by Globerson et al. (1991) and Ho et al. (2008).

Although all three items have been deemed valid, it was seen that this study would benefit from another monetary cost related item to company Cost3. Therefore this study has added an additional item Cost4 to take in account the costs situated with interacting with banking personnel. Fees that banks take tend to be higher on situations where the customer is interacting with banking personnel rather than when he / she is using self-service technology. This sounds logical as the use of self-service technology doesn't add new costs to the bank whereas interaction with banking personnel requires banks to keep more payed workforce.

Table 4. Costs saved items and statements

Item	Statement
Cost1	Using mobile banking can save me time waiting for service
Cost2	Using mobile banking can save me time spent in traffic
Cost3	Using mobile banking can save me transportation costs
Cost4	Mobile banking can save me costs situated with interacting with banking personnel

4.1.5 Satisfaction

Rossomme (2003, 185) argued that satisfaction as a complex construct which is not easy to be defined. That is why it was deemed that measuring satisfaction might benefit from having several different items. The items from Satisf1 to Satisf3 seen in the table 5 with slight modifications were used by Ho et al. (2008). The items from Satisf4 to Satisf6 were slightly modified to fit this study from the American Customer Satisfaction Index (Fornell, Johnson, Anderson, Cha, Bryant, 1996).

Table 5. Satisfaction items and statements

Item	Statement
Satisf1	Transactions give me more pleasure through the use of mobile banking
Satisf2	Using mobile banking lets me feel good
Satisf3	Using mobile banking application satisfies my needs
Satisf4	My overall satisfaction with my mobile bank is strong
Satisf5	The service of mobile banking meets my expectations
Satisf6	The service provided by my mobile banking compares well with an ideal one

4.1.6 Loyalty

The loyalty items here (Loyal1 – Loyal4) were attained with slight modifications from Karjaluoto Jayawardhena, Leppäniemi and Pihlström (2012). The idea is to study both behavioral loyalty as well as attitudinal loyalty. Together they form composite loyalty measurement. With studying composite loyalty the study receives a more thorough look on the loyalty rather than if only one loyalty component was taken into account.

Table 6. Loyalty items and statements

Item	Statement
Loyal1	I am keen on promoting my bank's mobile banking application towards others
Loyal2	I find continuing my relationship with my mobile banking service provider as likely
Loyal3	I will most likely stay as customer of my mobile banking service provider within one year
Loyal4	I am likely to expand my relationship with my mobile banking provider

4.1.7 Trust

Selnes (1998, 308-309) has described trust as the feeling or attitude towards the other party in the relationship. Morgan and Hunt (1994, 23) have described trust to exist when the feeling of reliability towards the other party is formed. Different studies have emphasized that loyalty is not obtained with satisfaction only: trust is also required to be present in the relationship. (Reichheld et al., 2000; Madjid, 2013; Yadav, 2018) Therefore it was decided to include trust items to measure the correlation of trust with loyalty especially in a case where satisfaction would not correlate with loyalty. The trust items as seen in the table 7 (Trust1 – Trust4) were included to measure the correlation of trust and loyalty. The items are slight modification from Karjaluoto et al. (2012)

Table 7. Trust items and statements

Item	Statement
Trust1	I trust my mobile bank application
Trust2	Using mobile banking is trustworthy
Trust3	I trust my mobile banking service provider in general
Trust4	In critical situations I feel I can rely on my mobile bank application

4.1.8 Switching costs

Switching costs measurements were added into this study as a moderator variable. In previous studies satisfaction has been seen to correlate positively with loyalty. Also trust has influenced loyalty positively. The main reason to include switching costs measurement was to find some explanation of possible loyalty in the case where neither satisfaction nor trust wouldn't explain and correlate with higher levels of loyalty. Customers could possibly be loyal for the service provider even though they lacked satisfaction and trust if they deemed that the costs situated with switching the service provider proved to be too cumbersome. Therefore two items (Switch1 and Switch2) were included into this study as seen in the table 8. These items are slight modifications from Buell et al. (2010).

Table 8. Switching costs items and statements

Item	Statement
Switch1	If desired I find it easy to switch my mobile banking service provider
Switch2	Changing mobile banking service provider is easy

4.1.9 Additional questions

Besides having the measures mentioned above, the questionnaire also included questions about the age of the respondent as well as the sex of the respondent. The questionnaire also had a question which excludes some of the respondents' responses. The question asked whether the respondent had in use a mobile banking application provided by a bank that operates in Finland's banking sector.

4.2 Data collection and analyzing

The questionnaire in use was created through a web-based program called Qualtrics. The questionnaire was open between 25th of March – 4th of April 2019. The questionnaire was sent to colleagues, friends and acquaintances. It was also published in social media such as Facebook. The questionnaire was open to be answered by anyone.

Pretesting was performed by three students of Lappeenranta University of Technology. Their comments on the questionnaire were taken into consideration before publishing the questionnaire. Also the questions and the whole survey were approved by a professor of Lappeenranta University of Technology.

The collected data was analyzed with Statistical Package for Social Sciences (SPSS) software. Every question was made as mandatory to be answered and therefore there were no answers to be left out of the survey on that accord. Respondents were not classified to early respondents and late respondents. The time it took for the respondent to answer the questions was neither measured.

4.3 Self-service technology in banking

Self-service technology is as a phenomenon quite recent. The term self-service technology was coined by Meuter, et al. in 2000. The term has received wider acceptance afterwards in the literature and studies concentrating on self-service technology. The studies related to self-service technology are also quite recent and date mostly to the 21st century.

Although the studies of self-service technology are mostly from the 21st century, self-service technology has been part of banking already back in the 1960's. ATM machine got a patent in the

1960's and was taken in to use in the same decade. Maybe the most notable self-service technology the banking industry started offering after the ATM was the Internet banking. Finland was in the forefront of this technology as OP-group opened up their Internet banking during 1996. The rise of Internet banking has led to the fact that banking branches have become less needed in performing everyday banking activities. This in turn leads to the fact that bank branches are being closed at an increasing rate (Helsingin Sanomat, 2018).

Internet bank has for years been very popular amongst bank customers, but during the past years mobile banking applications have surpassed the popularity of the Internet bank. This was estimated already in 2001 as Karjaluoto et al. predicted that mobile banking will become the main way to make transaction and that it would render credit cards useless eventually. Karjaluoto et al. (2001) based this notion on the fact that customers' value convenience increased choice of channels and improved control over their banking actions. According to Nordea's and Danske Bank's spokespersons mobile banking applications log ins surpassed the Internet bank log ins during the year 2017 (Yle, 2017), (Danske Bank, 2017) As this rise continues, it was deemed that it is more advisable to investigate the affect that the use of mobile banking applications have on satisfaction and loyalty, because it is the more contemporary and popular way of handling one's bank related matters.

Research papers have discussed the self-service topic from many angles. Research papers examining self-service technology in particular in the banking sector have been written by Karjaluoto, Mattila and Pento (2001), Hitt and Frei (2002), Campbell et al. (2010), and Xue, Hitt and Chen (2011). Karjaluoto et al. (2001) suggested already in 2001 in their research that mobile banking will soon become the main way to make transactions and that it will make void different payment methods such as credit cards. Karjaluoto et al. (2001) continue to state that customers value convenience, increased choice of channels and improved control over their banking activities in the self-service technology. Campbell et al. (2010) have suggested that while customers adopting self-service technology such as online banking increase their volume of transaction and customer retention, the profitability of them lowers.

4.4 Banking Industry

Banking industry has an important role in offering financing as well as in the whole economy. Historically banks have offered loans as well as taken in deposits which have helped economies grow. Banks have been involved also in wealth management and offering different investing solutions to customers. One of the most important functions of banks is the effective transferring on payments and transfers which is essential to the modern day economy. (FIVA, 2017)

Currently there are over 200 banks operating in Finland. These include deposit banks, foreign credit institutions branches and subsidiaries and investment banks. Recently after the financial crisis the legislation for banking has grown. This has had a big impact on the whole financial sector. (FIVA, 2017)

Banking as a business has long roots and the sector has survived through its history with the same base of making money: taking deposits in and lending the money with interest onwards. This has of course changed somewhat during time as well as the sector has introduced new lines of business such as wealth management. Now however, the banking sector is going through a large change. Digitalization has come fast to the sector and is changing banks' business models. (Ilta-Sanomat, 2015) Estimations are that banking business will change in the next 10 years more than it has changed in the past 50 years (Symbio, 2016). Banks have to be more agile and part of the solution to be more agile is serving customers differently. One example of different kind of service which the banks have started to rely on is the introduction of new self-service technology solutions to the customers. Incorporation of self-service technology is seen as paramount to the survival of banks (Banking Exchange, 2018), (Accenture, 2017).

5 FINDINGS

The analysis of the results of the questionnaire is presented in this chapter. This chapter takes a closer look on the respondents, factoring of the measures, formation of summated scales and the reliability of the assessments are also scrutinized. Regression analysis is performed lastly to observe the hypothesized relations between each concept.

5.1 Respondents

The underlying study in this paper is based on B2C concept and respondents were required to represent their own feelings as a consumer. The questionnaire was completed by 92 respondents. However, the study is delimited to handle only self-service technology provided by a bank that operates in Finland. The questionnaire included a question which asked the respondents whether they had a mobile bank in use from a bank that operates in Finland. This question revealed that three respondents didn't actually have a mobile bank application provided by a bank that operates in Finland. After excluding these responses, there was total number of 89 valid responses taken into account. Out of these 89 respondents 47 were women and 42 were men. These figures give us percentage figures of 52,8 for women and 47,2 for men. The respondents' ages ranged from 21 to 66 the average being 30,8 years.

5.2 Measurement scales

Factor analysis was performed on the items used in this study to be sure that the items measure what they are supposed to measure. Reductions were made if the items did not load with the anticipated items. Reliability tests were performed on the summative scales to ensure the reliability of the study.

5.2.1 Factor analysis

Factor analysis is a statistical approach with which the information gathered by several different variables can be compressed into summated scales. Factor analysis is also concerned in finding the variables which correlate the most with each other and thus form an entirety. (Metsämuuronen, 2006, 581).

In this study principal axis factoring was conducted along with VARIMAX rotation method with Kaiser Normalization. The VARIMAX rotation method was used on all of the factor analyses. The following tables present the final factor solutions. The items are abbreviated as follows: ease of use measurements: EasyUse1-EasyUse3, customer loyalty measurements: Loyalty1- Loyalty4, self-control measurements: SelfC1-SelfC3, usefulness measurements: Useful1- Useful3, customer satisfaction measurements: Satisf1- Satisf6, switching costs measurements: Switch1- Switch2, costs for users measurements: Costs1-Costs4 and trust measurements: Trust1-Trust4.

The ease of use statements were entered together with loyalty statements into the factor analysis. The outcome was that ease of use measurements as well as loyalty measurements loaded strongly on two factors and therefore no reductions on items were needed. Loadings of the factors can be seen in the table 9.

Table 9. Rotated final factor solutions for Ease of use and Loyalty

Variables	Factor 1	Factor 2
EasyUse1		0,690
EasyUse2		0,785
EasyUse3		0,721
Loyalty1	0,648	
Loyalty2	0,82	
Loyalty3	0,762	
Loyalty4	0,525	
Eigenvalue	3,726	1,188
Percentage of Variance Explained	53,226	16,976
Cumulative Percentage of Variance Explained	53,226	70,202

Self-control and useful items were entered together in the factor analysis and all items except SelfC1 were deemed to load adequately on two different factors as shown in the table 10. Therefore SelfC1 was discarded out of the final summative scales.

Table 10. Rotated final factor solutions for Self-control and Usefulness

Variables	Factor 1	Factor 2
SelfC2		0,472
SelfC3		0,946
Useful1	0,566	
Useful2	0,98	
Useful3	0,48	
Eigenvalue	2,492	1,006
Percentage of Variance Explained	49,846	20,11
Cumulative Percentage of Variance Explained	49,846	69,956

Satisfaction items and switching costs items were also entered together to see how these items form factors. All of the satisfaction as well as the switching costs items were found to load strongly on their own factors. Therefore no deductions were made on these items. All the loadings can be seen in the table 11.

Table 11. Rotated final factor solutions Satisfaction and Switching costs

Variables	Factor 1	Factor 2
Satisf1	0,579	
Satisf2	0,592	
Satisf3	0,847	
Satisf4	0,860	
Satisf5	0,841	
Satisf6	0,853	
Switch1		0,999
Switch2		0,725
Eigenvalue	3,999	1,776
Percentage of Variance Explained	49,993	22,196
Cumulative Percentage of Variance Explained	49,993	72,188

Lastly costs situated with the use of self-service technology and trust items were measured. All the items loaded adequately into two different factors and therefore all of the items were used to conduct the summative scales. The loadings of the factors can be seen in the table 12.

Table 12. Rotated final factor solutions Costs for customers and Trust

Variables	Factor 1	Factor 2
Costs1		0,478
Costs2		0,889
Costs3		0,792
Costs4		0,647
Trust1	0,923	
Trust2	0,947	
Trust3	0,862	
Trust4	0,731	
Eigenvalue	4,385	1,621
Percentage of Variance Explained	54,818	20,262
Cumulative Percentage of Variance Explained	54,818	84,942

5.2.2 Summative scales

The summative scales are formed by combining the accepted items from factor analysis into a single composite measure. The items accepted to the summative scale must load highly on a factor. All of the accepted items are combined and the total average score of the items is used as the final summative scale. This also reduces measurement error. (Hair et al., 1998, 116 - 119)

After the factor analysis eight different summative scales were formed to measure the hypotheses of this study. In order to be sure that the summative scales are reliable enough to measure the hypothesis reliability tests were performed on the summative scales. When testing the reliability of the summative scales Cronbach's alpha was used as a coefficient measure. Cronbach's alpha is a widely recognized measure and its purpose is to measure the repeatability of the whole scale. (Metsämuuronen, 2006, 442) The accepted minimum level for Cronbach's alpha is .70 (Hair et al. 1998, 118)

Table 13 represents Cronbach's alpha measures among other factors from the summative scales. The Cronbach's alpha scores vary from 0,654 of self-control to 0,933 of trust. For all of the items measured the Cronbach's alpha score was over 0,700 except for self-control. Therefore this item's reliability is questionable. However, since the Cronbach's alpha score for self-control was rather close to being 0,700 (0,654), it was decided to keep in the study. Other items had the following scores for Cronbach's alpha: ease of use 0,800, usefulness 0,706, costs 0,813, satisfaction 0,888, loyalty 0,814 and switching costs 0,842. Mean scores vary from 1,7116 for ease of use to 3,9663 of switching costs. Standard deviation is between 0,71278 and 1,30078 ease of use representing the lowest standard deviation and switching costs representing the highest score.

Table 13. Cronbach's alpha, mean scores and standard deviation for all the scales

Scale	Cronbach's alpha	Number of items	Mean score	Standard deviation
Ease of use	0,8	3	1,7116	0,71278
Usefulness	0,706	3	1,839	0,80106
Self-Control	0,654	2	3,3708	1,11429
Costs	0,813	4	2,51	1,18672
Satisfaction	0,888	6	2,5225	0,93514
Loyalty	0,814	4	2,3764	0,95504
Trust	0,933	4	2,0393	0,85438
Switching costs	0,842	2	3,9663	1,30078

5.3 Hypotheses testing

After the reliability tests the hypotheses of this study are tested. Before that the theoretical background behind regression testing is discussed. The hypotheses of this study are analyzed first through Pearson correlation matrix and then by regression analyses. In the regression analyses the hypotheses are tested and based on that can be concluded whether the measurements correlate with the dependent variables satisfaction and then with loyalty.

5.3.1 Regression analyses

Regression analysis is performed when a study has a dependent variable and the desire is to find out whether two or more independent variables have an effect to the independent variable. In other words according to Hair et al. (1998, 14) the goal is to be able to predict the changes in the dependent variable with the changes of the independent variables.

In this study there were two main correlations that were studied. Firstly there was the value components' correlation with satisfaction. The other part of the study evolves around with studying whether satisfaction has correlation with loyalty. This is tested with including items such as trust and switching costs to see if there is some other reason that might be explaining loyalty. For these two different studies there was conducted a Pearson correlation matrix as seen in tables 14 and 15.

When examining table 14 it can be seen that correlation between the items varies from 0,694 to 0,320. Correlation figures represent the connectivity between two different variables. These values can range from 1 to -1. The closer the figures are to 1 and -1, the closer the connectivity between these two items. Positive figures suggest that once values of an item grow also the value of the counterparty in question grows. If the figure is negative, a negative correlation between the two items exists. The correlation of each value attribute can be seen as high as well as positive towards satisfaction. These values range from 0,490 of self-control to 0,672 of usefulness. This implies that all of the items correlate positively with satisfaction. All of the measures in table 14 were deemed as significant with a significance level of 0,001.

Table 14. Correlations between the value measures and satisfaction

	Satisfaction	Ease of Use	Self-control	Usefulness	Cost
Satisfaction	1				
Ease of Use	0,577	1			
Self-control	0,490	0,320	1		
Usefulness	0,672	0,694	0,437	1	
Cost	0,569	0,345	0,415	0,421	1

Table 15 represents the correlation of satisfaction, switching costs and trust towards the dependent variable loyalty. Satisfaction and trust correlate very highly with satisfaction with figures of 0,768 and 0,745. Switching costs measure, however, has a minor negative correlation (-0,120) with loyalty. Switching costs measure is also not significant with a significance level of 0,001. We can conclude that satisfaction and trust correlate positively and highly towards loyalty. The correlations of these measures have also been found to be significant. The correlation of being able to switch one's self-service provider easily has a low and negative correlation with loyalty. It is also not significant. Therefore we can conclude that the measurement switching costs does not have positive correlation towards loyalty.

Table 15. Correlations between loyalty and satisfaction, switching costs and trust.

	Loyalty	Satisfaction	Switching costs	Trust
Loyalty	1			
Satisfaction	0,768	1		
Switch	-0,120	0,118	1	
Trust	0,745	0,664	-0,073	1

In the next part the regression tests' results are being analyzed. Table number 16 represents the first four hypotheses with which are measured how they correlate with satisfaction. As it can be seen from the table 16 the R square for the measurements combine to a total of 0,586 or 58,6 percent. This means that these four measurements together explain 58,6 percent of the satisfaction (Metsämuuronen, 2005, 664).

Hypothesis 1 assumed that ease of use would correlate positively with satisfaction. Positive correlation was found to support this assumption but with a significance level of over 0,05 (0,072) the measurement has to be rejected, because of the statistically insignificant coefficients. Unlike

like other studies which have been made on the matter, ease of use does not positively correlate with customer satisfaction.

Hypothesis 2 suggested that self-control will have an effect on satisfaction. Similarly as with H1, the self-control measure shows positive correlation with satisfaction, but falls just short of the significance level of 0,05 with a significance score of 0,06. Therefore the hypothesis 2 has to be rejected.

Hypothesis 3 assumed that usefulness will have a positive impact towards satisfaction. The positive correlation of usefulness and satisfaction is indeed supported by the regression test's results. Hypothesis 3 is supported by a large t-statistics value and a significance level of 0,001. Therefore we can conclude that usefulness has a correlation with satisfaction and H3 is accepted.

Hypothesis 4 suggests that costs saved with the use of self-service technology will have a positive correlation with satisfaction. As we can see from the table 16 costs saved have a large t-statistics with a significance level of 0,001 and it can be concluded that costs saved has a positive correlation with satisfaction. Along with usefulness, costs saved are the main drivers behind satisfaction in this study. Along with H3, also H4 is accepted.

Table 16. Regression results – Value measurements on satisfaction

Independent variable	Hypothesis	R Square	B	Beta	t	Sig.	Tol.	VIF
Ease of Use	H1	0,586	0,234	0,178	1,821	0,072	0,515	1,942
Self-control	H2	0,586	0,130	0,155	1,906	0,060	0,744	1,344
Usefulness	H3	0,586	0,418	0,358	3,427	0,001	0,452	2,212
Cost	H4	0,586	0,230	0,292	3,611	0,001	0,752	1,33

Table 17 represents the last part of the regression tests. This table includes the independent variables of satisfaction, switching costs and trust on the dependent variable of loyalty. The R-square gives a high value of 0,712, which indicates that 71,2 percent of the variance in loyalty can be explained with these three variables.

Hypothesis 5 assumed based on previous literature that satisfaction will have a positive correlation with loyalty. With a strong Beta figure of 0,536, significance level of 0,000 and strong t-statistics 6,705, it can be concluded that satisfaction correlates very highly with loyalty. Therefore H5 is accepted.

Hypothesis 6 stated that trust has a positive correlation with loyalty. As can be seen from the fairly high Beta and t-statistics value and the significance level of 0,000 in the table 17 this hypothesis can be accepted. This goes hand in hand with the previous literature that had stated that trust is usually required when loyalty is wanted to be achieved.

Previous literature hadn't been unanimous in its stance on satisfaction's correlation on loyalty. To see if switching costs might be the reason for loyalty, H7 proposed that switching costs do not have positive correlation with loyalty. H7 received a low score of -0,120 in its correlation to loyalty in the Pearson's correlation matrix and is rejected altogether.

Table 17. Regression results satisfaction, switching costs and trust on loyalty

Independent variable	Hypothesis	R Square	B	Beta	t	Sig.	Tol.	VIF
Satisfaction	H5	0,712	0,547	0,536	6,705	0,000	0,531	1,882
Switch	H6	0,712	-0,114	-0,156	-2,600	0,011	0,945	1,058
Trust	H7	0,712	0,423	0,378	4,755	0,000	0,536	1,865

5.3.2 Summary of results for hypotheses testing

Table 18 represents the results for each hypotheses tested in the regression test. Out of the seven hypotheses four were accepted and three were rejected because of low correlation or insignificance.

Table 18 summary of the hypotheses results

Hypothesis	Statement	Results
Hypothesis 1	Ease of use has a positive correlation with customer satisfaction	Rejected
Hypothesis 2	Self-control has a positive correlation with customer satisfaction	Rejected
Hypothesis 3	Usefulness has a positive correlation with customer satisfaction	Accepted
Hypothesis 4	Costs saved has a positive correlation with customer satisfaction	Accepted
Hypothesis 5	Satisfaction correlates positively with loyalty	Accepted
Hypothesis 6	Trust correlates positively with loyalty	Accepted
Hypothesis 7	Switching costs does not correlate positively with loyalty	Rejected

6 CONCLUSIONS

This study has investigated the relation of self-service technology towards satisfaction and does this satisfaction correlate with loyalty. The relationship with self-service and customer satisfaction has been decided to be presented with value components that represent the value that self-service might bring to the user. These are identified as usefulness, ease of use, self-control and costs saved. After testing these value components towards satisfaction, customer satisfaction's correlation to loyalty is tested. According to literature satisfaction is not always a precursor for loyalty whereas theoretical background suggests that trust might have an effect in providing loyalty rather than just mere satisfaction. The significance of switching costs towards loyalty was also studied. Switching costs measurement was introduced as a variable which might explain loyalty in a case where satisfaction or trust was not being found to correlate and explain loyalty.

This study was based on a theoretical part as well as an empirical part which included a free for all to answer questionnaire about the participants feeling towards self-service technology. The questionnaire was distributed to various acquaintances as well as posted on social media such as Facebook. The data was collected with a web-based questionnaire made by Qualtrics. The data was collected between 25th of March – 4th of April 2019 and after reducing the respondents only to those who have a mobile banking application in a bank that operates in Finland, there were a total of 89 valid responses. The data collected was analyzed with SPSS program.

The number of studies about self-service technology has increased during the start of the 21st century. (Meuter et al., 2000), (Bitner et al., 2000), (Barnes et al., 2000), (Buell et al., 2010) Literature has been indifferent whether self-service technology actually leads to satisfaction and loyalty in customers. Literature has been quick to note that there are several factors affecting the adoption as well as the value received and satisfaction regarding self-service technology. Companies wishing to incorporate self-service technology to their customers need to concentrate on the value that self-

service technology might offer to the users. Literature suggests that companies should realize that value is experienced in differently by different users and that value is context dependent. Value components to which companies might want to concentrate in their offering are ease of use, self-control, usefulness and costs saved.

There have been a lot of studies analyzing the correlation of satisfaction to loyalty. The main bulk of these studies lean towards that satisfaction does correlate with loyalty. Although some this view has received some criticism. Some literature emphasizes that satisfaction itself does not lead towards loyalty straight away, but rather it being one of the many steps in the path towards loyalty. Some literature mentions the importance of trust in obtaining loyalty. This study introduced satisfaction and trust measures and also switching costs measure to see what might be the correct measures to correlate with loyalty.

6.1 Reliability and validity of the research

When wanting to know whether the outcomes of the study conducted are trustworthy, the reliability and the validity of the study should be scrutinized. According to Metsämuuronen (2006, 64) reliability refers to the ability to repeat consistently the study so that the results would be similar despite measuring it several times with the same measures. Validity in turn refers to the fact that is the study measuring the correct phenomenon it should be measuring. (Metsämuuronen, 2006, 64).

When performing studies with questionnaires it always leaves some questions about the reliability. There is no ability for the conductor of the study to clarify any of the questions or any part of the study to the person taking the questionnaire. This might lead to misconceptions in answering as well as receiving answers which are not truthful. Also some questions might be left unanswered. (Wilson, 2003, 128) This was not the case however; as the questionnaire was conducted so that each question had to be answered in order to complete the survey.

The reliability of this study was examined through Cronbach's alphas. All except self-control measurements passed the Cronbach's alpha test. The self-control measurement was also very close to being within the 0,700 limit. It scored 0,654 and was deemed questionable. However, it was decided to include also into the regression testing.

The measures used in this study were validated in previous literature all except two self-control items. These non-validated self-control items were included into the study in order to receive more insight into the actual controlling one's actions with self-service technology. These self-control items were ultimately dropped out due to the fact that these items didn't load properly on the factor analysis. Other than that, the study had a good validity.

6.2 Theoretical and managerial implications

The purpose of this study was to analyze how self-service technology can affect loyalty through satisfaction in the banking sector. The self-service technology component was decided to study through the value-in-context it might bring to the users. The value attributes related to the value of self-service were identified as ease of use, self-control, usefulness and costs saved. The context of self-service technology in the questionnaire of this study was mobile banking application. Previous literature had found that value correlates positively with satisfaction and the underlying assumption was that these value controls in use would correlate with satisfaction. However, due to reliability and validity issues both ease of use and self-control hypotheses had to be rejected from the study.

Therefore this study cannot offer validity to the statements that ease of use and self-control correlate positively with satisfaction. It must be kept in mind that these items are context specific and additional study on the effect on ease of use and self-control in obtaining satisfaction with mobile banking might benefit from further studies.

Usefulness and costs saved had been identified in previous literature as attributes which offer value. These items were also seen to correlate with satisfaction as the value and satisfaction literature leads us to understand the correlation with those two phenomena. Managers would be wise to keep in mind the usefulness and costs saved when thinking about their self-service technology offerings. The value in these is always context specific and managers wanting to utilize these should think about how to cater for these to be present in their self-service technology offering. When thinking about costs saved by the customer, management should not limit their scope to monetary costs saved. Time savings can also play a big factor in how satisfied the customer is with the service provided. The usefulness of the self-service technology relates to how effectively they can manage their affairs. When introducing self-service technology to customers, management should keep in mind how to make the technology most effective for their customers. Adding relevant features which might correlate with more usefulness with the customers might be something to think about.

As Vargo and Lusch (2004) have stated the new way of looking at marketing is to see that value of services is highly dependent on the context. The context in which the service is used is the defining factor determining whether the customer actually sees value and obtains satisfaction. It is instrumental to realize that different users see the value differently based on their preferences and capabilities. Users of the self-service technology can also see the value of the service differently on different times. For example once the knowledge of how to properly use the service grows, value and satisfaction is realized in a different way and can be expected to grow.

The satisfaction of customers has been identified as being beneficial for firms to have. In some studies satisfaction has been found to correlate with loyalty. However, previous literature has also found that satisfaction does not always lead to loyalty and one cannot jump to the conclusion that satisfied customers are always loyal. Satisfaction might be just one precursor on the way to loyalty as Oliver (1999) has stated. Some literature has found that satisfaction needs trust to go with it in order to achieve loyalty of the customer. If both of these are lacking from the customer - service provider

relationship another reason for loyalty can be too high switching costs that the change of service provider might result in.

In this study satisfaction was found to correlate positively with loyalty. Also trust was seen to promote loyalty in users. Satisfaction and trust also saw correlation between each other. Based on this it is concluded that satisfaction does correlate with loyalty as the main bulk of literature suggests. The role of trust might be an a deciding factor as it was also found to correlate with loyalty in this case and was found in the users. The relationship between satisfaction and trust would be something to conduct more studies on to completely understand the relationship between satisfaction loyalty and trust. In this study the easier the customers felt that they can change service providers saw a very low negative correlation with loyalty which would be expected. However, this negative correlation was very low as well as it was insignificant so no real conclusions can be drawn from that.

Companies offering self-service technology should keep in mind how to promote satisfaction and trust with their service. A way to achieve this is to concentrate on laying the foundation for customers to experience value in their use of the service. Based on this study it would be especially beneficial to concentrate on the value attributes of usefulness and costs saving. It can be concluded that through offering satisfaction to the customer, these components can also lead to loyalty.

6.3 Limitations of the research and proposals for the future

Like many studies also this one has its own limitations when analyzing the outcome of the study. The number of respondents for this study is fairly low (N = 89) and this might have an effect on the outcome of the study. Some previously validated measurements did not find the same correlation as they previously have had in the previous literature.

This study identified four different value components that were the representation of the value that self-service technology offers. These value components were ease of use, self-control, usefulness and costs saved. As this study has discussed the value customers receive are dependent on the particular context to which the customers' own preferences and capabilities have an effect. Therefore it might be plausible that there are more value components that the value of self-service and its correlation towards satisfaction could be measured with.

The items in the survey of this study were not all validated before in previous literature. Although the suggestion is to use only previously validated items, it was deemed that the study needed some additional items with which to measure the phenomena in this study. Although these items were ultimately dropped in the factor analysis phase of the study, this is one of the limitations of this study and somewhat lowers the validity of the results.

When talking about context dependency it is good to note that the value in context differs through time. Skill of using the self-service technology tends to build up as time goes on. Mobile banking which was chosen as the representation of the self-service technology has surpassed the use of Internet banking a few years ago. This, however, doesn't mean that the technology has matured yet in the sense that the users of it can receive the full benefits of this self-service technology. Therefore it might be valid to continue studying the same topic further on once the users have been using the technology for a longer period and thus, most probably see the value in context differently. This in turn might have an effect on the current satisfaction and loyalty.

In this study satisfaction and trust both correlated positively with loyalty. They also correlated positively with each other. Previous literature has been indifferent whether satisfaction actually leads to loyalty and what is trust's role in that. Further research would be encouraged to study whether trust is always needed in order to achieve loyalty. Also the correlation between satisfaction and trust would be beneficial to study more in order to understand the correlation between satisfaction trust and loyalty.

Lastly this study included switching costs as a measurement to help understand possible loyalty in specifically in the case where satisfaction and trust would be missing. The switching costs measurements were, however not studied as a control variable which would have added validity to the study. It is advised that future studies conducted on satisfaction, trust and loyalty would include switching costs measurement as a control variable.

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APPENDIX

The questionnaire used in order to study the correlation of chosen value attributes on satisfaction and satisfaction's, trust's and switching cost's correlation on loyalty:

This survey is conducted on purposes of obtaining information for a Master's Thesis. The survey is anonymous and no personal information shall be presented forward. It is optional to leave your email address at the end of the survey if you wish to be part of a lottery to receive a gift card.

What is your age?

What is your gender?

Male

Female

Do you have in use a mobile banking application provided by a bank which operates in Finland?

Yes

No

The following questions ask about the respondent's opinion of their mobile banking application. Please answer the questions by using the scale below (for each question choose the agreement level you feel resembles the most your opinion on the matter). Please answer open and honestly, there are no right or wrong answers.

Pick the agreement level you feel represents your opinion the most on each statement.

Agreement levels (Strongly Agree, Agree, Somewhat agree, Neither agree nor disagree, Somewhat disagree, Disagree, Strongly disagree)

I find that my mobile bank application is easy to use

It is easy for me to be skillful at using mobile banking

Using mobile banking comes naturally for me

I can deal with my financial businesses more effectively with mobile banking

Through mobile banking I can more effectively manage my money

Using mobile banking allows me to deal with my transactions more quickly

I have more control over my account due to mobile banking

Mobile banking allows me to know all of the financial services my bank provides

I believe that I can gain more useful information by using mobile banking

I feel it valuable to be able to control my transactions

I am able to be independent with my banking dealings with the use of mobile banking

Using mobile banking can save me time waiting for service

Using mobile banking can save me time spent in traffic

Mobile banking can save me transportation costs

Mobile banking can save me costs situated with interacting with banking personnel

Transactions give me more pleasure through the use of mobile banking

Using mobile banking lets me feel good

Using mobile banking application satisfies my needs

My overall satisfaction with my mobile bank is strong

The service of mobile banking meets my expectations

The service provided by my mobile banking compares well with an ideal one

I am keen on promoting my bank's mobile banking application towards others

I find continuing my relationship with my mobile banking service provider as likely

I will most likely stay as customer of my mobile banking service provider within one year

I am likely to expand my relationship with my mobile banking provider

If desired I find it easy to switch my mobile banking service provider

Changing mobile banking service provider is easy

I trust my mobile bank application

Using mobile banking is trustworthy

I trust my mobile banking service provider in general

In critical situations I feel I can rely on my mobile bank application