Service quality and its effect on customer satisfaction in online-banking
A quantitative study about the relationship between service quality and customer satisfaction

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**Title**
Service quality and its effect on customer satisfaction and in online-banking, a quantitative study about the relationship between service quality and customer satisfaction.

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**Abstract**
The continuous development and expansion of online-banking have significantly changed the way of conducting banking errands. The traditional bank is gradually perishing as online-banking takes over, leading customers and banks to acquire new ways of communicating. Self-service technology and customer needs have changed the relationship between banks and their customers from physical to digital. Online-banking relationships were established to create interest for long-term relations to avoid the cost of acquiring new customers.

How service quality factors within online-banking affect customer satisfaction have become relevant to study as it contributes to a bank’s performance. Where the performance increases the chances of competitive advantages such as a bigger market share and long-term success in the banking industry.

The purpose of this thesis is to explain how service quality within online-banking affects customer satisfaction, using service quality factors from the e-SERVQUAL, SSTs and TAM. A quantitative method based on relevant theories were used through a positivistic and a deductive research approach in order to test the study hypotheses. The result of this study is based on 110 respondents. The result presents a positive relationship between service quality and customer satisfaction, as Technology and Fulfilment contributed the most and Reliability the least to customer satisfaction.

**Keywords**
Customer satisfaction, Service quality, e-SERVQUAL, SSTs, TAM
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LIST OF DEFINITIONS & ABBREVIATIONS

**Fin-Tech**: Financial Technology, describes a business that aims at providing financial services using software and modern technology (Fintechweekly, 2018).

**Online-banking**: Allows a user to execute financial transactions via the internet (Investopedia).

**Block chain**: Is a digitized, decentralized, public ledger of all crypto currency transactions (Investopedia).

**Cloud computing**: Is the delivery of computing services, such as storage, databases, networking and more over the internet (Microsoft, 2018).

**Traditional banking**: Transactions occurred over the counter, in fixed places or facilities (GPS, 2016).

**Customer satisfaction**: Customer fulfilment and terms of pleasurable of the service and related to the whole consumption experience (Grönroos, 2007).

**SST**: Self-service technology (Bitner, Meuter, Ostrom, & Roundtree, 2000).

**SERVQUAL**: Distinction between customers’ expectation of the service outcome and the customers’ perception of the actual outcome (Parasuraman, A; et al, 1988).
1. INTRODUCTION

This introductory chapter is describing the background for the chosen subject. Further, a problem discussion is presented describing the relevance for researching service quality and its effects on customer satisfaction. The purpose and the research question are developed from the background and problem discussion. Lastly, definitions and the disposition is presented.

1.1 BACKGROUND

In 1990 Bill Gates said, “Banking is necessary; banks are not”, and his statement is more relevant now than ever (Hafstad, 2016). Technology and changing customer behavior are causing banks to redefine their main assignment (Bränström, 2016). Financial technology (FinTech) has significantly changed the banking industry in areas such as mobile internet, search engines, cloud computing and block-chains, forcing traditional banks to transform and upgrade (Zhuming, Li, Wu, & Luo, 2017). Since the establishment of traditional banks, the role has been to act as an intermediary when transferring capital between individuals (Björgell, 2013). With this said, online-banking offers corresponding services as the traditional bank yet carried through independently online by the costumers (Ndubisi, 2007).

Between 2005 and 2016, 89 % of the overall users in Sweden used internet for online-banking (Statista, u.d.). This phenomenon has created different attitudes towards banks and their online-platforms. At the same time traditional banks massive transformation towards online-banking causes the market to take on new competition and demand for customer orientation (Alt & Puschmann, 2012).

The continuous development and expansion of the internet have led customers and banks to acquire new ways of communicating, leading to a prominent impact on the banking industry (Ganguli & Roy, 2011). Consequently, new developments in communication channels offering customers a diverse range of services 24 hours a day, such as monitoring account balance and transferring funds. Furthermore, supporting just-in-time deliveries and quick response of services in the online marketplace to advance information sharing between the bank and its customers. Previously, the banks used to control the customer relationship, however, developments in the banking industry allowed the customers more control over their online-banking needs (Awad, 2000). Lack of physical interaction and the simplicity of changing banks creates obstacles for the banking industry to retain their
customers. Customers distinguish banks based on prices and service qualities, which makes the selection-process for customers complicated as banks online services are fairly identical, making customer satisfaction towards online-banking an interesting subject to study. As a result, customer satisfaction measures provided feedback on how well the bank is functioning (Flanagan & Fredericks, 1993). Thus, researchers find it important to study self-service technologies (SSTs) as it is changing the way customers interact with their banks to generate service outcomes. Self-service technologies (SSTs) are technological interfaces which helps customers to complete a service independently. To further reflect on SSTs in this thesis, the service quality dimension is taken into consideration to measure customer satisfaction in online-banking (Bitner, Meuter, Ostrom, & Roundtree, 2000).

Mols N. (2000) states that customer acceptance of online-banking may bring change in the way banks maintain and build close relationships with their customers. The acceptance model (TAM) describes how customers react to new innovations in technology. Davis (1989) stated that previous research indicated two reasons for how well a customer accept technological information; perceived usefulness (PU) and perceived ease of use (PEOU). Customer acceptance reflects the overall service quality delivery in online-banking in order to satisfy customer needs. Therefore, banks heavily rely on what attributes costumers utilize to assess the overall service quality and satisfaction (Yang & Fang, 2004). Another model measuring service quality is the SERVQUAL model developed by (Parasuraman, A; et al, 1988). The SERVQUAL model cannot be fully applied when researching online services, however, Parasuraman et al. (2000) continued to develop the SERVQUAL and established the e-SERVQUAL model to measure service quality in online services. Therefore, understanding service quality issues within online-banking becomes very important when satisfying customers (Broderick & Vachirapornpuk, 2002).

Customers can face difficult decision-making processes when technological problems occur in online-banking, this is where physical interaction with employees is important (Zeithaml, Parasuraman & Malhotra, 2005). The physical interaction is not as necessary as the development of technology (Hoyt, 2010). As the physical interaction is descending the implication of SSTs is becoming more desirable as it is beneficial for both customers and banks. Although, the implication is beneficial as customer satisfaction is affected in many ways using SSTs (Johns & Perrot, 2008).
Migration from traditional- to online-banking has made a difference in what to expect from banks. As the banking services becoming more online, perceptions on customer satisfaction have led to an increase in competition, globalisation and convergence, forcing banks to develop new strategies to retain their customers. Therefore, banks face new threats as the traditional banking implication of customer satisfaction disappears (Schultz & Bailey, 2000). As banks disclose traditional bank offices in favour of online-banking, further research is needed on how such an advancement is perceived to change customer satisfaction (Ryals, 2005).

1.2 PROBLEM DISCUSSION
Service quality in online-banking is a subject of substantial importance by both researchers and banks, as it contributes to a banks performance. During the introduction of the online-bank, the approach to service quality changed. Service quality factors which previously affected customer satisfaction changed as online channels became more relevant. Thus, online-banks desire to uncover which service quality factor is most important and contributes the most to customer satisfaction (Yang & Fang, 2004).

Grönroos C. (2007) states that Customer Satisfaction is fulfilment in terms of pleasurable services which are related to the whole consumption experience. Customer satisfaction is a crucial factor as it can determine whether the bank will fail or survive, which is why customer feedback has to be collected regularly (Green & Thompson, 2000). Especially, customer needs and valuable sources of information regarding customer decision making (Grönroos, 2007).

The relationship between service quality and customer satisfaction is discussed among researchers. Negi (2009) states that in previous research, there have been several opinions if service quality leads to customer satisfaction or vice versa. Parasuraman,. et al (1988) states that there is a relationship between service quality and customer satisfaction, however, which characteristics defining service quality are still argued for.

As previous research describes, service quality has an affect on customer satisfaction, however, the effect of the service quality factors varies depending on the context and research method.
As this thesis focuses on service quality and customer satisfaction, a master thesis written by Saha & Zhao (2005) is considered valuable as a potential contribution as it relates to our research focus. However, to develop a distinction between the studies, different service quality factors are used in order to measure customer satisfaction in an online banking context.

To best of our knowledge, it has not been clarified which service quality factor positively contributes the most to customer satisfaction in online-banking (Negi, 2009). Therefore, leaving us with an opportunity to stand out by combining different theories, in order to explain how service quality affects customer satisfaction.

1.3 RESEARCH PURPOSE
The purpose of this thesis is to explain how service quality within online-banking affects customer satisfaction. Using service quality factors from the e-SERVQUAL model, the self-service technologies model (SSTs) and the technology acceptance model (TAM).

1.4 RESEARCH QUESTION
How does service quality factors within online-banking affect customer satisfaction?

1.5 DISPOSITION/OUTLINE
Chapter 1: Introduction – In the first chapter the background and problem discussion is presented. The basis of this chapter is to introduce online-banking and its relevance. Thereafter, the research purpose and question is presented.

Chapter 2: Method – In the second chapter the method is presented. The basis of this chapter is to describe the research philosophy and research approach. Thereafter, the methodological approach and choice of theory is presented.

Chapter 3: Theory – In the third chapter the theoretical framework is presented. The purpose of the theories is to provide an understanding of how service quality affects customer satisfaction in online-banking.
Chapter 4: *Empirical method* – In the fourth chapter the empirical method is presented. Starting with our research process, sample selection and the operationalization. Lastly, the data analysis and the validity and reliability are presented.

Chapter 5: *Analysis* – In the fifth chapter an analysis of the collected data is presented. Thereafter, the thesis hypotheses are tested and compared with theory.

Chapter 6: *Conclusion* – In the sixth chapter the conclusion is presented. At first the results are discussed thereafter the research question is answered. Lastly, further implications of the study are presented.
2. METHOD
In this chapter the scientific method is presented. Initially, a short introduction of our research philosophy, research approach thereafter the choice of theory is presented.

2.1 RESEARCH PHILOSOPHY
The study is based on the positivistic research philosophy. When conducting a positivistic research philosophy, it is important not to include the researchers’ personal values in order to get a neutral result. The social reality is considered and handled similarly as the physical reality – something independent which “exists out there” with scientific characteristics. In a positivistic research philosophy, existing theories are used to create the hypotheses. Hence, using a positivistic method, as existing theories related to online-banking, service quality and customer satisfaction are used throughout this thesis (Descombe, 2014).

2.2 RESEARCH APPROACH
This thesis is adopting a deductive research approach as it is suitable for positivistic research philosophy. A deductive research approach identifies the relation between different variables and most commonly used in quantitative studies (Bryman & Bell, 2011). Since the purpose of this study is to explain how service quality within online-banking affects customer satisfaction, quantitative data was considered appropriate for this study. The quantitative method is based on data collection which in turn tests the hypotheses. The hypotheses are processed statistically and further analysed to draw conclusions (Saunders, Lewis, & Thornhill, 2009).

The hypotheses are based on theory and tested via internet-based surveys. The surveys were developed to research how consumer satisfaction is perceived in online-banking, thereafter an empirical reflection was performed.

2.3 METHODOLOGICAL APPROACH
We have chosen a quantitative approach in order to get a general overview of the result. In this thesis surveys is preferred as it quantifies the responses into numerical data to completely measure customer satisfaction. The standardisation of quantitative survey questions set a general view on the desired outcome as the respondents are assigned with the same questions (Descombe, 2014).
2.4 CHOICE OF THEORY

The purpose of this thesis is to explain how service quality within online-banking affects customer satisfaction. Therefore, relevant theories have been used to answer the research question. The theories used in this thesis is from reviewed scientific articles and other relevant literature within the research area. The reviewed articles are mainly read via Kristianstad University database called Summon.

The theories in this thesis are mostly measurement models such as, e-SERVQUAL, Self-service technologies (SSTs) and the Technology Acceptance Model (TAM). Another important theory explained in the theoretical framework is online-banking relationships, describing the relationship between customers’ and their bank.

The references in this thesis are based from foundations developed by A. Parasuraman. The theories he has developed are still being used in present studies and applicable in online-contexts (Appendix 3). Most of A. Parasuraman studies are published in-between 1985-2015, for some this can be considered a disadvantage as the references are outdated. However, A. Parasuraman’s research is constantly being used in scientific articles that has been published recently.
3. THEORETICAL FRAMEWORK

In this chapter the theoretical framework is presented. Initially, introducing concepts of Online-banking relationships, Customer satisfaction and Service quality. Followed by, the SERVQUAL model and the developed e-SERVQUAL, (SSTs) Self-Service Technologies, (TAM) Technology acceptance model. Lastly, the conceptual model based on the mentioned models is presented.

3.1 ONLINE-BANKING RELATIONSHIPS

Online-banking relationships refers to the importance of continuous interactions between the bank and the customer, to develop a beneficial long-term relationship for both parts (Mukherjee & Nath, 2003). In the context of banking the development of online-banking relationships was established to specifically create interest for long-term relationships (Ritter, 1993). Online-banking have caused banks to rethink their strategy in online-banking relationships (Mukherjee & Nath, 2003). Online-banking relationships are becoming valuable for both parts as it is delivered electronically without effort (Jones, Wilikens, Morris, & Masera, 2000).

3.2 CUSTOMER SATISFACTION

Customer satisfaction is becoming something of a Holy Grail amongst many organizations (Godson, 2009). Bitner, Booms, & Stanfield (1990) states that numerous quantitative studies have shown that service quality is a predictor of customer satisfaction. Kotler (2000) defines customer satisfaction as “Customer satisfaction is a collective outcome of perception evaluation and psychological reactions to the consumption experience with a product/service”. Customers’ positive attitude towards a service creates the need to re-use and negative attitudes are creating the opposite and increasing the risk for dissatisfaction (William, 2002). William (2002) states that a high level of satisfaction will lead to recurrent customers’ as the actual service outcome is higher than the expectation. Oliver (1980) states that Satisfaction is evaluated attitude which is initially was formed by the customer comparing purchase expectation of what they would receive in comparison of what they actually perceived.
3.3 SERVICE QUALITY

In recent years, service quality has been a subject of considerable importance by researchers, the reason lays in the belief that it contributes to firms’ performance. Where performance increases the chances for competitive advantages such as, customer loyalty, customer satisfaction, customer retention and a bigger market share (Cronin & Taylor, 1992). Parasuraman (1996) defines service quality as “Service quality is determined by the differences between customer’s expectations of services provider’s performance and their evaluation of the services they received”.

3.4 SERVQUAL

The SERVQUAL model is relevant as the model can be applied in reality as an observation of customers’ attitudes. The SERVQUAL model is used to assess the overall perception and expectation of a service. More precisely, the SERVQUAL model is developed by Parasuraman et al., (1985) measuring the distinction between customers’ expectation of the service outcome and the customers’ perception of the actual outcome. If the service quality is considered favourable by customers, the service has met the customers’ expectations of the service outcome (Parasuraman et al., 1985). The SERVQUAL model consists of five service quality factors such as: Tangibles, Reliability, Responsiveness, Empathy Caring and Assurance. These factors focus on customer aspects in service quality (responsiveness, assurance, reliability, and empathy) and the tangibles of the service. Buttle (1996) mentions that the SERVQUAL model has been in diverse industries such as retailing, local government, education and banking. The model was mainly developed to measure service quality in a physical context. In an online-banking context different service quality factors are more relevant to study (Zeithaml, Parasuraman, & Malhotra, 2002).

3.4.1 ONLINE SERVICE QUALITY FACTORS: e-SERVQUAL

The initial SERVQUAL model Parasuraman, Berry & Zeithaml (1991) cannot be fully applied when researching online services, however, by using resembling factors perceptions of service qualities can be made. To entirely capture the structure of online service quality additional factors may be added (Zeithaml, Parasuraman, & Malhotra, 2002). With this said, Zeithaml, Malhotra & Parasuraman (2000) created an e-SERVQUAL model to be able to measure online service quality. The e-SERVQUAL model consists of four factors:
• Reliability refers to the technical aspect on the website, functionality and availability are the main features.
• Efficiency is explained as the capability for a customer to visit the webpage, locate their desired information without great effort.
• Privacy is associated with the security when using online services, such as ensuring that data and credit card information will not be shared.
• Fulfilment refers to the certainty of promised services, such as delivering in time and having the service available.

The e-SERVQUAL model measures the quality of the service before, during and after the service is delivered. Furthermore, the e-SERVQUAL model is considered to be a predictor for the overall customer satisfaction in online services. The model also identifies the service quality gap between customer expectations and customer satisfaction and stretches the importance of the factors included in the model (Zeithaml, Parasuraman, & Malhotra, 2002).

3.5 SELF-SERVICE TECHNOLOGY (SST)
Self-service technology is important when researching the banking industry, as customer acceptance is crucial when new technology is developed (Blut, Wang, & Schoefer, 2016). Self-service technology (SSTs) enables the users to conduct services without physical interaction in various technical interfaces (Meuter et al., 2000). SSTs are constantly developing new ways for customers to interact with their banks. Previous studies have almost exclusively focused on the physical interaction, therefore, personal interaction via self-service technologies has to be further researched (Meuter, Bitner, Ostrom, & Brown, 2005). As mentioned before, when implementing SSTs to customers the ambition is to provide banking services without physical interaction, such as online-banking and ATMs (Automated teller machines). Research emphasizes how technological interactions builds long-term relationships. Parasuraman et al. (1996) states that technology-based innovations are a key criterion for long-term success. SSTs have changed the origin of customer service. Many researchers agree upon the fact that little is studied in technological services, how these services affect personal interaction and customer satisfaction (Meuter, Bitner, Ostrom, & Brown, 2005).
3.6 TECHNOLOGY ACCEPTANCE MODEL (TAM)

The older age segments using SSTs are more careful than younger segments which according to Søilen, Nerme, Stenström & Darefelt (2013) is due to new and unfamiliar online services. The aspect of accepting technology is something banks have to adopt to and how fast the different segments adopt to the technology. Previous research states that the information spread needs to be provided differently to each market segment, as the information has to be customized to assure efficiency (Søilen, Nerme, Stenström, & Darefelt, 2013). Other researchers such as Porter & Donthu (2006) implication of technology acceptance as waste of time as banks need to adopt to educate older segments, even if the older segments understand the importance of the internet, the drawback is that they find it hard to use.

Davis (1989) describes the two most important factors concerning how well a user accepts information technology. Firstly, the perceived usefulness (PU), secondly, the perceived ease of use (PEOU). Davis (1989) defines perceived usefulness as “the degree to which a person believes that using a particular system would enhance his or her job performance”. However, the determination is simply not enough to estimate if the user will accept technology, even if it helps the user to perform better. The definition of an implication similar to this is “the degree to which a person believes that using a particular system would be free of effort” (Davis, 1989). Most importantly, figuring out the balance between the two factors to avoid the difficulty of usage outweighs the benefits of usage. This indicates that the usefulness is influenced by the ease of use.

The perceived usefulness of a service is important as it depends on how open the customer is to new innovations. Liao & Cheung (2002) research focuses on attitudes towards online-banking and developed a couple of proposals to advise them to analyse distinctive attitudes towards the perceived usefulness. One of the most interesting proposals by Liao & Cheung (2002) is the expected transaction quickness as a service quality attribute in relation to the perceived usefulness in online-banking. The indication of quick services is something customers perceive as crucial as it increases the usefulness, vice versa, in regard to slower service deliveries the perceived usefulness of the service will automatically be lower (Liao & Cheung, 2002).
3.7 CONCEPTUAL MODEL

The conceptual model Figure 1 is based around the e-SERVQUAL developed by Parasuraman; et al, (1988). The presented factors in the conceptual model are: Reliability refers to the technical aspect on the websites interface, functionality and availability are the main features. Efficiency is explained as the capability for a customer to visit the webpage, locate their desired information without great effort. Privacy is associated with the security when using online-banking, such as ensuring data and credit card information will not be shared. Fulfilment refers to the certainty of promised services, such as delivering in time and having the service in order (Parasuraman; et al, 1988). The research hypotheses are based on the conceptual model which in turn developed from theory.

Personal interaction and Technology are considered as relevant factors contributing to customer satisfaction according to our research, these factors are not included in the e-SERVQUAL model. Personal interaction is a contributing factor to customer satisfaction, as customers desire communication with their bank via SSTs. Customers are using SSTs as they desire to have control over their personal banking information serving themselves (Parasuraman, A; et al, 1988). Technology is advancing to reduce costs for banks, creating online long-term relationships with customers and banks. Technology is a part of the TAM model as it measures how customers are willing to accept new technology with two factors. The first factor, the perceived usefulness, secondly, the perceived ease of use (Davis, 1989).

Altogether, the service quality factors mentioned are measuring customers’ perception of the service quality, which in turn measures the customer satisfaction depending on which one of the six factors are perceived as better or worse than the other quality factors.
In regard to the e-SERVQUAL model is used to assess the expectation and perception of the online-banking service. The e-SERVQUAL model is presented by Parasuraman et al., (2000) as the distinction between customers’ expectation of the service outcome and the customers’ perception of the actual outcome. If the service quality is considered favourable by customers, the service has met the customers’ expectations of the service outcome.

### 3.8 RESEARCH HYPOTHESES

Online-banking has been widely researched, which makes it possible to build hypotheses based on existing theories. The hypotheses are based on the conceptual model which combines the theory to strengthen the findings in the analysis.

The tested hypotheses are:

**H1.** Personal interaction is not of great significance for customer satisfaction in online-banking.

**H2.** Reliability is perceived to have a positive effect on customer satisfaction in online-banking.

**H3.** Efficiency is perceived to have a positive effect on customer satisfaction in online-banking.
H4. Fulfilment is perceived to have a positive effect on customer satisfaction in online-banking.

H5. Privacy is perceived to have a positive effect on customer satisfaction in online-banking.

H6. Online-banking technology is favourable by most of the respondents.

H7. Customers in online-banking consider expectations of service outcome as important.
4. EMPIRICAL METHOD

This chapter is presenting the empirical method. Initially, the research process is presented followed by the sample selection and collection of data. Lastly, the operationalization together with the validity and reliability.

4.1 RESEARCH PROCESS

Initially, the research process started by reviewing scientific articles within the research area. Kristianstad University’s search-engine was used to find appropriate articles where keywords such as customer satisfaction, service quality and online-banking were used. The articles containing the mentioned keywords had similar theories and models on how to measure the different factors. As online-banking is a part of the technological sphere, “Self-service technologies” and “Technology Acceptance Model” were seen as contributing to the research purpose, both of these models are evaluating if customers are willing to adopt new innovations and therefore implemented in our web based survey. When choosing a web based survey as an approach, many pros was considered. For example, the simplicity of collecting the data, a cheaper option and a faster way of compile the answers (Descombe, 2014). Lastly, the data collection was analysed and evaluated in the conclusion.

4.2 SAMPLE SELECTION

Initially, the survey was aimed towards respondents with a minimum age of 30. The reason for this, was to examine respondents who had used both the “Traditional- and Online-bank”, to further research if there was relation between traditional- and online-banking services. However, the age criteria changed overtime with a minimum age of 21, as researching the relation between traditional- and online was not relevant in regard to the research purpose. Nevertheless, the respondents need to reveal their age to assure relevance and valid answers. When reaching out to our respondents a convenient sample were used, as this was considered more time efficient than a random selection. However, researchers find it difficult to put a similarity between using a convenient sample selection and good research, as they consider it contradicting the hard requirements that is a must regarding scientific research. Even though, we consider a convenient sample to be the right method because it provides easy access, quick sample selection, cheaper and easy to perform (Descombe, 2014). A total of 110 respondents answered the survey with a minimum age of 21 and anonymity was guaranteed to produce a reliable result.
4.3 COLLECTION OF DATA

A quantitative method was chosen in order to collect a large amount of data which enables us to generalize the result. To be able to increase the chance of more respondents participating, a web-based survey was conducted in order to simplify the distribution and compilation of the answers. The main reason for choosing surveys was the limitation in time and resources, as surveys are not as time consuming and costly as other data collection methods. Secondly, a lower degree of personal contact between the researcher and the respondent increases the chances of impartial answers (Descombe, 2014).

The collection of data was conducted from May 3rd to May 6th (2018). The collected data were stored in google forms during this time period and later transferred to SPSS for examination. In the survey, appropriate statements based on theory were presented in order to receive as much information about service quality and customer satisfaction as possible. Furthermore, the information helped us answer the research question by presenting which of the service quality factors are most important to the respondents.

Gender have been excluded in this thesis as recent studies have not received valuable information in relation to service quality and customer satisfaction within online banking. For example, Saha & Zhao (2005) included gender as a control variable, however, their conclusion and result did not present any concrete findings regarding gender, which is the reason for excluding it in our research.

Prior to the data collection the survey was reviewed by our supervisor to make sure the statements were based around the chosen theory, the quality of the statements and a correct translation. The survey was developed by ourselves using “Google Forms” as our delivery channel.

4.4 OPERATIONALIZATION

Operationalization is defined as “Each step that needs to be taken to answer the research question” (Descombe, 2014). Descombe (2014) explains operationalization as something theoretical which has to be transformed into something measurable and concrete. The distinction between the Independent variables and Dependent Variables is important to be able to measure the outcome. Another important aspect is to formulate the survey statements accurately and suitable in regard to research purpose.
4.4.1 DEPENDENT VARIABLES (CUSTOMER SATISFACTION)

The dependent variable is changing as an implication of changes in the independent variable. In our thesis customer satisfaction is the dependent variable, because it depends on service quality. According to our conceptual model Figure 1 service quality is perceived as something good, which increases the chance of achieving customer satisfaction. To measure customer satisfaction, three questions were developed and later presented to the respondents. The respondents had to either agreed or disagreed on the different statements on a Likert scale from 1 to 5. To measure and later compare the dependent and the independent variables, a sum variable was developed.

The following statements measuring customer satisfaction:

- I would recommend my online-bank to my friends.
- I can consider switching bank and their online services.
- I am overall satisfied with my online-bank.

The statements were formulated from the conceptual model Figure 1. The statements are valid and reliable as they are inspired from existing research (Halowell, 1996). The first statement is closely linked to customer satisfaction as the respondent would recommend their online-bank to friends. The second statement is measuring if the customers are willing to change bank and their services, to see if they are satisfied with their current bank. The third statement explains if the respondent is overall satisfied with their online-bank.

4.4.2 INDEPENDENT VARIABLES (SERVICE QUALITY)

The independent variable is explained as having an effect on the dependent variable. The sample size and structure do not have any effect on the other independent variables (Descombe, 2014). The independent variable is service quality as it has an effect on customer satisfaction. To fully measure customer satisfaction in online-banking, we added to service quality factors into the conceptual model Figure 1. The added service quality factors are Technology and Personal interaction. The factors in the conceptual model Figure 1 consists of: Reliability, Efficiency, Privacy, Fulfilment, Technology and Personal interaction. Each factor consists of 3-4 appropriate statements measuring service quality. The respondents had to answer on a Likert scale numbered from 1 to 5. Furthermore, each statement was divided in to six independent sum variables, these are;
**Personal interaction:**

- Personal interaction is important when conducting banking errands.
- I experience the possibility that self-service in the online-bank is something positive.
- I prefer to do my transactions via the online-bank instead of visiting a traditional bank office.
- When using the online-bank, customer support is easily accessible.

**Efficiency:**

- Online-banking services contributes to easily accessible information (account balance etc.)
- The banks online platforms are easily navigated (mobile bank, webpage).
- It is easy to conduct banking online.

**Reliability:**

- When I experience a technical problem, the online-bank has features that can solve it.
- The online-bank always suggests the right services according to my specific needs.
- The online-bank is always available.

**Privacy:**

- I perceive that the bank handles my information confidentially.
- I perceive that the use of online-services is reliable.
- I feel secure making payments and purchases online while using online-banking services (Bank-ID, Swish).

**Fulfilment:**

- When ordering online-banking services, they are always delivered in agreed time.
- I perceive that the bank answers my questions in a good way.
- The services used on the online-bank platform work as promised (payments, account balance, investments etc.)

**Technology:**

- I perceive that online-banking services affect the service quality in a positive way (ATMs, Payments through mobile bank, Swish etc.).
• I perceive it as easy to understand new technology within online-banking.
• The quality of the banks online services is generally high.

4.4.3 CONTROL VARIABLES
Denscombe (2014) states that the researcher has to assure that the independent variables affects the dependent variable. Pallant (2016) states that the control variables are used to reduce the risk of wrong conclusions. The control variables are proving to support the research. The control variables in this thesis are as following:

• Age?
• How many times have you visited a bank office in 2018?
• How do you pay invoices?
• How often they use online-banking?

4.4.4 CUSTOMER EXPECTATIONS
To entirely measure customer satisfaction, the distinction between customers’ expectation of the service outcome and the customers’ perception of the actual outcome is taken into consideration. If the service quality is considered favourable by customers, the service has met the customers’ expectations of the service outcome. To be able to measure customer expectation six statements were developed, one for each service quality factor. The respondents are answering on a Likert scale, numbered 1 to 5. However, at this part of the survey the respondents are answering if they perceive that the statements are important.

Survey statements linked to customer expectations are as followed:

*Personal interaction:*

• Having the possibility of personal interaction and/or support.

*Efficiency:*

• That it is easy to find information that I am looking for.

*Reliability:*

• That the technology on the website and in the mobile bank works.

*Privacy:*

• That the security is high.

*Fulfilment:*

• That services work as promised.

*Technology:*

• Being able to conduct banking by yourself on the webpage and mobile bank.
4.5 DATA ANALYSIS

The analysis of the collected data was completed using SPSS. To test the reliability of the variables a Cronbach Alpha test was done. To examine the relationship between the sum variables, dependent variables and customer expectation variable a Pearson-correlation was conducted. Lastly, multiple linear regressions examined if the variables were of significance.

4.6 VALIDITY & RELIABILITY (CRONBACH ALPHA)

To ensure that this thesis conclusion is accurate, validity and reliability have been taken into consideration. “Without validity, the research would be considered as irrelevant for the field of study” (Bryman & Bell, 2011). Internal validity is the reassurance of the relationships between the variables. External validity introduces the general concept of how well the results are presented (Bryman & Bell, 2011). To ensure that the survey is well established to obtain high validity, the survey questions has to collect similar answers each time disregarding the different distribution channels. Which is why, consistency is crucial to make sure the research is reliable, for instance, the respondents answers should not change even if the received the survey multiple times. To be able to achieve good validity the survey statements was developed from existing research. Moreover, to minimize any misunderstandings the statements were presented in a comprehensible way.

To determine if the results are reliable and useful in the analysis we tested the internal reliability of the six service quality factors from the conceptual model Figure 1. Each service quality factor contains of three underlying factors contributing to customer satisfaction. Cronbach Alpha is based around the reliability of a test in comparison to each other factor.

The reliability is achieved in this thesis as it originates from established measurements from previous studies together with neutral and identical statements in a web-based survey (Descombe, 2014).
4.7 GENERALIZABILITY
In a quantitative research the findings aim to potentially generalize beyond the studied population, as the results can apply to other individuals who have not responded in the survey (Bryman & Bell, 2011). Which is why, the collected sample in this research is considered as a representative sample for the population as the results are not unique for a particular group of people. We consider the 110 respondents to be a large enough sample which in turn is a prerequisite when generalizing the result through a positivistic approach.

4.8 METHODOLOGICAL LIMITATIONS
Limitations that could affect the result is the respondents gender and how we distributed the surveys. Gender is excluded from the control variable as we considered it as irrelevant in regards to the research purpose. However, by excluding gender as a control variable, online-banking and its effect between males and females can not be compared.
5. ANALYSIS

In this chapter the analysis from the collected surveys is presented. Initially, the descriptive statistics including the independent- and dependent- variables is presented. Followed by the Cronbach Alpha test, thereafter, the results are tested in a Pearson correlation matrix to examine the dependence between different variables. Lastly, a Multiple Linear Regression presenting the relationship between the variables.

5.1 DESCRIPTIVE STATISTICS & SUM VARIABLES

The descriptive statistics provides an overview of the collected data, with a total of 110 respondents.

*Table 1 Descriptive Statistics*

<table>
<thead>
<tr>
<th>Factors</th>
<th>N</th>
<th>Min.</th>
<th>Max.</th>
<th>Mean</th>
<th>Std. D</th>
</tr>
</thead>
<tbody>
<tr>
<td>Customer Satisfaction</td>
<td>110</td>
<td>1,00</td>
<td>5,00</td>
<td>3,85</td>
<td>0,651</td>
</tr>
<tr>
<td>Personal Interaction</td>
<td>110</td>
<td>1,67</td>
<td>5,00</td>
<td>4,32</td>
<td>0,626</td>
</tr>
<tr>
<td>Efficiency</td>
<td>110</td>
<td>2,33</td>
<td>5,00</td>
<td>4,32</td>
<td>0,653</td>
</tr>
<tr>
<td>Reliability</td>
<td>110</td>
<td>1,00</td>
<td>5,00</td>
<td>3,72</td>
<td>0,752</td>
</tr>
<tr>
<td>Privacy</td>
<td>110</td>
<td>2,00</td>
<td>5,00</td>
<td>4,52</td>
<td>0,631</td>
</tr>
<tr>
<td>Fulfilment</td>
<td>110</td>
<td>1,3</td>
<td>5,00</td>
<td>4,16</td>
<td>0,690</td>
</tr>
<tr>
<td>Technology</td>
<td>110</td>
<td>2,33</td>
<td>5,00</td>
<td>4,48</td>
<td>0,622</td>
</tr>
<tr>
<td>Age</td>
<td>110</td>
<td>21</td>
<td>68</td>
<td>39,47</td>
<td>13,18</td>
</tr>
</tbody>
</table>

In Table 1 the dependent variable (Customer satisfaction), independent variables and one control variable (Age) is presented. The independent variables are combined into sum variables from the statements presented in the survey. In Table 1, 78 % of the respondents are within the older age range, hence the high mean at 39 years of age. The survey was initially conducted to reach out to banking customers above the age of 30, however the criteria changed overtime to a minimum age of 21. The mean in Table 1 is fairly high with a minimum of 3.72 and the highest of 5. The remaining control variables not seen in Table 1 are the respondents’ habits regarding visiting bank offices and using online-banking. 89.1% of the respondents are using online-banking regularly (Appendix 1.3) and 64% of the respondents have not visited a bank office in 2018 (Appendix 1.4).
5.2 CRONBACH ALPHA

Cronbach Alpha is a reliability test which estimates to measure the internal reliability with numerical coefficients to see if the variables can be used in the analysis. The interval in Cronbach Alpha is ranged from 0 to 1, where 0 is indicating no internal reliability and 1 perfect internal reliability. The acceptable value in Cronbach Alpha is discussed among authors, accepted value is 0.7 however, 0.6-0.7 is within the grey-zone of reliability and is still considered acceptable (Pallant, 2016).

*Table 2 Cronbach Alpha*

<table>
<thead>
<tr>
<th>Sum variables</th>
<th>Number of Questions</th>
<th>C.A for Factors</th>
<th>Questions used</th>
</tr>
</thead>
<tbody>
<tr>
<td>PERSONAL INTERACTION</td>
<td>3</td>
<td>0.613</td>
<td>Question 2, Question 3, Question 7</td>
</tr>
<tr>
<td>EFFICIENCY</td>
<td>3</td>
<td>0.689</td>
<td>Question 4, Question 5, Question 6</td>
</tr>
<tr>
<td>RELIABILITY</td>
<td>3</td>
<td>0.693</td>
<td>Question 8, Question 9, Question 10</td>
</tr>
<tr>
<td>PRIVACY</td>
<td>3</td>
<td>0.748</td>
<td>Question 13, Question 14, Question 15</td>
</tr>
<tr>
<td>FULFILMENT</td>
<td>3</td>
<td>0.636</td>
<td>Question 11, Question 12, Question 16</td>
</tr>
<tr>
<td>TECHNOLOGY</td>
<td>3</td>
<td>0.630</td>
<td>Question 17, Question 18, Question 22</td>
</tr>
</tbody>
</table>

To obtain an acceptable Cronbach Alpha the value has to be above 0.6 according to Bryman & Bell (2011), which is why question 1 is disregarded from the personal interaction sum variable. When question 1 is taken into account in the sum variable personal interaction the Cronbach Alpha resulted in a value of 0.123 which is not considered reliable. The other remaining sum variables are considered to be acceptable with a Cronbach Alpha from 0.613 to 0.748. Our dependent variable had a similar issue regarding reliability as personal interaction as seen in (Appendix 4), however, keeping the three questions separately instead of creating a sum variable solved the issue. As Table 2 presents, the variables are considered being reliable and therefore acceptable.


5.3 CORRELATION TEST BETWEEN SERVICE QUALITY AND CUSTOMER SATISFACTION

To describe the correlation between two variables a correlation analysis is used to see which direction the linear relationship is heading. Pearson correlation coefficients are valued from -1 to +1, which indicates whether there is a negative or positive correlation. Hence, a correlation of zero indicates no relationship between the variables (Pallant, 2016).

Table 3 Pearson Correlation Matrix

<table>
<thead>
<tr>
<th></th>
<th>Personal Interaction</th>
<th>Efficiency</th>
<th>Reliability</th>
<th>Privacy</th>
<th>Fulfilment</th>
<th>Technology</th>
<th>Q.19</th>
<th>Q.20</th>
<th>Q.21</th>
</tr>
</thead>
<tbody>
<tr>
<td>Personal Interaction</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Efficiency</td>
<td>0.600**</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Reliability</td>
<td>0.439**</td>
<td>0.436**</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Privacy</td>
<td>0.453**</td>
<td>0.491**</td>
<td>0.332**</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Fulfilment</td>
<td>0.605**</td>
<td>0.528**</td>
<td>0.435**</td>
<td>0.579**</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Technology</td>
<td>0.556**</td>
<td>0.603**</td>
<td>0.525**</td>
<td>0.671**</td>
<td>0.630**</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Q.19</td>
<td>0.367**</td>
<td>0.359**</td>
<td>0.211*</td>
<td>0.493**</td>
<td>0.483**</td>
<td>0.474**</td>
<td>1</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Q.20</td>
<td>0.062</td>
<td>0.182</td>
<td>-0.059</td>
<td>-0.094</td>
<td>0.079</td>
<td>0.045</td>
<td>-0.108</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>Q.21</td>
<td>0.478**</td>
<td>0.471**</td>
<td>0.377**</td>
<td>0.592**</td>
<td>0.624**</td>
<td>0.713**</td>
<td>0.423**</td>
<td>0.041</td>
<td>1</td>
</tr>
</tbody>
</table>

** Correlation is significant at the 0.01 level (2-tailed) * Correlation is significant at the 0.05 level (2-tailed)

Q.19: I would recommend my online-bank to my friends (Dependent Variable, Customer Satisfaction).
Q.20: I can consider switching bank and their online-services (Dependent Variable, Customer Satisfaction).
Q.21: I am overall satisfied with my online-bank (Dependent Variable, Customer Satisfaction).

In the Cronbach Alpha test, the questions regarding Customer Satisfaction are not considered reliable, which is why question 19, 20 and 21 in Table 3 are measured separately instead of one sum variable. In Table 3 the correlation between the independent variables and dependent variables are presented.

The independent six factors (Personal Interaction, Efficiency, Reliability, Privacy, Fulfilment and Technology) presents an overall positive correlation with customer satisfaction. The respondents are overall satisfied with their online-bank, Q.21 shows a positive correlation with the six independent factors. The high correlation between Q.21 and the independent variables in Table 3 indicates a positive relationship between customer satisfaction and service quality. Q.19 shows a similar result as Q.21, however, slightly lower correlation. In Table 3 the correlation between Q.19 and Q.21 is 0.423, which indicates a positive relation. To summarize, the statements from Q.19 and Q.21 measuring
customer satisfaction is fairly identical. However, customers considering switching their current bank (Q.20), with a correlation close to zero, shows no relationship with the other variables.

5.4 MULTIPLE LINEAR REGRESSION

Multiple regression is used to examine the relationship between one dependent variable and a number of independent variables. It is based on correlation, but it also examines a refined relationship between the set of variables (Pallant, 2016). To be able to present the significance between customer satisfaction and service quality, a Multiple Linear Regression is performed. However, prior to the selection of a multiple linear regression, multicollinearity has to be determined. Multicollinearity is a phenomenon which arises in the multiple linear regression and is considered as a problem because it could lead us into reasoning that the independent variables are not significant when they actually are. To determine if we have a problem with multicollinearity tolerance and variance of inflation factor is taken into consideration. The rule of thumb is, if the VIF for any independent variable is around or exceeds at 5, then a problem can occur (Pallant, 2016). If we look at Table 4, 5 and 6, multicollinearity is not an issue because our VIF is below 5 in every tables. As Table 3 presents, the dependent variable is divided into separate questions, in order to get at reliable result.

Table 4 Multiple Linear Regression (Q.19)

<table>
<thead>
<tr>
<th>Customer Satisfaction</th>
<th>Standardized Beta</th>
<th>Sig. value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Constant</td>
<td>-</td>
<td>0.399</td>
</tr>
<tr>
<td>Personal Interaction</td>
<td>0.058</td>
<td>0.754</td>
</tr>
<tr>
<td>Efficiency</td>
<td>-0.038</td>
<td>0.831</td>
</tr>
<tr>
<td>Reliability</td>
<td>-0.065</td>
<td>0.633</td>
</tr>
<tr>
<td>Privacy</td>
<td>0.368</td>
<td>0.047</td>
</tr>
<tr>
<td>Fulfillment</td>
<td>0.409</td>
<td>0.022</td>
</tr>
<tr>
<td>Technology</td>
<td>0.152</td>
<td>0.506</td>
</tr>
<tr>
<td>Age</td>
<td>-0.014</td>
<td>0.057</td>
</tr>
</tbody>
</table>

Adjusted $R^2$: 0.299  
Highest VIF: 2.976  
Sig.: .000  
P < .05
In Table 4, Q.19 “I would recommend my online-bank to my friends”, is used as the dependent variable linked to customer satisfaction. The Table presents that Privacy (0.047) and Fulfilment (0.022) are the only factors of significance at a level of 0.05. Hence, highly related in regard to customer satisfaction. Age (0.057) is fairly significant but in this case excluded. The Adjusted $R^2$ is calculated to present how much the model explains the variations in the dependent variable, which in Table 4 is 0.299 which means that the service quality is somehow relevant in regards to customer satisfaction.

**Table 5 Multiple Linear Regression (Q.20)**

<table>
<thead>
<tr>
<th>Customer Satisfaction</th>
<th>Standardized Beta</th>
<th>Sig. value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Constant</td>
<td>-</td>
<td>0.030</td>
</tr>
<tr>
<td>Personal Interaction</td>
<td>-0.079</td>
<td>0.766</td>
</tr>
<tr>
<td>Efficiency</td>
<td>0.569</td>
<td>0.029</td>
</tr>
<tr>
<td>Reliability</td>
<td>-0.296</td>
<td>0.134</td>
</tr>
<tr>
<td>Privacy</td>
<td>-0.630</td>
<td>0.019</td>
</tr>
<tr>
<td>Fulfilment</td>
<td>0.265</td>
<td>0.297</td>
</tr>
<tr>
<td>Technology</td>
<td>0.192</td>
<td>0.558</td>
</tr>
<tr>
<td>Age</td>
<td>-0.002</td>
<td>0.868</td>
</tr>
</tbody>
</table>

Adjusted $R^2$: 0.048  
Highest VIF: 2.976  
Sig: .000  
P < .05

In Table 5, Q.20 “I can consider switching bank and their online-services”, is used as the dependent variable in relation to customer satisfaction. This table presents that Efficiency (0.029) and Privacy (0.019) are the only factors which are significant at a level of 0.05. Hence, highly related to customer satisfaction. The Adjusted $R^2$ is calculated to present how much the independent variable explains the variations in the dependent variable between a value of 0 and 1, which in Table 5 is 0.048 which means that 4.8% of the variation in the independent variable is explained by the dependent variable (Pallant, 2016).
In Table 6, Q.21 “I am overall satisfied with my online-bank”, is used as the dependent variable connected to customer satisfaction. This last table presents that Fulfilment (0.022), Technology (0.00) and Age (0.011) are the only factors that are significant at a level of 0.05. Hence, highly related to customer satisfaction. This Table explains the overall satisfaction with the online-bank and what factor is significant. For the first time, Age and Technology are significant factors in relation to customer satisfaction. The Adjusted R² is calculated to present how much the independent variable explains the variations in the dependent variable between a value of 0 and 1, which in Table 6 is 0.568 which means that 56.8% of the variation in the independent variable is explained by the dependent variable (Pallant, 2016).
### 5.5 FREQUENCY TABLE (CUSTOMER EXPECTATIONS)

In Table 7 the importance of the expected outcome is presented. Q.27-Q.32 are the statements measuring the respondents’ expectations, while the percentage summarises the importance of each statement. For the statement to be as considered important the respondent has to answer with a minimum of 4 on a Likert scale from 1-5. As Table 7 presents, the expected service outcome is important by almost 100% of the respondents. The collection of data used in Table 7 is presented in (Appendix 1), as for instance out of the 110 respondents, 66 of the respondents perceived Q.27 “The possibility of personal interaction and/or support” as important, which in other terms is 60% of the studied sample as presented in Table 7.

<table>
<thead>
<tr>
<th>Q.27 - Personal Interaction</th>
<th>Q.28 - Efficiency</th>
<th>Q.29 - Reliability</th>
<th>Q.30 - Privacy</th>
<th>Q.31 - Fulfilment</th>
<th>Q.32 - Technology</th>
</tr>
</thead>
<tbody>
<tr>
<td>60.0%</td>
<td>92.7%</td>
<td>97.3%</td>
<td>99.1%</td>
<td>99.1%</td>
<td>96.4%</td>
</tr>
</tbody>
</table>

### 5.6 HYPOTHESES TEST

In order to test the hypotheses, a Pearson correlation test and a Multiple Linear regression test have been done. The correlation is examining a positive or the negative relationship. The regression analysis aims to present the effect of an independent variable on a dependent
variable. Comparing the tests, the contributing service quality variables can be determined, also which variable contributes the most to customer satisfaction. In chapter 5.6.1 a summary of the hypotheses is presented.

The tested hypotheses are:

Hypothesis 1

*H1. Personal interaction is not of great significance for customer satisfaction in online-banking.*

Initially, the personal interaction was tested if it was of great significance to customer satisfaction. The first hypothesis was accepted since personal interaction was found to not be of great significance to customer satisfaction in online-banking. However, presenting a relation to customer satisfaction.

Hypothesis 2

*H2. Efficiency is perceived to have a positive effect on customer satisfaction.*

Secondly, Efficiency and its effect on customer satisfaction is tested. A similar result as H1 is presented, the hypothesis was accepted since efficiency was found to contribute to customer satisfaction in online-banking. As we can see in Table 3 the correlation between customer satisfaction and Efficiency is positive. Efficiency has a strong positive correlation towards Q.19 and Q.21, while Q.20 have a slightly lower positive correlation. The Adjusted $R^2$ in Table 5 is slightly lower and indicating 4.8% of the independent variables explaining the variation of the dependent variable.

Hypothesis 3

*H3. Reliability is perceived to have a positive effect on customer satisfaction.*

Thirdly, Reliability and its effects on customer satisfaction is tested. The third hypothesis is accepted, however Q.20 did not have a positive correlation with Reliability, see Table 3. The correlation is not significantly high with Q.19 or Q.21 although positive.

Hypothesis 4

*H4. Privacy is perceived to have a positive effect on customer satisfaction.*
Fourthly, Privacy and its effects on customer satisfaction is tested. The fourth hypothesis is accepted, however as in hypothesis 3, Q.20 did not have a positive correlation with Privacy. Q.19 and Q.21 have a high correlation with Privacy, hence explaining the acceptance of the hypothesis.

Hypothesis 5

*H5. Fulfilment is perceived to have a positive effect on customer satisfaction.*

Fulfilment and its effects on customer satisfaction is tested. The fifth hypothesis was accepted since Fulfilment was found to contribute to customer satisfaction in online-banking. In Table 3 Q.19 and Q.21 is highly correlated with Fulfilment, however lower correlated with with Q.20.

Hypothesis 6

*H6. Online-banking technology is considered favourable for contributing to customer satisfaction.*

Technology and its effects on customer satisfaction is tested. The sixth hypothesis was accepted since Technology was found to contribute to customer satisfaction in online-banking. In Table 3 Q.21 and Q.19 has a high correlation with Technology while Q.20 has a slightly positive correlation. Technology is significant in relation with Q.21, hence, considered important when measuring overall customer satisfaction.

Hypothesis 7

*H7. Customers in online-banking consider expectations of service outcome as important.*

Lastly, customers’ expectations and its importance on service outcome is tested. This particular hypothesis has been presented with a frequency-table Table 7. This hypothesis is accepted as the most part of our respondents perceived their expectation of the actual service outcome as important.
### 5.6.1 SUMMARY OF THE HYPOTHESES

*Table 8 Summary of the Hypotheses*

<table>
<thead>
<tr>
<th>Hypotheses</th>
<th>Q.19</th>
<th>Q.20</th>
<th>Q.21</th>
</tr>
</thead>
<tbody>
<tr>
<td>HYPOTHESIS 1</td>
<td>Accepted</td>
<td>Accepted</td>
<td>Accepted</td>
</tr>
<tr>
<td>HYPOTHESIS 2</td>
<td>Accepted</td>
<td>Accepted</td>
<td>Accepted</td>
</tr>
<tr>
<td>HYPOTHESIS 3</td>
<td>Accepted</td>
<td>Rejected</td>
<td>Accepted</td>
</tr>
<tr>
<td>HYPOTHESIS 4</td>
<td>Accepted</td>
<td>Rejected</td>
<td>Accepted</td>
</tr>
<tr>
<td>HYPOTHESIS 5</td>
<td>Accepted</td>
<td>Accepted</td>
<td>Accepted</td>
</tr>
<tr>
<td>HYPOTHESIS 6</td>
<td>Accepted</td>
<td>Accepted</td>
<td>Accepted</td>
</tr>
<tr>
<td>HYPOTHESIS 7</td>
<td>Not test</td>
<td>Not Test</td>
<td>Not Test</td>
</tr>
</tbody>
</table>

In Table 8 a summary over the hypotheses are presented. An overall positive correlation can be seen in Table 3, hence, explaining the accepted hypotheses 2-6. H.1 is also accepted as customers perceive personal interaction as less significant for achieving customer satisfaction.

As presented in Table 8, H.7 is not tested with Q.19, Q.20 and Q.21 as the aim of H.7 is not to reflect upon the correlation between the variables. H.7 is accepted as presented in Table 7 where most of the respondents believe that customer expectations of the service outcome as important.
6. CONCLUSION

In this final chapter of this thesis conclusions will be presented. Initially, presenting the purpose and research question of the thesis. Thereafter, a discussion of the findings is taken from the analysis. Further, an overall conclusion is presented and lastly, the implications and suggestions further research is presented.

6.1 FINDINGS & DISCUSSION

The purpose of this thesis is to explain how service quality within online-banking affects customer satisfaction using service quality factors from our conceptual model Figure 1. The factors are Personal interaction, Efficiency, Fulfilment, Privacy, Reliability and Technology. The conceptual model is used in order to answer the research question:

*How does service quality factors within online-banking affect customer satisfaction?*

All of the service quality factors within online-banking is affecting customer satisfaction positively, whereas some service quality factors contribute more than other factors.

Numerous quantitative studies have shown that service quality is a predictor for customer satisfaction (Bitner et al. 1990). Our conclusion demonstrated a consistent result with existing studies as service quality is affecting customer satisfaction positively. However, the combination of service quality factors from the three models have not been tested before. In addition, as most factors are taken into the analysis the conclusion is more rewarding, as it covers most of the customer satisfaction aspects in online-banking contexts.

6.1.1 CUSTOMER EXPECTATION OF THE SERVICE OUTCOME

*Personal interaction:*

According to our findings, the respondents expects having the possibility of personal interaction as a form of customer service as important. A portion of the respondents had a different point of view, whereas some leaning more towards a neutral opinion regarding personal interaction. Furthermore, the majority of the respondents still emphasising the importance of having personal interaction as a possibility.

*Efficiency:*

The respondents expect finding information easily as important. They also expect that online-banking services are contributing to easily accessible information such as, checking their account balance and so on.
Reliability:
The research reveals that the respondents expect the technology on the website and mobile bank to work in order to be satisfied. Hence, explaining the importance concerning the functionality on the website.

Privacy:
From our research we clearly see that our respondents expect the security to be high in online-banking, as nearly all of the respondents considered it to be important.

Fulfilment:
The findings indicate that bank customers expects that the services work as promised, when customers order through online-banking services, banks always deliver within the agreed time frame. This is something all of the respondents is seeing as important in order to be satisfied.

Technology:
In our findings, the respondents expect having the ability to conduct banking by themselves as important in order to be satisfied. Which allows the customers, the possibility to control their banking needs and desires.

To conclude the findings mentioned above, the respondents tends to have high expectations with online-banking services. Fulfilment and Privacy are the most important out of the six service quality factors considering the respondents’ expectations. Which means that the respondents expect their services to work as promised and credit card information to be handled confidentially in order to be satisfied. Followed by, Reliability, Technology, Efficiency and Personal interaction. Personal Interaction is considered to be the least important service quality factor regarding customers’ expectation of service outcomes. As the respondents’ expectations are lower regarding the possibility of personal interaction or support within online-banking.

6.1.2 CUSTOMER PERCEPTION OF THE ACTUAL SERVICE OUTCOME

Personal interaction:
In today’s banking the ambition is to provide services without physical interaction. The findings prove that banking customers perceive personal interaction in form of self-service in online-banking as something positive, however, not of great significance. Our research
reveals that bank customers prefer to do their transactions via their online-bank instead of visiting a traditional bank office and customer service is easily accessible through self-service technologies.

**Efficiency:**
According to our research, the respondents perceive online-banking platforms (mobile bank, webpage) as easily navigated and most importantly they find it easy to conduct online-banking. Our findings also show that bank customers will avoid visiting a bank office when services are available online and easy to use.

**Reliability:**
Regarding the reliability statements presented in the survey the answers were widely spread out in the scale. Which revealed, that most of the respondents were neutral in regards to the service quality statements. Hence, not standing by the following statement about the online-bank suggesting the right services for their specific needs. Additionally, they are not convinced that the online-bank has features which can solve technical problems. However, the respondents are agreeing upon the fact that the online-bank is always available for customers to conduct their errands.

**Privacy:**
The findings imply that customers feel secure making payments and purchases online while using online-banking services. The customers perceive that the bank handles their information confidentially which contributes to satisfied customers.

**Fulfilment:**
The research prove that customers perceive the services to work as promised, and that the banks answer the customers’ questions in a satisfying way.

**Technology:**
The research indicate that the respondents are agreeing that online-banking affects service quality in a positive way. The respondents also perceive that new technology within online-banking is easy to understand and adapt to, which will consequently make them more satisfied.
To conclude the findings mentioned above, Technology is contributing to customer satisfaction the most out of the six service quality factors, thereafter, Fulfilment and Privacy. Even if Personal interaction, Efficiency and Reliability is perceived as less contributing factors to customer satisfaction they are still considered to have a positive effect.

6.2 IMPLICATIONS

The following chapter presents the study implications. Initially, the theoretical implications is presented followed by the practical implications.

6.2.1 THEORETICAL IMPLICATIONS

The theoretical implications of this thesis is to provide an understanding of how service quality factors affect customer satisfaction. A variety of service quality factors have shown a significant contribution to customer satisfaction, however, to entirely capture the structure of online service quality additional factors may be added (Zeithaml, Parasuraman, & Malhotra, 2002). The added service quality factors to the conceptual model were Personal Interaction and Technology. The implication of adding additional service quality factors in the conceptual model led to a rewarding conclusion covering more service quality factors within online-banking. Most importantly, stretching the importance of the chosen service quality factors in online-banking has been emphasised throughout this thesis.

6.2.2 PRACTICAL IMPLICATIONS

The practical implications of this thesis are to provide online-banks with a greater understanding which service quality factors cause’s customers to experience satisfaction. Most importantly, what kind of online-relationship banks should focus on to make their customers more satisfied. According to our result, the practical implications consists mainly of two factors Technology and Privacy. The first practical implication refers to the service quality factor Privacy as customers expect their personal information to be secure. Online-banking is constantly developing where the banks have to maintain customers’ personal information confidential in order to keep their customers satisfied. The second practical implication refers to the service quality factor Technology, as online-banking interfaces has to be kept user friendly to lower the risk for customers to be misdirected on the webpage or mobile application.
6.3 LIMITATIONS

In this thesis there are some limitations. The given timeframe has limited us to conduct a profound research in the selected subject. A quantitative method limited our research by creating a general instead of a profound understanding about service quality and its effects. The covered area and sample size of our research could have been increased in order to improve the results.

6.4 SUGGESTIONS FOR FURTHER RESEARCH

Our suggestions for further research is to include additional factors potentially having an effect on customer satisfaction, since this study focuses exclusively on six service quality factors. Future research can verify the service quality factors in this thesis, especially by testing the added service quality factors. Our research is based on customers’ perspective and how they perceive customer satisfaction in online-banking. Another suggestion for further research, is to study the distinction between banks expectation on how customers perceive the bank, and the actual customer perception of the bank.
REFERENCES


# APPENDIX 1 – FREQUENCY TABLE

**Frequency Table**

<table>
<thead>
<tr>
<th>Statements/Questions</th>
<th>Strongly Disagree</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>Strongly Agree</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>PERSONAL INTERACTION</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1. Personal interaction is important when conducting banking errands.</td>
<td>23</td>
<td>33</td>
<td>24</td>
<td>16</td>
<td>14</td>
<td></td>
</tr>
<tr>
<td>2. I experience the possibility that self-service in the online-bank is something positive.</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>25</td>
<td>82</td>
<td></td>
</tr>
<tr>
<td>3. I prefer to do my transactions via the online-bank instead of visiting a traditional bank office.</td>
<td>0</td>
<td>3</td>
<td>12</td>
<td>15</td>
<td>80</td>
<td></td>
</tr>
<tr>
<td>7. When using the online-bank, customer support is easily accessible.</td>
<td>3</td>
<td>8</td>
<td>37</td>
<td>33</td>
<td>29</td>
<td></td>
</tr>
<tr>
<td><strong>EFFICIENCY</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4. Online-banking services contributes to easily accessible information (account balance etc.)</td>
<td>0</td>
<td>2</td>
<td>19</td>
<td>33</td>
<td>56</td>
<td></td>
</tr>
<tr>
<td>5. The banks online platforms are easily navigated (mobile bank, webpage).</td>
<td>0</td>
<td>6</td>
<td>15</td>
<td>35</td>
<td>54</td>
<td></td>
</tr>
<tr>
<td>6. It is easy to conduct banking online.</td>
<td>0</td>
<td>3</td>
<td>11</td>
<td>43</td>
<td>64</td>
<td></td>
</tr>
<tr>
<td><strong>RELIABILITY</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>8. When I experience a technical problem, the online-bank has features that can solve it.</td>
<td>6</td>
<td>14</td>
<td>47</td>
<td>28</td>
<td>14</td>
<td></td>
</tr>
<tr>
<td>9. The online-bank always suggests the right services according to my specific needs.</td>
<td>5</td>
<td>19</td>
<td>43</td>
<td>27</td>
<td>16</td>
<td></td>
</tr>
<tr>
<td>10. The online-bank is always available.</td>
<td>2</td>
<td>1</td>
<td>3</td>
<td>26</td>
<td>78</td>
<td></td>
</tr>
<tr>
<td>PRIVACY</td>
<td>1</td>
<td>1</td>
<td>11</td>
<td>27</td>
<td>70</td>
<td></td>
</tr>
<tr>
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<td></td>
</tr>
<tr>
<td>13. I perceive that the bank handles my information confidentially.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>14. I perceive that the use of online-services is reliable.</td>
<td>0</td>
<td>2</td>
<td>6</td>
<td>32</td>
<td>70</td>
<td></td>
</tr>
<tr>
<td>15. I feel secure making payments and purchases online while using</td>
<td>1</td>
<td>3</td>
<td>10</td>
<td>20</td>
<td>76</td>
<td></td>
</tr>
<tr>
<td>online-banking services (Bank-ID, Swish).</td>
<td></td>
<td></td>
<td></td>
<td></td>
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<td></td>
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</table>

<table>
<thead>
<tr>
<th>FULFILMENT</th>
<th>2</th>
<th>3</th>
<th>23</th>
<th>35</th>
<th>47</th>
</tr>
</thead>
<tbody>
<tr>
<td>11. When ordering online-banking services, they are always delivered</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>in agreed time.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>12. The services used on the online-bank platform work as promised</td>
<td>1</td>
<td>4</td>
<td>7</td>
<td>32</td>
<td>66</td>
</tr>
<tr>
<td>(payments, account balance, investments etc.)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>TECHNOLOGY</th>
<th>1</th>
<th>4</th>
<th>32</th>
<th>36</th>
<th>36</th>
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</thead>
<tbody>
<tr>
<td>16. I perceive that the bank answers my questions in a good way.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>17. I perceive that online-banking services affect the service quality</td>
<td>2</td>
<td>2</td>
<td>9</td>
<td>31</td>
<td>65</td>
</tr>
<tr>
<td>in a positive way (ATMs, Payments through mobile bank, Swish etc.).</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Perception/Expectations</td>
<td>Not Important</td>
<td>Important</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>----------------------------------------------------------------------------------------</td>
<td>---------------</td>
<td>-----------</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>27. Having the possibility of personal interaction and/or support.</td>
<td>3</td>
<td>14</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>28. That it is easy to find information that I am looking for.</td>
<td>0</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>29. That the technology on the website and in the mobile bank works.</td>
<td>0</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>30. That the security is high.</td>
<td>0</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>31. That services work as promised.</td>
<td>0</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>32. Being able to conduct banking by yourself on the webpage and mobile bank.</td>
<td>0</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
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<table>
<thead>
<tr>
<th>Customer Satisfaction</th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>19. I would recommend my online-bank to my friends</td>
<td>2</td>
<td>5</td>
</tr>
<tr>
<td>20. I can consider switching bank and their online-services.</td>
<td>15</td>
<td>24</td>
</tr>
<tr>
<td>21. I am overall satisfied with my online-bank</td>
<td>2</td>
<td>1</td>
</tr>
</tbody>
</table>

| 18. I perceive it as easy to understand new technology within online-banking.          | 1             | 3         |
| 22. The quality of the banks online services is generally high.                       | 0             | 4         |
APPENDIX 1.2 – QUESTION 23: AGE RANGE

APPENDIX 1.3 – QUESTION 25: USAGE OF ONLINE BANKING

APPENDIX 1.4 – QUESTION 26: VISITING BANK OFFICES 2018
APPENDIX 2 – SURVEY QUESTIONS

Bankkunders uppfattning om online bankens tjänster


Tack på förhand:
Oliver Bacetic & Adam Persson
adam.oliver.hkr@outlook.com

Vänligen ange i vilken utsträckning du instämmer i respektive påstående genom att markera den siffra som bäst motsvarar din uppfattning (1=instämmer inte alls; 5=instämmer helt). Om du inte kan/räcker inte svara på något specifikt påstående, vänligen lämna blankt.

1. Personlig kontakt är viktig när jag utför bankärenden.

[ ] [ ] [ ] [ ] [ ]

1 2 3 4 5

2. Jag upplever möjligheten till självbetjänning (ex göra betalningar, ta fram kontoöversikt) inom online-banken som något positivt.

[ ] [ ] [ ] [ ] [ ]

1 2 3 4 5

☐ ☐ ☐ ☐ ☐
1 2 3 4 5

4. Online banktjänster bidrar till lättillgänglig information (support, kontouppgifter etc.).

☐ ☐ ☐ ☐ ☐
1 2 3 4 5

5. Online-bankens plattform är lättanvänd (mobilbanken, webbplats).

☐ ☐ ☐ ☐ ☐
1 2 3 4 5

6. Det är enkelt att utföra bankärenden online.

☐ ☐ ☐ ☐ ☐
1 2 3 4 5

7. Vid användning av online-banken är kundsupport i form av hjälp lättillgänglig.

☐ ☐ ☐ ☐ ☐
1 2 3 4 5

8. När jag upplever ett tekniskt problem har online-banken funktioner som kan lösa det.

☐ ☐ ☐ ☐ ☐
1 2 3 4 5


☐ ☐ ☐ ☐ ☐
1 2 3 4 5

10. Online-Banken är alltid tillgänglig.

☐ ☐ ☐ ☐ ☐
1 2 3 4 5
11. Beställning av online banktjänster levereras alltid inom avtalad tid.

☐ 1 2 3 4 5

12. De tjänster som används på online-bankens plattform fungerar som utlovat (betalningar, kontoöversikt, investeringar etc).

☐ 1 2 3 4 5


☐ 1 2 3 4 5


☐ 1 2 3 4 5

15. Jag känner mig säker att utföra betalningar och köp online med hjälp utav online banktjänster (Bank-ID, Swish etc).

☐ 1 2 3 4 5


☐ 1 2 3 4 5

17. Jag uppfattar att online-bankens tjänster påverkar servicekvalitén positivt (uttagsautomater, betalningar med mobil bank och Swish etc.).

☐ 1 2 3 4 5

18. Jag har lätt för att ta till mig ny teknologi inom online-banken (Swish, nya sätt för betalningar för fakturor).

☐ 1 2 3 4 5
19. Jag kan tänka mig att rekommendera min online-bank och dess tjänster till mina vänner.

☐ ☐ ☐ ☐ ☐ ☐ 1 2 3 4 5

20. Jag kan tänka mig att byta bank och dess online-tjänster.

☐ ☐ ☐ ☐ ☐ ☐ 1 2 3 4 5

21. Jag är överlag nöjd med min online-bank.

☐ ☐ ☐ ☐ ☐ ☐ 1 2 3 4 5

22. Kvalitén på bankens onlinetjänster är överlag hög.

☐ ☐ ☐ ☐ ☐ ☐ 1 2 3 4 5

Övriga frågor

23. Din ålder: ____________________ (Exempel: 38 år)

24. Hur hanterar du vanligtvis betalningar av räkningar?

☐ ☐

Via Online-banken Via besök på Bankkontor
25. Hur ofta använder du online-bankens tjänster?

☐ Dagligen
☐ Någon gång i veckan
☐ Någon gång i månaden
☐ Mer sällan

26. Hur många gånger har du besökt ett bankkontor 2018?

☐ 0
☐ 1-2 
☐ 3-4
☐ 5-6
☐ 7-

Frågor som besvaras utifrån era förväntningar

Nedan följer 6 påståenden där vi ber er markera den siffra som bäst motsvarar din uppfattning om hur viktigt påståendet är för er när ni använder bankens onlinetjänster (1=inte alls viktig; 5=mycket viktigt).

27. Att det finns möjlighet till personlig interaktion och/eller support.

☐ 1
☐ 2
☐ 3
☐ 4
☐ 5

28. Att det är lätt att hitta information som jag söker.

☐ 1
☐ 2
☐ 3
☐ 4
☐ 5

29. Att tekniken på webbplats och i mobilbanken fungerar.

☐ 1
☐ 2
☐ 3
☐ 4
☐ 5
30. Att säkerheten är hög.

<p>| | | | | | |</p>
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<tr>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
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</tbody>
</table>

31. Att tjänster fungerar som utlovat.

<p>| | | | | | |</p>
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</table>

32. Att kunna utföra bankärenden på egen hand från webbplats och mobil-banken.

<p>| | | | | | |</p>
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<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
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APPENDIX 3 – STATISTICS OVER CITATIONS BY PARASURAMAN

APPENDIX 4 – RELIABILITY DEPENDENT VARIABLES

**Reliability Statistics**

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<thead>
<tr>
<th>Cronbach Alpha</th>
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<td>0.202</td>
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