

The loyalty effect

Predicting customer loyalty using the American Customer Satisfaction Index and the Net Promoter Score

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Abstract

- Title:** The loyalty effect – Predicting loyalty using the American Customer Satisfaction Index and the Net Promoter Score
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- Purpose:** The purpose is to predict customer loyalty by utilising big data. This will be done by combining two models: The American Customer Satisfaction Index (ACSI) and the Net Promoter Score (NPS) using the benefits of each model, the cause and effect relationship in ACSI and the simple survey methodology in NPS.
- The findings are aimed to facilitate a work method enabling companies to use big data in order to predict customer loyalty to be able to pro-actively work with detracting customers and to grow future profits.
- Method:** The methodology had both a quantitative and qualitative approach. By deducting a model from a theoretical analysis a linear relationship was derived between ACSI and NPS. The drivers of loyalty was then developed from a qualitative analysis and tested through a quantitative analysis of the relationships in the model.
- Findings:** A relationship between the NPS and the ACSI was possible to prove. However, it was not possible to predict customer loyalty since the drivers of loyalty could not be explained with the available data and further research is therefore needed.
- Keywords:** Customer loyalty, Net Promoter Score, NPS, American Customer Satisfaction Index, ACSI, Multiple linear regression.

Abbreviations

SCSB	Swedish Customer Satisfaction Barometer
ACSI	American Customer Satisfaction Index
CSI	Customer Satisfaction Index
PV	Perceived Value
PQ	Perceived Quality
CE	Customer Experience
NPS	Net Promoter Score
MLR	Multiple Linear Regression
Centrex/Mobile Centrex	A cloud based telephony service from Telavox
Packet loss	Interference during IP-telephone calls
Interactions	Time spent in customer service
Mail interactions	Number of mails to customer service

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1 INTRODUCTION

1.1 Background

There was a time when unsatisfied customers were less critical and outspoken when dealing with a business. The power belonged to the business owner and since customers usually had nowhere else to turn if they weren't satisfied, companies didn't have to focus on keeping their customers happy.

This is not the case today. Nowadays, customers are becoming increasingly more demanding, less tolerant and very critical when not having their expectations met. Furthermore, customers have a lot of choices on where and who to deal with. As a result the power has shifted to the customer. If you succeed in really making your customers satisfied they will often be loyal to you and tell others about how great you are. And, if you fail to make them satisfied, in the worst case scenario, they will tell others how bad you are with possibly dire consequences. In other words, companies today have to work hard to get loyal customers. The cost of losing customers has also been proven to be very high as studies shows that the cost to attract a new customer is five times bigger than the cost to retain a current one (Forbes, 2012).

In the early 1950s, scholars started to pay more attention to customer satisfaction since the realisation that many companies at that time were not customer focused. Companies rather had a focus on the product or the logistics. The strategy was to make the best product and ship it to the right location faster, cheaper, and more efficiently than their competitors (Keiningham, Aksoy, Cooil, Andreassen & Williams, 2008; Visioncritical, 2015).

In the 1970s, customer satisfaction began to emerge as a legitimate field of inquiry. The U.S. Department of Agriculture's Index of Consumer Satisfaction was the first study to report direct information on consumer satisfaction to policy makers (Churchill, 1982).

In the 1980s, companies began to see the benefits of having satisfied customers and they started to incorporate strategies to boost customer satisfaction. However, the results needed to be evaluated and compared in order to be relevant and in the pre-internet days this was both time consuming and expensive (Visioncritical, 2015).

Thus, in 1994 Claes Fornell created the American Customer Satisfaction Index, henceforth ACSI. The ACSI model measures the cause and effect relationship of customer satisfaction where the antecedents of satisfaction explained the cause and customer loyalty was the big effect of satisfaction. The ACSI made it possible to track and trace satisfaction and loyalty across industries and companies (Fornell, Johnson,

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Anderson, Cha & Bryant, 1996). Fornells model gradually became the preferred method of measuring loyalty in several countries (ACSI, 2015b).

Later, in 2003 Frederick Reichheld – noted Harvard Business School Press author, speaker, loyalty expert, and fellow at Bain & Company Consulting – introduced a concept called the Net Promoter Score, henceforth the NPS, in a Harvard Business Review article, “The one number you need to grow” (Reichheld, 2003).

Reichheld’s claim was straightforward, of all the customer survey metrics an organisation can track; customer loyalty was the most important one. Reichheld had proven a direct connection between customer loyalty and company profit growth and claimed that by measuring and improving customer loyalty, and hence overlook customer satisfaction; a company could directly affect and increase their financial performance (Ibid).

However, Reichheld found most current ways of measuring loyalty to be redundant and therefore created the Net Promoter Score (Ibid). And, the NPS had an edge to other metrics; it helped companies to get a better understanding of how loyal their customers are by only asking them one simple question:

“How likely is it that you would recommend [brand or company X] to a friend or colleague?” on a scale of 0 -10.

Thousands of innovative companies, including Apple, American Express, Philips, GE, Facebook and LEGO have adopted the NPS. They like the simplicity of the concept and that the NPS is easy to understand for anyone in an organization (Reichheld, 2011).

Regardless of the preferred measurement method the traditional way to get insights about how satisfied and loyal customers are is to ask them through interviews or surveys. However, the response rate tend to be low since surveys often are time consuming for both the customer to answer and company to conduct the survey and analyse the response.

The difficulties in time consumption and the amount of customers a company is able to study is something that in recent times has been facilitated through big data, which has evolved from more and more companies’ abilities to accurately track customer experience. It has aided decision makers and management to see patterns in customer behaviour and identify customers who may be about to defect. Big data has enabled companies to analyse, understand and more importantly visualize information from data on your customer’s behaviour to use it for a strategic purpose and has over time become an important method in the affecting customer’s experience (Ericsson, 2014). Although, many companies still use current methods of measuring customer loyalty and since they are not created for big data they still have to conduct their surveys by asking their customers one-by-one. The fact that

there have been no other previous studies that enabled the use of big data in current loyalty measurement techniques makes company's today struggle with their customers well-being.

The field of customer research has expanded to account for approximately seven percent of all market research (Visioncritical, 2015). This has gotten to the point where there are numerous different ways for businesses to measure their customer loyalty including different theories and big data where each has their own upsides and downsides and it is up to the management to choose what suits them best.

1.2 Problem Discussion

Whether a company uses ACSI, NPS or another survey methodology to measure customer satisfaction and customer loyalty, it is a difficult task especially, for the companies with a large number of customers. For companies with a lot of customers it is costly and time consuming to get an accurate picture of what the customers think since it is impossible to ask them all. And the companies have to rely on predictions that sometimes are out of date when they are published.

The NPS theory is considered to be a very easy-to-use measurement for businesses that wants to grow profits through customer loyalty. The ease of only having to ask a single question has made it very popular and the outcome is something that is very easy to communicate within organisations that has adopted it (Reichheld, 2011). However, even though the NPS has been claimed to be the single best predictor of a firm's profitability and is used by many top-tier companies it has been heavily criticized. One of the recurrent and most criticized shortcomings of the NPS is the fact that it lacks traceability as a consequence of only using one question (Grisaffe, 2007; Research, 2015). Managers that are faced with the task to improve the NPS will be left to speculate about what factors affect the loyalty and what specifically needs to be done to increase it (Grisaffe, 2007). Thus, without traceability the user is left with a measurement that is difficult to affect, unlike the ACSI model, which has a very clear cause and effect relationship. In fact, many critics of the NPS often discuss the advantages of the ACSI as drawbacks in the NPS.

The ACSI model however, is a more complex model that is derived from more complex statistics. The allure of user-friendliness that is the biggest sales pitch for the NPS is lost in the ACSI model. Although, is has significantly better traceability with a breakdown of several customer specific factors.

Since the criticism of the NPS Reichheld (2003) acknowledged the fact that the lack of traceability in the NPS diminished the theory's usefulness and stated that:

“Follow-up questions can help unearth the reasons for customers' feelings and point to profitable remedies. But such questions should be tailored to the three categories of customers. Learning how to turn a passively satisfied customer into a promoter

requires a very different line of questioning from learning how to resolve the problems of a detractor.” (Reichheld, 2003)

Reichheld’s solution to the issues of the NPS, however, further complicates the measurement rather than builds on the appeal of an easy measurement for loyalty. There are however facilitating methods for this. In recent years companies has started analysing big data and more specifically customer specific data in order to evaluate the customer’s experience. However, many theories on customer loyalty have yet to assimilate this progress. Current customer loyalty theories are not made to accommodate the type of data that many businesses today have access to. The difficulties call for an approach where proven customer loyalty theories enable customer specific data and the benefits that goes along with it (Ericsson, 2014).

1.3 Purpose

The purpose is to predict customer loyalty by utilising big data. This will be done by combining two models: The ACSI and NPS using the benefits of each model, the cause and effect relationship in ACSI and the simple survey methodology in NPS.

The findings are aimed to facilitate a work method enabling companies to use big data to predict customer loyalty, in order to pro-actively work with detracting customers and to grow future profits

1.4 Research question

1. Is it possible to establish a linear relationship between the NPS and the ACSI?
2. If so, is it possible to create a linear relationship between the ACSI and customer specific data to predict customer loyalty?

1.5 Delimitations

Some delimitations have been made in order to be able to apply the desired methodology. Firstly, as described in chapter 3 the study have been carried out as a case study. The reasons for this can be found in the previously mentioned chapter but the chosen approach comes with some delimitations.

The fact that the study is a case study implies that the used methodology is case specific. Many of the empirical observations done could possibly be translated in some form to another company in the same industry but would probably have difficulties being directly applied in a totally different industry. The overall approach and theoretical reasoning could, however, be applied and discussed in other industries.

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Another delimitation brought on by the case study is the fact that the study only involves business to business customers. The limitations entrained by that approach are similar to the previous discussion on the case specificity. This also indicates that the other reasoning is valid, much like the previous delimitation.

The chosen methodology also entails delimitations in what companies are capable of applying it. Customer specific data is an essential asset to be able to conduct the type of methodology that is presented in the thesis. Therefore, the approach is targeted to companies with access to customer specific data in order for the results to apply.

There are many different methods and models to measure customer satisfaction and customer loyalty. However, this thesis focus on ACSI and NPS since they are two well established theories used by companies today. Hence, other theories were disregarded.

There are also many statistical methods to model a relationship between several measurement variables. In the thesis multiple linear regressions (MLR) are used since it is a generally known statistical method useful when modelling a relationship between several parameters. For this reason, all other methods discarded.

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2 THEORY

The following chapter will give an introduction to the concept of customer loyalty. After that there is a brief description of national indices regarding customer satisfaction. Although, focus in the chapter will be on the ACSI and NPS models that will be presented and discussed in terms of advantages and disadvantages of the two methods of measuring customer loyalty.

2.1 Customer loyalty

Loyalty in a business-customer relationship is similar to that of an ordinary relationship. Everyday loyalty is shown by being willing to sacrifice or make an investment to be able to strengthen the relationship to someone. In a customer-business relationship it is about staying with a certain company even though they may not offer the lowest price, but you are however very pleased with the received service, shipping, the product itself or something else (Reichheld, 2003). Although, loyalty is not only about repurchasing the same product over and over, a customer can repeat purchases because of laziness, convenience, lack of options or the fact that the company has made it difficult for the customer to switch (Tepeci,1999). Loyalty is a way of running a business and being able to bring superior value to your customers in the long term. The loyalty leaders do not chase the short term profit but focus on investing in the customer experience to get them to stay even though a competitor may offer a lower price or a temporary discount (Reichheld, 1993).

Thereof, aspiring for loyalty has its benefits. Research suggests that customer loyalty is the prominent determinant of profitability and a 5% improvement in customer loyalty could result in a 25-85% improvement in profits (Reichheld & Sasser, 1990). Also, loyalty goes hand in hand profitable company growth. It has been shown that companies that are leading in customer loyalty within its industry grow twice as fast as companies that are in the bottom when it comes to loyalty ranking (Bain & Company, 2011).

2.1.1 Connection between customer satisfaction and customer loyalty

Most scholars agree that customer satisfaction leads to greater customer loyalty. Through increasing loyalty, customer satisfaction secures future revenues (Bolton, 1998; Fornell, 1992; Rust, Zahorik & Keiningham, 1995), reduces the cost of future transactions (Reichheld & Sasser, 1990), decreases price elasticity (Anderson & Fornell, 1997), and minimizes the likelihood customers will defect if quality falters (Anderson & Sullivan, 1993).

Studies have shown that loyalty is an effect of satisfaction and that both loyalty and satisfaction are driven by the same effects on the customer (Bowen & Chen, 2001). An increase in satisfaction tends to lead to a proportionally bigger increase of loyalty and there are signs that the same drivers have a bigger overall impact on loyalty

than they have on satisfaction (Bowen & Chen, 2001; Martensen, Gronholdt & Kristensen, 2010).

2.2 National customer satisfaction indices

One of the most important driving forces for any economy is determined by the demands of the people. It is therefore critical to understand actual user valuation of supplied produces, goods and services. A customer satisfaction index (CSI) is a useful instrument to measure, estimate and analyse the customer experience. (Eklof & Westlund, 1998)

As a result of this Claes Fornell and colleagues introduced the Swedish Customer Satisfaction Barometer (SCSB) in 1989, as a tool to assess companies' efforts in achieving customer satisfaction (Fornell, 1992). The SCSB was the first national customer satisfaction index in the world. Historically it has included 130 of the largest companies in Sweden from the 32 of Sweden's largest industries. (Johnson, Gustafsson, Andreassen, Lervik, Cha, 2001).

Several other national satisfaction index models have been derived from the SCSB since then (Johnson et al., 2001). The successful experience of the SCSB inspired Claes Fornell in 1994 to create the American Customer Satisfaction Index and the basic ACSI technology is now used in more than 16 countries in addition to the United States, including Great Britain, Brazil, Singapore, Sweden and South Korea (ACSI, 2015a).

A customer satisfaction index is a way to model, measure, estimate and analyse the interaction between the drivers of customer satisfaction and the consequences. According to Eklof and Westlund (1998) a CSI should contain the following characteristics:

- a theoretical micro-economic model that describe economic behaviour
- provide information about the level of satisfaction for the individual company or product
- be comparable over time across competitors, industries and nations
- be able to aggregate into industry, economic sector and national indicators
- indicate the relationship between efforts done within the company and their effects on customer satisfaction

2.3 American Customer Satisfaction Index

The American Customer Satisfaction Index (ACSI) was introduced in 1994 to provide a standardised index reflecting the customer experience, including overall customer satisfaction and customer loyalty (Johnson et al., 2001). ACSI is used as a customer-based measurement system for evaluating and enhancing the performance of firms, industries, economic sectors and national economies. By collecting survey data at an individual customer level it provides insights about the entire customer experience across 10 economic sectors, more than 43 key industries and more than 300 major companies that together represent a majority of the U.S. national economy (ACSI, 2015a). The primary objective to explain in the model is customer loyalty as it stands as a proxy for profitability (Fornell et al., 1996).

2.3.1 ACSI methodology

To measure overall customer satisfaction in a uniform and comparable way requires a methodology with some fundamental properties. The first is that the constructs in the ACSI model are representing different types of customer evaluations that cannot be measured directly. Hence, ACSI uses a multiple indicator approach to measure customer satisfaction as a latent variable. The ACSI result is therefore a latent variable score which makes it possible to compare across companies, industries, economic sectors and nations. (Fornell et al., 1996)

Latent variables are unobserved variables that are measured by multiple observed variables. For example the level of happiness is a latent variable, to measure it one usually has to take several dimensions into consideration and combine several observed variables e.g. income, relationship status and health status etc. The advantages of using latent variables are that it reduces the dimensionality of data. It makes it possible to aggregate a large number of observable variables in a model to represent an underlying concept, making it easier to understand the data. (Borsboom, Mellenbergh & Van Heerden, 2003)

While some studies find that satisfaction is the driver of general perception of quality other studies say the opposite (De Ruyter, Wetzels, Lemmink & Mattson, 1997). However, if you define customer satisfaction as the overall evaluation of performance to date, more recent quality received is a driver of customer satisfaction (Johnson, Anderson & Fornell, 1995). All national indices evolved from the SCSB view quality as driver of customer satisfaction (Johnson et al., 2001).

As an overall measure of customer satisfaction, ACSI must be measured in a way that accounts for both consumption experience in the past as well as expected consumption experience in the future. Because of this, customer satisfaction (ACSI) is embedded in a system of cause and effect relationships. The causes, or the drivers, are the determinants of customer satisfaction (ACSI) and the effects, or the consequences, are the outcome of it. In the ACSI-model, perceived quality, customer

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expectations and perceived value are considered drivers of customer satisfaction (ACSI) and the consequences are customer loyalty and customer complaints, as can be seen in figure 1. (Fornell et al., 1996)

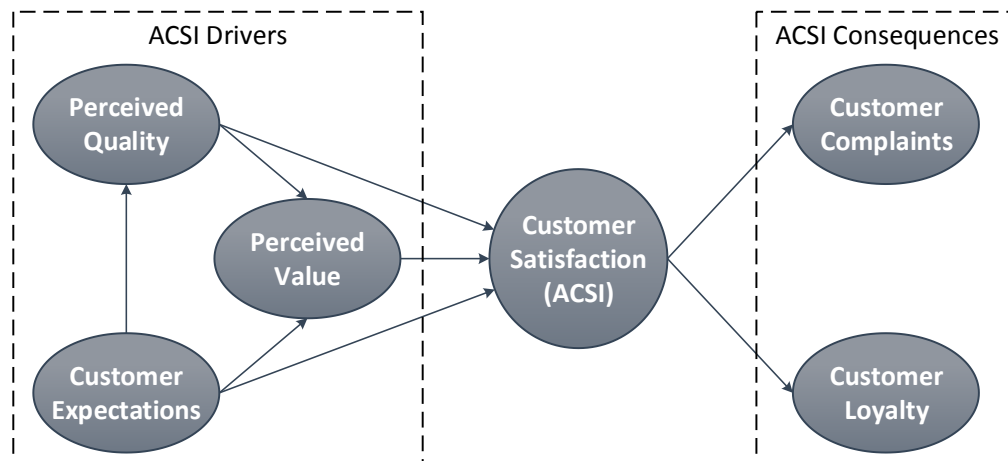


Figure 1 - The American Customer Satisfaction index model

2.3.2 The drivers of ACSI

2.3.2.1 Customer expectations

Customer expectations measures what the customers anticipate of the quality of a company's products or services. Expectations represent both the customer's consumption experience prior to the purchase which includes information from advertisement and word of mouth as well as an expectation on the quality the company can deliver in the future. Customer expectations is positively related to perceived quality and, subsequently, to perceived value. (Fornell et al., 1996)

When working with the ACSI customers are asked to remember what expectations they had regarding the quality of the product or service pre-purchase, using the following measures (Ibid):

1. Overall expectations
2. Expectations regarding customization
3. Expectations regarding reliability

2.3.2.2 Perceived quality

Perceived quality is a measure of the customer's evaluation of the quality a company's products or services offer that they recently experienced. Perceived quality has a direct and positive effect on customer satisfaction. There are two components that primary describes perceived quality (Ibid):

- Customization, the degree to which the product or service meets the customer's individual needs

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- Reliability, the degree to which the company product or service is reliable, standardized, and free from deficiencies.

The questions asked in regards to the quality are similar to that of expectations, although, they are post purchase (Ibid):

1. Evaluation of overall expectations (post purchase)
2. Evaluation of expectations regarding customization (post purchase)
3. Evaluation of expectations regarding reliability (post purchase)

2.3.2.3 Perceived value

Perceived value measure the perceived level of product quality relative the price paid. The price is usually very important in the beginning when the customer makes the first purchase, but for repeat purchases it usually has a smaller impact on customer satisfaction. Adding perceived value into the model incorporates information about price and makes it possible to compare results across companies, industries and economic sectors. Perceived value is positively related to customer satisfaction (Fornell et al., 1996). In industries such as telecommunication, airline and retail empirical studies has identified perceived value as a major driver of customer loyalty (Yang & Peterson, 2004). Customers are asked two questions regarding perceived value (Fornell et al., 1996):

1. quality relative to price
2. price relative to quality

2.3.3 The consequences of ACSI

2.3.3.1 Customer loyalty

Customer loyalty combines information on the customer's likelihood to repurchase from the same company in the future, and the customers price tolerance. Customer loyalty is the primary objective to explain in the model since it can be used as a proxy for profitability. Customer loyalty is positively correlated with customer satisfaction i.e. increased customer satisfaction leads increased customer loyalty. (Fornell et al., 1996)

There are two measures of customer loyalty:

1. The customers likelihood to repurchase
2. Depending on if the customer indicated he or she is likely or not likely to repurchase the following questions are asked:
 - To what degree the company could raise their prices as a percentage to previous price to make sure that the customer would definitely

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not repurchase from the company the next time, given that the customer would repurchase.

- To what degree the company could lower their prices as a percentage to previous price to make sure that the customer would definitely repurchase from the company the next time, given that the customer would not repurchase. (Fornell et al.,1996)

2.3.3.2 Customer complaints

Customer complaints are measured by measuring the percentage of respondents who have complained about a product or service to the company or a reseller during a certain time frame. Customer complaints have a negative relation to customer satisfaction and satisfied customers are obviously less likely to complain. Customer complaints are measured if the customers have complained in writing or by phone to either a service personnel or a retailer. (Fornell et al., 1996)

2.3.4 Benefits

Many studies have shown that a CSI can be used to predict the market value and profitability of a company and this is one of the reasons why so many countries are conducting customer satisfaction studies (Hsu, 2008). In a study the SCSB scholars found that the companies that had a positive change in CSI for two consecutive years had an average increase in profits (measured as return on assets) of 10 %, and for companies that had a negative change during the same period, the profit (measured as return on assets) decreased on average by 14 %. (Anderson et al., 1994). The ACSI index is has also been proven to be an indicator of productivity levels at the measured company (Huff, Fornell and Anderson, 1996; Anderson et al., 1997)

There is traceability in the ACSI which allows the users to find the cause for customer satisfaction. The structure of customer satisfaction allows the user to trace customer answers in order to find driver of satisfaction and the fact that the measurement accumulates satisfaction from different angles; overall satisfaction, drivers and consequences, further enhances the precision of it (Johnson et al., 2001).

2.3.5 Disadvantage

One of the limitations that are discussed regarding the ACSI is the fact that satisfaction in the model is a mediator of the effects that perceived value, perceived quality and customer expectations have on loyalty. The customer's drivers of satisfaction affect how the customer values a product and what they think of it. This later accumulates in the model as satisfaction. However, since these are drivers of a customer's attitudes and assessments, it is likely that they would have a direct effect on loyalty that may not be mediated through satisfaction (Anderson et al., 1994).

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Another disadvantage regarding the ACSI is the fact that some assumptions are becoming slightly outdated. Specifically, the assumptions regarding customer complaints. Customer complaints are regarded as highly influential on a customer's satisfaction of a service or product. By looking at how customer complaints are being handled they should be regarded as a driver of satisfaction rather than a consequence. This also has some methodological reasons; since a customer usually has their complaint handled before they are surveyed it is more logical to see it as a driver rather than a consequence (Johnson et al., 2001).

2.4 Net Promoter Score

The Net Promoter Score is a management tool that was developed by Fred Reichheld, Fellow at Bain & Company. NPS is used to measure customer loyalty and serves as an alternative to the more traditional customer loyalty management techniques. It helps companies to get insights into what their customer loyalty looks like by tracking net promoters and through the belief that it is the word of mouth that from loyal customers that constitutes future profit growth (Bain & Company, 2011). And, since positive word-of-mouth from customers lowers the cost of attracting new customers and enhances the firm's overall reputation a negative word-of-mouth from dissatisfied customers naturally has the opposite effect (Anderson, 1998; Fornell, 1992). Thus, firms providing superior quality enjoy higher economic returns (Aaker & Jacobson, 1994; Anderson, Fornell & Lehmann, 1994; Anderson & Fornell 1997; Bolton, 1998; Capon, Farley & Hoenig, 1990).

2.4.1 NPS methodology

The measurement consists of a single metric that is derived from a single question that is addressed to the customers:

How likely is it that you would recommend [brand or company X] to a friend or colleague?

The customer answers by choosing a number between zero and ten, where zero is not likely at all and ten is extremely likely. The answers are then divided into three different categories:

- 0 – 6 are detractors
- 7 – 8 are passives
- 9 – 10 are promoters

The detractors are unhappy customers who are stuck with the company as a provider of the service or product for various reasons. The passives are indifferent customers and might or might not change provider. And, the promoters are recurring customers who keep buying the service or product and gladly tell their friends to do the same. (Reichheld & Markey, 2011)

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In the perfect scenario an organisation would have 100 percent promoters and in a worst case scenario the organisation would have 100 percent detractors. Thus, the way to calculate the final NPS score is to take the percentage of promoters and subtract it with the percentage of detractors. The final NPS score reaches from negative 100 % to positive 100 %. The visualised breakdown can be seen in figure 2. (Reichheld, 2003)

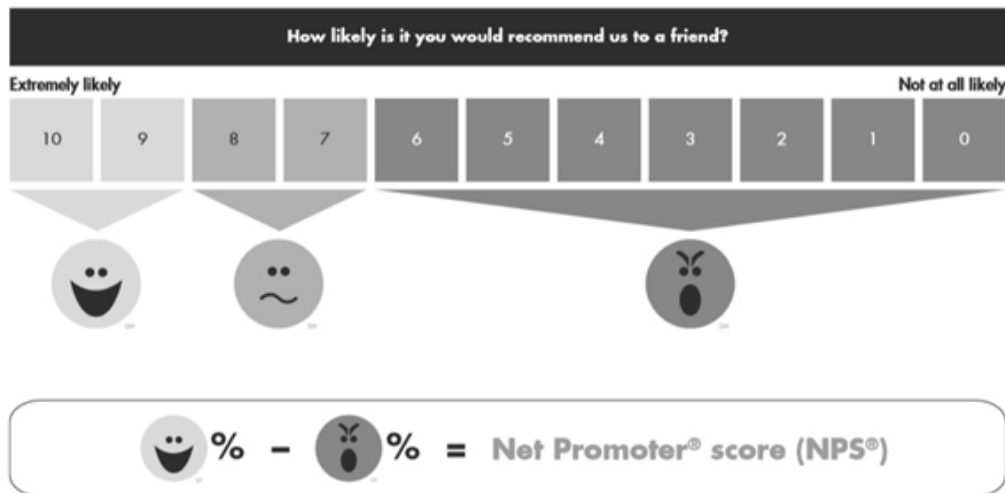


Figure 2 – How to calculate Net Promoter Score (Reichheld & Markey, 2011)

By using a single metric the company can more easily measure how loyal their customers are. This together with the fact that it creates a measurement that is easily communicated within the organisation can create accountability amongst employees, which triggers the urgency of the matter. (Reichheld & Markey, 2011)

2.4.2 Benefits

It is well known within the business world that a loyal customer cost less to retain than the cost of attracting new ones. The recurring customers not only yield additional purchases but also provide the company with valuable feedback on products, services, customer services etc. A loyal customer is also considered to become less price-sensitive and usually promotes the product, service or organization to their friends. Thus, the benefits of loyal customers are many and the connection to growth is therefore to rather focus on the mission than on profit. (Reichheld & Markey, 2011)

Growth is usually linked to profit in the way that increased profit equals increased growth. Even though the statement is true the NPS suggests a focus on the mission and to see the profit as a consequence of that mission. This is discussed in the terms of good and bad profits. The bad profits are profits that are made on the customer's expense, situations where the customer feels that they have been overpriced or

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tricked by the company. “Bad profits are about extracting value from the customers, not creating value”. (Ibid)

Bad profits in turn create detractors. Customers that stop buying the product, switch to another supplier and even tell others not to buy from that company (Reichheld & Markey, 2011)

Good profits, however, create promoters, customers who are loyal to the company and are likely to return for additional purchases. These customers are also likely to recommend the company to their friends, colleagues, relatives etc. As for the example with Amazon, who is a user of the NPS, Reichheld (2011) explains:

Amazon.com could easily afford to advertise more than it does; instead, it channels its investments into free shipping, lower prices and service enhancements. Founder and CEO Jeff Bezos has said, “If you build a great experience, customers tell each other about that”. (Ibid)

One of the main reasons of using the NPS is the simplicity. There is only one question and one result. Everybody can understand and use the NPS without any advance analysing tools or having to hire a consultant to do it. The simplicity goes along with the ease of use. Because the NPS is considered to be such an easy measurement it can easily be communicated within the organisation and understood. Therefore, as previously mentioned, more employees will see the effect their work has on the customer loyalty and the connection it has to good profits. (Netpromotersystem, 2015)

2.4.3 Disadvantage

One of the biggest disadvantages of the NPS that is a recurring area for critique is the fact that the measurement lacks traceability. The NPS gives an indication that something is wrong but it does not tell where the issue lies and how to possibly deal with it. Grisaffe (2007) gives a good analogy of the problem:

Imagine that your child has a high fever. The “one number”, his or her temperature, clearly is not where it should be. A doctor having that one number may know there is a problem, but still does not know what the specific problem is, and by implication, what the most appropriate treatment is.

The lack of traceability raises another problem that is also recurring amongst critics. Grisaffe (2007) gives an example of this where it is possible to have five percent promoters and five percent detractors and 90 percent passives. This results in an NPS measurement of zero. The same measurement would be achieved by a company that has 50 percent promoters and 50 percent detractors and zero percent passives. The NPS of that company would also be zero. However, obviously the different companies have different issues to deal with. The company that has 90

percent passives seems to have an all over average relationship with the customers and should work on improving the overall loyalty. The company with the 50/50 result are performing really well in some parts and badly in others and should try to replicate the well performing parts and minimize the others. Thus, the prelude to the NPS is important from a management perspective. (Grisaffe, 2007)

2.5 Theoretical framework

A first step to creating predictability in the NPS was to establish a theoretical line of reasoning. From the theoretical chapter an analysis was made in order to establish a model from which to visualise a workflow and an approach to the theory.

The theoretical framework, as presented in figure 3, is derived from the ACSI model together with the NPS. Since the work method was based on prediction the drivers and consequence relationship was something that was fundamental when looking at interrelations between the ACSI and the NPS.

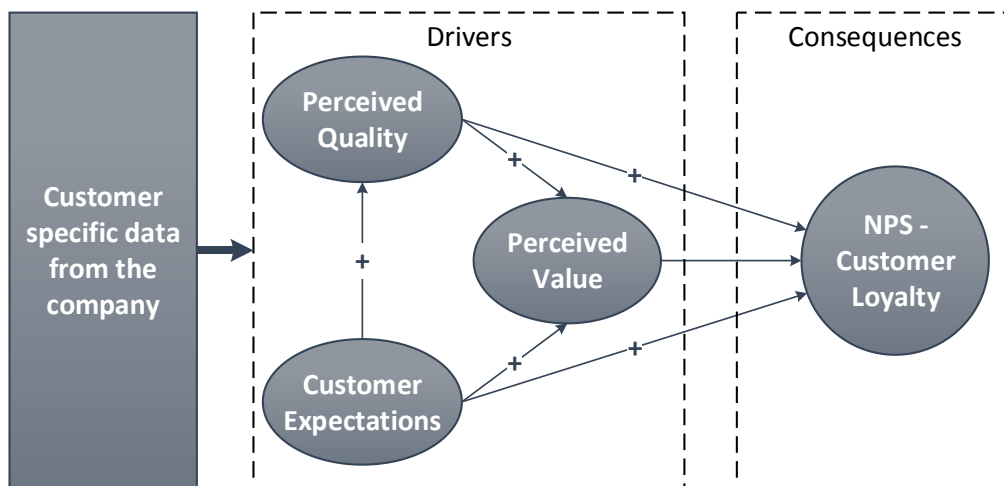


Figure 3 - The relationship model developed by the authors

However, some modifications have been made, consistent with studied literature, to simplify the model and to streamline it towards the intended consequence to measure. Firstly, customer loyalty has been replaced with the NPS. It will serve as the measurement of customer loyalty and thus also a consequence of the drivers.

Customer satisfaction and loyalty, as discussed before, are tightly connected, the drivers of satisfaction are largely the same as the drivers of loyalty. Although satisfaction and loyalty reacts to the same drivers the impact on loyalty or satisfaction could be larger or smaller depending on the driver. A small increase in customer satisfaction could mean a big leap in customer loyalty and vice versa. Also, some scholars discuss that drivers affecting customer attitudes might have a direct effect on customer loyalty. The effect is however left out due to the accumulation in

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customer satisfaction. So, since the intention with the model was to simplify measurement and traceability of loyalty, the aspect of satisfaction was removed from the model to make it more understandable and to shift focus to towards customer loyalty.

Another important aspect from the ACSI model that has been altered is customer complaints. The recent chapter has discussed the possibility of deriving the customer complaints consequence as a driver of satisfaction. In the traditional ACSI model customer complaints is an influencing factor to the loyalty. Since both satisfaction and loyalty share similar drivers the customer complaints will be seen as a driver in the customer loyalty centred framework. The factor of customer complaints has therefore been taken into consideration through inclusion in the perceived quality. The ACSI model discusses reliability as an important evaluation of perceived quality and defines it as: Evaluation of reliability experience, or how often things have gone wrong (Fornell et al, 1996). So, therefore measurement variables for customer complaints have been integrated in the evaluation of perceived quality.

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3 Case description

The upcoming chapter will give a brief introduction to the choice of a case study. It will then present the company where the study has been made and why that specific case study was chosen.

3.1 Case Study

A case study is usually a good approach when investigating a contemporary phenomenon and asking questions like “how” and “what”. It creates the opportunity to observe the phenomenon take place and to follow the people in it (Yin, 2003). This spawned the possibility to see what drove customer loyalty first hand and how it could be measured. Because of this a case study was chosen as the approach to fulfil the purpose.

A common critique against a case study is the fact that it usually generates little room for generalisation, due to such facts as unique populations and unique surroundings. However, case studies provides good basis for generalisation of theoretical findings (Yin, 2003). This study focuses on proving theoretical relationships and creating generalizable theoretical results, hence a generalisation of the results is possible although altered circumstances should be taken into consideration when applying the findings in different cases. Since a case, much like an ordinary experiment, does not generalise by counting frequencies but does, however, generalise by expanding theories (Yin, 2003), the study will therefore be able to generalise the findings regarding the theory but will not generalise the findings made from the specific case study.

3.2 The case Telavox

A study from 2014 shows that the telecom industry has the least satisfied customers and that this potentially could have a negative impact on companies (ACSI, 2015c). And, a together with ha history of a certain industry behaviour, such as complicated bills and price plans, long contracts etc. has led to untrustworthiness and disloyalty amongst customers (Marketstrategies, 2015). Thus, the choice of case study was within the telecom industry. The chosen company was a young, fast-growing telecom operator namely Telavox.

Telavox is a telecom operator offering IP-telephony and cloud-based services mainly to the business-to-business segment. They operate independently on Telia’s networks in Sweden as a virtual operator i.e. they do not own the networks but can use it through licensing agreements with Telia. They were one of the first to offer IP-telephony in Sweden and received their operating status in 2003 and has since then been operating on Telia’s networks. Telavox have grown significantly from year to year from the start and the massive expansion has led to growing pains in some

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parts of the organisation. (Telavox, 2015a). The company has, at present, 90 000 customers categorised into:

- **Direct customers** - where Telavox control everything from sales to service
- **Agent** - where Telavox sell through retailers that are using the Telavox brand
- **Wholesale** - where the retailers sell Telavox services but using another brand

Today, Telavox has approximately 40-50 employees that in some way are involved in the customer experience, working in customer service, sales and operations. This gives every department at Telavox good insight into drivers of customer loyalty and in what way their different actions could potentially affect the customer. However, Telavox only has one person working full-time with customer care for current customers. Insights in the cause of customer loyalty and traceability of loyalty would therefore be appreciated tools for the customer care department.

Apart from the fact that Telavox as a telecom company is a good fit for the study there is also the benefit from the fact that much of the customer's usage of the service is tracked and recorded in the company database as customer specific data. This enables the possibility to follow the customer experiences throughout the customer lifecycle by analysing the data and see patterns in how the service is used. The case study also facilitates the access to such customer sensitive data.

4 METHODOLOGY

The following chapter will discuss the chosen methodology. The choices and justifications that fulfilled the purpose will be explained. The chapter will firstly explain the choice of methodology that has been used and present a walkthrough on the whole process of creating the thesis. After the walkthrough the decisions made during the thesis will be discussed from both a qualitative and quantitative point of view. Finally the chapter will have a critical reflection on the chosen methods.

4.1 Methodology approach

The overall approach to the methodology has been to first establish a relationship between the chosen theories. And then to add customer specific data to derive a linear relationship between the data and the theories. This was initiated by the examination of interrelations between the ACSI and the NPS to deduct an approach from which the relations would be tested. The study was initiated by a literature review of current theories on customer loyalty and satisfaction. It is common to look at what current information is available and what previously has been done in the field of interest. The overview helped to formulate a specific and relevant research question (Backman, 2009). The described methodology is called a deductive approach. The study will therefore have its foundation in theory that later in the thesis will be subjected to empirical testing (Bryman & Bell, 2011).

From the literature a model of the ACSI and the NPS was derived. A model is defined as a representation of a system that is used in order to draw conclusions from the behaviour of that system, or parts of that system. It differs from theory in the way that a model represents a system whereas a theory explains the systems facts or events (Cooper & Schindler, 2014). The model was created in order to visually represent the theory that would be exposed to empirical scrutiny.

The empirical gathering had two different objectives. Firstly, there was the qualitative part, including interviews with customers and employees that would map the drivers of customer loyalty and what Telavox could measure. Secondly, with that data at hand, a quantitative survey was sent out. This was done in order to allow sampled customers to grade their experiences with these drivers, namely customer experience, perceived quality and perceived value. The NPS was also one of the questions in the survey.

The linear relations was then analysed by using MLR. The approach for the MLR is further discussed in chapter 4. Because of the different approaches, when it comes to empirical data gathering, for both the customer and Telavox interviews and the analysis approach the study combined both a qualitative (e.g. reasoning) and a quantitative (e.g. statistical) approach. Although the most common thing amongst case studies is a qualitative approach it is not unheard of to combine both qualitative and quantitative data. In fact, a study focusing on both can result in

deeper insights into the chosen field of research. A quantitative analysis can reveal patterns that are not exposed to the researcher otherwise and the qualitative data can help make sense of findings from a quantitative approach (Eisenhardt, 1989). This gave depth to the model when it was derived from customer and employee experiences and reassured a correlation when it came to the statistical analysis.

4.2 Data collection

When Yin (2003) discusses collection of evidence in a case study he covers six primary areas that are the most commonly used. These are:

- Documentation
- Archival records
- Interviews
- Direct observations
- Participant observations
- Physical artefacts

These are in no way exhaustive but are considered to be the most common ones. During the data collection for the qualitative and quantitative parts of the thesis multiple sources was therefore used in order to ensure validity in the process and in the results (Yin, 2003). It is stressed by Saunders, Lewis and Thornhill (2009) that the use of triangulation when conducting a case study could improve the accuracy of the content. The qualitative research later laid the foundation for the model to be accurately calibrated with the results from the quantitative findings. As is further discussed in chapter of content analysis methods.

4.2.1 Interviews

Interviews are, according to (Yin, 2003), one of the most important sources of information in a case study. And, throughout the data collection the interviews where the covered area that generated the most material when it came to structuring possible drivers and mapping the drivers for customer loyalty. Hence, both interviews internally with Telavox, as well as externally with customers, where conducted in order to get the perspective from both sides. The interviews laid the foundation for the qualitative part of the study.

The interview sampling had different approaches when it came to the Telavox interviews and the customer interviews. The Telavox interviews were chosen via a snowball sample, which is a type of convenience sample where the researchers make an initial contact and thereafter uses the initial contact to establish new contacts to interview (Ibid). This became the best alternative given that Telavox is a relatively small company and therefore created the opportunity to talk to all different divisions. Through a snowball sample it was therefore easier get in contact

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with people that had both time to talk and a good overview of what their division does and how it affects the customer. This gave good insights into the customer experience from initial sales to daily maintenance and/or possible termination of services.

The sample for customer interviews were made to accurately reflect the entire customer population in order to ensure all different customer opinions on satisfaction were taken into consideration when building the model. After meetings with the market division at Telavox to discuss customer segmentation it was agreed that two segmentations should be used. The first and most relevant segmentation amongst Telavox customers was:

- Users (e.g. daily users of the product)
- Administrators (e.g. responsible for purchasing and daily operations)

The second segmentation was number of subscriptions. Depending on how many subscriptions a customer has the perceived drivers of satisfaction can appear widely differently. The customers were divided into three segments as can be seen in table 1, based on the recommendation from European Union about the classification of small and medium sized enterprises (Tillväxtverket, 2015), to accurately capture Telavox current customer base:

Table 1 - Classification of enterprise size

Label	Subscriptions	Percentage of Telavox customers
Micro companies	< 10	60%
Small companies	10 - 49	30%
Middle sized/big companies	50 +	10%

Other factors were discussed and dismissed. For example customer industry where considered too fragmented to get any real segmentation out of and geographic location where dismissed since relevant factors, regarding network operation, for this segment where out of Telavox control (the telecom network is owned and operated by Telia).

Ten interviews with different people from different departments within Telavox were conducted. And nine interviews with different companies divided evenly between the different segments were also conducted. All interviews were conducted in-depth in a semi-structured manner. This created the possibility to ask further questions to reassure that the question got a significant reply (Bryman & Bell, 2011). In the case of the interviews at Telavox it gave the opportunity to really understand the employee's role; the impact that the employee's department has on the customer experience and of course that the employee itself understands the link between their work and the customer experience. For the customer interviews it

gave a depth to the answers that would not have been possible otherwise. Customers were given the possibility to elaborate on perceived experience and reveal key elements of satisfaction that are crucial for the received service.

The interviews all followed the same guide; see Appendix 1 for customer interviews and Appendix 2 for Telavox interviews. They were used to make sure that every important area was covered during the interview but gave room for follow up questions to ensure validity in the answer. All interviews started with an introduction of the project and general questions regarding who the interviewee is and their experiences with the customer or service. After covering the areas of interest the interviewee (both at Telavox and their customers) had an opportunity to elaborate on what they believed was the key driver of loyalty. The interviews were held for about 30 minutes and the responses were recorded simultaneously during the interview.

4.2.2 Documentation

Just like interviews documentation is key for most case studies, and in this case a basis for the qualitative part of the study. Many of these documents tend to be biased caution should be exercised when handling them in a thesis (Yin, 2003). Many documents were reviewed throughout the data gathering process. However, these documents contained mostly mapping of customer segments, standardised customer interviews, data queries, sales protocol etc. These documents were deemed less likely to be biased in a way that would affect the thesis in a significant way since they were a reflection of certain aspects of the case with little room for personal interpretation. Furthermore, the documents were used when building the foundation for data gathering and not in the analysis.

4.2.3 Archival records

Yin (2003) describes archival data as, amongst other things, computer files and records. In the case of this thesis it is the customer database at Telavox. As Yin (2003) discusses the archival records for some studies can be the basis of a quantitative analysis because of the size and importance of the data. The archival records at Telavox contained customer specific information on all 90 000 customers. The data extracted from the database was matched against all surveyed customers to be measured in the analysis.

4.2.4 Survey

A survey was chosen because of several reasons. First of all, it is quicker and cheaper to administer than interviewing the adequate amount of customers. But there are also no interviewer effects on the respondent and no variability between different interviewers. Also, when the survey is kept short and easy to follow, the respondent will find it more convenient than a normal interview and response rates will increase (Bryman & Bell, 2011). Thus, it was needed to receive the customer opinion on the

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drivers to be able to look at the relationship between them and the measurement variables and ultimately also the NPS, a survey was made.

In order to get the customers opinion on the different drivers of loyalty a survey was created for the quantitative part of the study. The questions in the survey presented in table 2 were made to include the drivers from the ACSI model and covered the three areas:

Table 2 - Questions used in the survey

Drivers	Question
Customer expectations	Telavox services live up to my expectations (scale 1-10)
Perceived quality	Telavox services are of high quality (scale 1-10)
Perceived value	Telavox services are good value (scale 1-10)
Net promoter score	How likely is it that you would recommend Telavox to a friend or colleague? (scale 0-10)

For every area the respondents answered one question that reflected the corresponding driver. The last question the respondent had to answer was the NPS question. This was done in order to set the final measurement to which the other questions would be weighed against.

Regarding this type of quantitative research there are usually three different aspects that need to be taken into consideration when conducting this type of survey (Ibid). These are the issues of:

- Standardisation
- Reproducibility
- Representativeness

When it comes to concerns regarding the standardisation of the survey the process need to be consistent in every aspect of the questionnaire, from the design to the analysis of the result. The questionnaire followed a set of basic questions designed to measure the customer's opinion on customer expectations, perceived quality, perceived value and the NPS. The survey was made by following (Bryman & Bell, 2011) and the approach they present on how to create an effective questionnaire.

The survey was made to enable reproducibility. Since customer preferences might change over time, due to a changing customer base or product range for example, the aim was to create a process that could be done multiple times by Telavox to ensure that the model would always take into account the current customer preferences.

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Lastly, the result from the survey should always represent the existing population. Since a survey is created to draw conclusions from a bigger population it is important that the chosen sample represents that population.

The population in a case study consists of the total possible amount of people from which a sample can be taken. The sample is the segment of the population that is being investigated (Bryman & Bell, 2011). As mentioned earlier the Telavox customer base consists of three types of customers; wholesale, agent and direct. Due to the fact that Telavox does not have any contact with the end user amongst the wholesale customers these were ruled out of the case study. Also to accurately measure the satisfaction with the Telavox services only customers using their main services were sampled. That resulted in a population of Centrex and Mobile Centrex focused customers.

When the sampling was made a stratified random sampling strategy was used. This means that a fraction of each segment, corresponding to the relative size of each group, became the targeted amount within that segment (Bryman & Bell, 2011). The segmentation for the survey was the same as the segmentation for customer interviews. Hence, a breakdown between administrators and users as well as customer size was made. The total sample consisted of 2 000 people equally divided between users and administrators, and followed approximately the segmentation of customer size used in the interviews. When it came to adequate size of respondents (Hill et al., 2003) was applied where it is discussed that an adequate response of any population, when it comes to customer satisfaction/loyalty surveys, are around 200 answers with at least a sample of 50 within each segment.

4.3 Method of analysis

The analysis was done through multiple linear regressions using the analysis Toolpak in Excel. When making a prediction, or forecasting, or reduction, MLR can be used to fit a predictive model to an observed data set of the dependent variable Y and explanatory variables $x_1 \dots x_i$. After developing a model, if the values of $x_1 \dots x_i$ are known without its accompanying value of Y , the fitted model can be used to make a prediction of the value of Y . (Freedman, 2009)

In order to answer the research questions the analysis was divided in two parts, "Relationship 1" and "Relationship 2", as shown in figure 4.

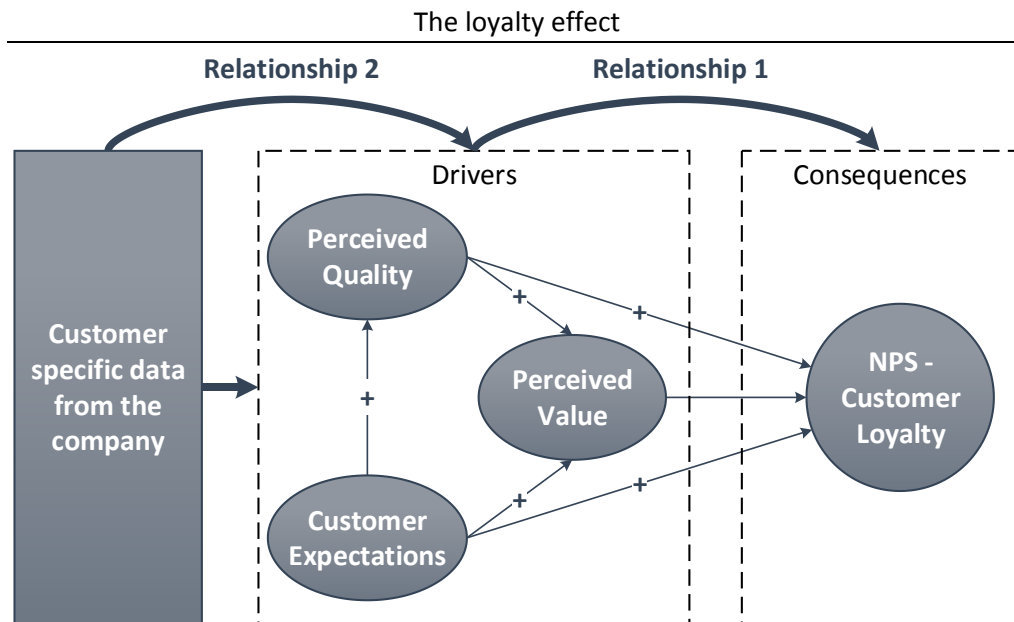


Figure 4 - The relationships investigated in the thesis.

Relationship 1

To establish the relationship between NPS and the drivers of ACSI the following was done:

- Multiple linear regression with NPS as the dependent variable Y and the drivers of ACSI; customer expectations, perceived quality and perceived value as explanatory variables denoted X. This is described in detail in chapter 6.

Relationship 2

To establish the relationship between the customer-specific data and drivers of customer loyalty three steps were done:

- A multiple linear regression with customer expectations ratings from customers as the dependent variable Y and customer specific data as explanatory variables denoted X.
- A multiple linear regression with perceived quality ratings from customers as the dependent variable Y and customer specific data as explanatory variables denoted X.
- A multiple linear regression with perceived value ratings from customers as the dependent variable Y and customer specific data as explanatory variables denoted X.

The three steps are described in detail in chapter 6.

The formula for the multiple linear regression can be described as follows:

$$Y_1 = \beta_0 + \beta_1 \cdot x_1 + \beta_2 \cdot x_2 + \dots + \beta_i \cdot x_i + \varepsilon$$

Where, $i = 1, 2, \dots$,

$\beta =$ regression coefficients

$\beta_0 =$ y intercept of the line

To make sure that the resulting equation from the MLR is statistically significant the following three steps are examined.

1. Overall regression accuracy

The coefficient of determination, R Square, indicates how well data fit a statistical model. The closer R Square gets to 1, the better the regression line fits the data. If R Square equals 0,70, 70% of the variation in dependent variable Y is explained by the explanatory variables x (Freedman, 2009). While R Square indicates how well the data points fit a line, adjusted R Square does the same but adjusts for the number of variables in the model. When adding more and more useless variables to a model, adjusted R Square will decrease, and when adding useful variables, adjusted R Square will increase. Adjusted R Square will always be equal or less than R Square. (Statisticshowto, 2014)

2. Probability that the regression output is not random

Based on the F probability distribution, the significance F shows the probability that regression equation does not explain the variation in y. To make sure that the regression output is not by chance the Significance F should be lower than 0,10 (10 %), if not the correlation is not meaningful. The smaller the Significance F is the greater probability that the regression output is not by chance. (Ibid)

3. Confidence interval

The lower and upper confidence bounds for each coefficient should not contain zero, if it does there is not a statistically significant difference between the populations (Ibid).

4.4 Critical reflection

This study has elements of both a qualitative and a quantitative research hence the chapter will discuss the reliability and validity from both angles. The different aspects are seen as positive by many researchers since the qualitative research

compensates many of the weaknesses found in quantitative research and vice versa (Cooper & Schindler, 2014). Although, a bold statement in creating a model is made and therefore the critical reflection will be given a thorough walkthrough.

4.4.1 Reliability

The reliability of a quantitative study is concerning the consistency of the measurements. It entails three things all reliable measurements in a quantitative study should have (Bryman & Bell, 2011):

- Stability
- Internal reliability
- Consistency

The stability factor discusses whether or not a measure will be consistent over time. This especially refers to measurements related to the sample so that the results over time will not fluctuate and instead stay relevant. In the Telavox case the sample are made out of users and administrators as well as number of subscriptions per company. The current sample contains all possible customer groups with a focus on smaller customers, since Telavox have a focus on smaller businesses. This increases the stability since the sample structure will most likely remain stable. Furthermore, the model is intended to be tested on defecting customer once it has been tested on current ones, in order to ensure a stable model, by the test-retest method described by (Bryman & Bell, 2011).

Internal reliability discusses the difficulties of measurements being related to one another. When measurements are being aggregated to forming an overall score there can be difficulties in knowing that the individual measurement is measuring the same thing (ibid). This is taken into consideration through the qualitative study. By asking customer and employees about the drivers of loyalty the interviewee sets the frame for the measurement and make sure that they measure the same and intended things.

The last one, inter-observer consistency, discusses the problem when the researcher lacks consistency in the decisions made, with for example data categorisation (Ibid). The data is categorized through findings in theory where the ACSI model is in focus. The model entails a way of working that decreases the researchers' effect on the consistency.

Regarding the reliability for the qualitative part of the research there are two aspects that are important (LeCompte & Goetz, 1982):

- External reliability
- Internal reliability

The external reliability is usually a difficult criterion to meet in a qualitative study and regards whether or not a study can be replicated (Ibid). However, due to the fact that this study is supplemented with a quantitative approach, that generally is easier to replicate, it allows for easier replication of the process. The study also follows a very clear work method with its origin in the ACSI model and is therefore also easier to replicate. When discussing the internal reliability the concern regard similar difficulties as in the inter-observer consistency and is therefore taken into consideration in the same way (Ibid).

4.4.2 Validity

When discussing validity of the study there are a few things that need to be taken into consideration, regarding the quantitative part (Bryman & Bell, 2011):

- Face validity
- Concurrent validity
- Predictive validity
- Construct validity
- Convergent validity

Face validity concerns the issues of establishing that the measurement really measures the intended target. It can be established through talking to people with knowledge within that field (ibid). The qualitative interviews are conducted for that purpose and will decrease the risk of faulty measurements. Furthermore, the issue of concurrent validity, which is conducting a test that can prove correlation with a similar test from a reliable source to see that the data used is significant (Ibid). This is mended through the fact that all measurement in the study should have that type of relationship, the study builds upon it. The data that has been gathered through both questionnaires as well as documented questions from Telavox. The concurrent validity has been tested through those correlations. Predictive validity works in a similar way but is has concerns of predictive nature, how future measurements can correlate with what the researcher is trying to capture to see if the data is relevant (Ibid). In the study this will be done by looking at deflecting customers that previously has left Telavox as a service supplier this will be examined to see if there is any correlation with the concurrent measurements.

Construct validity involves the fact that the measurement should follow a certain hypotheses from some idea of how the world works to determine logical connections (Ibid). This is also something that has been done through the qualitative research. By conducting the interviews the interviewees have done those types of comparisons and established certain logical connections to work from. Finally, the convergent validity concerns how the data from the survey actually correlates the same data but with another way of gathering it (Ibid). This can be mended by

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studying the same problem but with different methods. The survey data has in this case been cross-referenced from actual customer behaviour (in terms of big data), interviews and documentation at Telavox to ensure that the different sources give the same answers.

The validity of a qualitative study regards, much like the reliability, is divided into two aspects (LeCompte & Goetz, 1982):

- Internal validity
- External validity

Firstly, the internal validity argues that there must be a connection between observations that the researcher does and the theoretical assumptions made from these (ibid). The range of interviews conducted with both employees and customers enabled the study to have a depth in the observations from all angles. This improves the internal validity from the study and increases the accuracy of the development of theoretical ideas.

Secondly, the external validity concerns the issues of generalizability. It raises questions about if the study is possible to generalize across different social settings and argues that in qualitative studies it is often a problem because researcher tends to conduct case study and use smaller samples (Ibid). This study is, as previously mentioned, a case study. However, the sample used to observe customer loyalty is comprehensive unlike many other qualitative studies and therefore somewhat increases the external validity.

4.4.3 Shortcomings of the method

As for reliability and validity, many shortcomings of a method are sprung out of using either a quantitative or qualitative approach. This can be mended by using a combination if the two when possible (Bryman & Bell, 2011). Even so, there are issues that have not yet been addressed in the method, primarily the choice of conducting a case study. The challenges of conducting a case study in this type of thesis are that all the data will be limited to one company. Not only does this possibly decrease the generalizability somewhat, but it could also potentially affect the data received. If the chosen case company is not able to deliver the data in accordance to what the model needs there might be difficulties in finding the right correlations. However, the case has been chosen because of the fact that Telavox store a lot of data on customer experiences and, furthermore, a case was chosen because otherwise it could be difficult to receive that type of customer sensitive data. The possibilities from doing a case study have been deemed to outweigh the challenges and that is why a study has been chosen.

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5 EMPIRICAL DATA

The upcoming chapter will follow the foundation of the previous mentioned theoretical approach and explain the qualitative part of the research. It will give insights into what customers and employees believe are adequate measurements of the three drivers of loyalty. The information here is both from interviews with customers and employees as well as documentation from Telavox regarding customer satisfaction and follow-up interviews. It will then describe the measurement variables that were derived from the qualitative part of the survey. All measurement variables discussed are the ones that were possible to measure in one way or the other, all others have not been discussed and do not appear in the list in table 3. And lastly, there is a brief walkthrough of the empirical data collected in the surveys.

5.1 The drivers of customer satisfaction

5.1.1 Customer expectations

Most customers know the meaning of a telecom service so during a purchase the customer will have an idea of what to expect when receiving that service. Therefore, the people who are involved in the sales, information and delivery parts of the customer experience will have a big role in raising/lowering and delivering according to those expectations (Employee A, 2015).

The salesperson will have a big impact on what the customer will expect from the sale and therefore also what they will experience when using the service. Each potential customer is approached with a meeting where a customized need analysis is made. The seller will then present a quotation during a second meeting. If this does not match the potential customers need it could be repeated until it does (Employee A, 2015). The importance for the seller to understand the business that they are trying to sell to is emphasised by one of their customers.

The contact with the seller was good throughout the process and we felt comfortable going into the purchase. The deficiencies with the call quality were something that we didn't notice until later. (Customer A, 2015).

The customer elaborates on the importance they felt of having a dialogue with the seller, it enabled them to have a good understanding of what they were about to come by and how it would fit their business. Most of Telavox customers have a similar experience with the seller, as can be seen in figure 5. The figure is a merger between two post sales questions. The filled and unfilled bars represent if the customer felt that they have received what the seller pitched during the sales meetings and the one to five scale represents the customer's grade on how they experienced the sales process.

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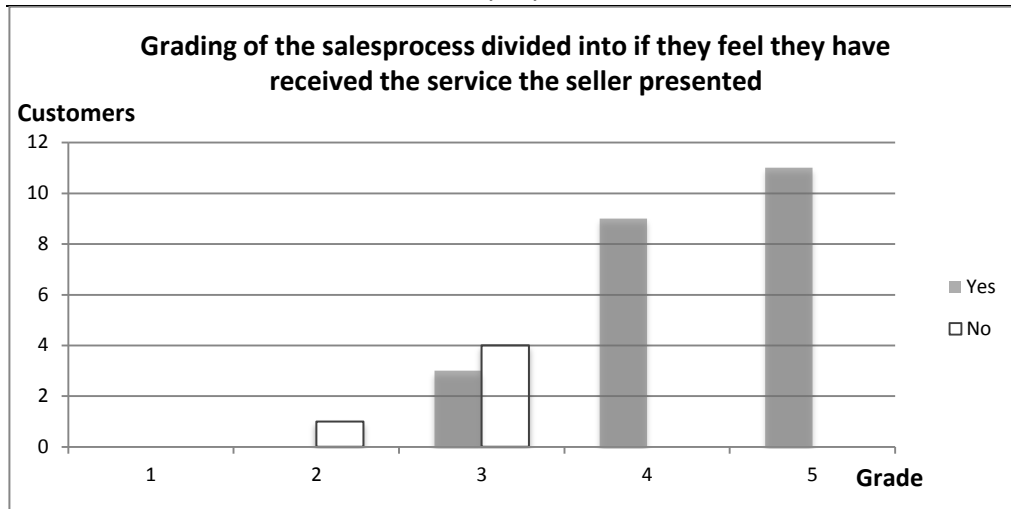


Figure 5 – Grading of the sales process and divided into if the customer feels they have received what the seller presented

82 % of the customers who had a follow-up after the sales process felt that they had received the service that the seller had presented to them. It is also these customers that gave the sales process a high rating. The customers that did not think that they had received what the seller had presented gave overall lower ratings on the sales process. Some of the comments left by the dissatisfied customers stress the importance of a good dialogue with the seller pre sale. The recurring issue is that the seller has not really understood their business or has painted a picture that lacks insight to the complexity of the customer's organisation. (Telavox, 2015b)

Another important aspect when discussing customer experience is the delivery of the service. The delivery follows directly after the sale has been made and a delivery date has been set. If the delivery cannot match what the seller has promised the customer expectations for the service will decrease.

We expect that the service is delivered as quickly and accurately as possible. (Employee B, 2015)

Besides having a swift and accurate delivery of the service, it is crucial that the delivery is made as fast as possible adjacent to the purchase. The delivery time is affected by the complexity of the customer's organisation and the quantity of services that are implemented. The longer the delivery, the more likely it is that the seller's original quotation has been altered (Employee B, 2015; Employee C, 2015). The customers that have not been satisfied with the delivery of the service have all of them complained on time delay because of different complications. However, as we can see from figure 6, most of Telavox customers are fairly happy with the delivery of the service as it reflects what they expected. (Telavox, 2015b)

The loyalty effect

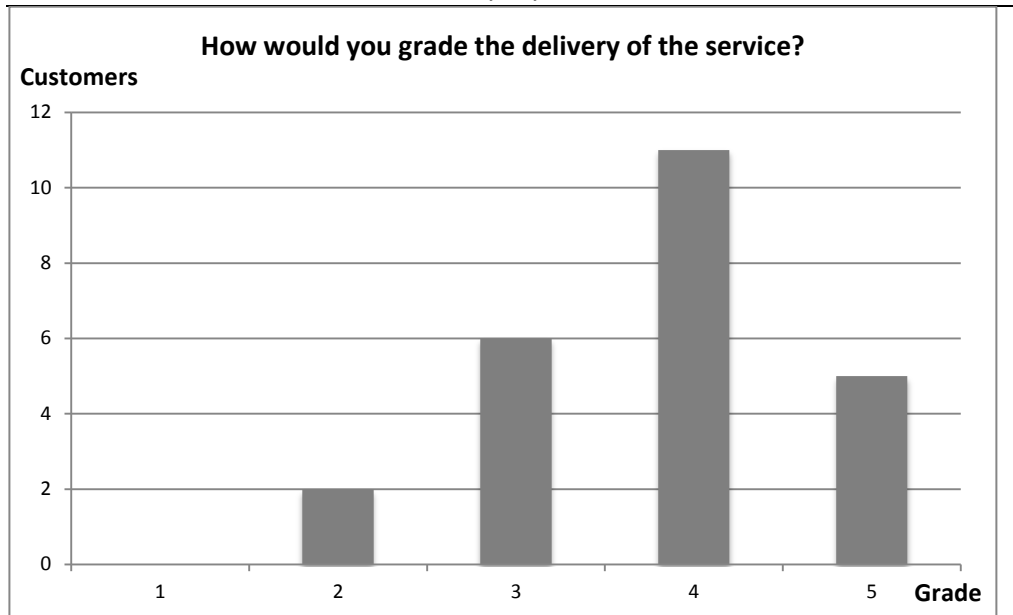


Figure 6 – Customer grades on the delivery of the service

The ability of customisation and making the service as personal as possible is another expectation that a customer might have pre purchase:

At Telavox we consider ourselves to be more of an IT-company than a regular telecom operator. We have a lot of web developers that continuously work on the applications associated with the service. (Employee D, 2015).

One customer felt strongly about the applications and the ability to customize it for their own personal use (Customer B, 2015). This was again, something that is induced by the seller. During the initial meetings with a potential customer the closeness to an IT-company and the ability to differentiate from competitors in an important sales pitch for the sales force and often something that is shown to the customer during these meetings (Employee A, 2015).

5.1.2 Perceived quality

The overall quality of the service is seen as good by the customers surveyed by Telavox, as can be seen by figure 7.

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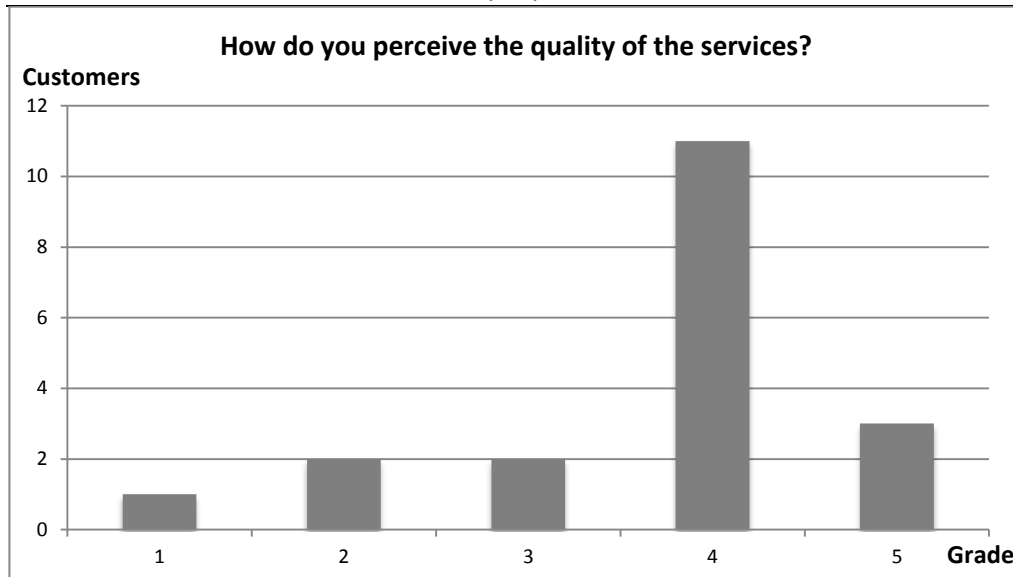


Figure 7 – Customer grades on service quality

Although customer perceived quality is high it should be noted that all customer questions asked by Telavox are in connection to the welcoming of a new customer. Hence, the customer has not used the service to any significant extent. The customers that have been unsatisfied with the quality in those interviews has mostly had troubles with the coverage when calling, something that is discussed later in this chapter (Telavox, 2015b).

The quality of the service is deemed by many customers to be the most important factor when discussing their satisfaction with the service (Customer A, 2015; Customer B, 2015; Customer D, 2015; Customer E, 2015). This reflects in the fact that many of the customers who terminate the service do so because of lacking service quality (Telavox, 2015b). The customers definition of quality usually centred around the coverage of the service and aspects associated to that (Customer A, 2015; Customer D, 2015; Customer E, 2015). Since the service is seen as a necessity for the organisation to work it is of grave importance that it works and that there is coverage everywhere the customer might go (Customer D, 2015).

The coverage is the most important thing for us. We should not have to think about it, it should just work, wherever we are. (Customer D, 2015)

There are even customers who use one or more additional service providers to ensure the best coverage throughout the country (Customer E, 2015). The importance of the coverage aspect is, however, something that is well known at Telavox. The fact that they still are a fairly small actor in the Swedish market raises questions regarding the coverage of the service and might be a factor for customers to choose one of the bigger or more established competitors in the market. Even though Telavox is currently operating on Telia's networks, which is the biggest actor

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on the Swedish market and has the biggest network for coverage all over Sweden, people are still inclined to choose Telia over Telavox since it represents a stability that is hard to match by a younger and smaller company. (Employee C, 2015).

Since Telia own the networks, the coverage of the service is something that is very hard for Telavox to have any say in. Thus, one of the most important quality aspects for the customers is hard to affect. This is an even bigger challenge since one of the most common issues that customers discuss when calling customer support services is related in some way to the geographical coverage (Employee E, 2015). The same goes for all types of disturbances on the networks affecting service quality or reliability. Since the functionality of the received service is considered to be a hygiene factor for the customers they will start calling customer support services when a disturbance arises and since Telavox does not own the networks there is not much they can do (Employee F, 2015). What makes the situation even more serious is that customers that terminate the service, because of quality deficiencies, are most often connected to the coverage and disturbances (Telavox, 2015b).

Customer support services are also seen as a big contributing factor to the perceived quality of the service. If the customers have to wait in line for too long or if their issues cannot be fixed they will question the company and the service. Telavox works with a maximum of two minutes for a customer to wait in line. However, the complexity of the problem determines how long the actual case time for a single customer will be (Employee G, 2015). Some of Telavox customers are not all fully satisfied with the help they have received from customer support services. They have experienced protracted cases and situations where they are unable to help with issues that customers found crucial for the service, such as coverage and disturbances (Customer E, 2015; Customer F, 2015). Although, some customers acknowledge the positive experience from the contact with customer services:

Every time I have been in contact with customer support services, over the phone, I have not had to wait long to get help. And when I have received help the issue has usually been resolved fairly quickly. (Customer G, 2015)

Although the same customer explains some protracted cases when contacting customer support services via email. Telavox, themselves, have a target of answering all incoming customer complaints via email within 24 hours from receiving the case from the customer. This is seen as very important since swift rectification of customer complaints tends to have a big impact on the customers perceived quality of the service as a whole (Employee G, 2015).

As discussed in the previous chapter Telavox sees the customisation as an important differentiation in regards to their competitors. They always try to keep in line or out-do the customer's expectations on their services. The customers usually have a lot of opinions on the applications that they use, both good and bad. The development

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department is constantly working to keep up with the customer's expectations. The difficulties are in improving the features that are not being used. (Employee D, 2015)

We do not get any feedback on the features that are not being used. This complicates the process of being in line with customer expectations and makes it more difficult to enable a more user-friendly feature that the customers want to use. (Employee D, 2015)

However, the same customer that had great expectations for the abilities of customization in the previous chapter felt that the application did not function in the same way as they had been told by the sales rep. Hence, they did not use it as often as they thought they would beforehand (Customer B, 2015).

5.1.3 Perceived value

Telavox consider themselves to be a quality competitor, hence their services cost a bit more than the market average. Bigger companies, such as Telia, are slightly lower in price for similar services but Telavox customers are still willing to pay more.

The customers are looking for quality and flexibility in their services and are willing to pay extra for it. The possibility to scale up or down, easy access to customer support services and constant application updates are what cost extra (Employee F, 2015).

At Telavox all services and upgrades are made in-house. All software has been built from the ground up which enables them to have full control over all services all the way from development to the market. This makes it easier for Telavox to find solutions for the customer's needs and help them when the services does not work the way they want it to (Employee D, 2015). Yet, the service is seen as easy to use by most customers and is appreciated for that attribute. The applications are made to simplify the everyday use for customer in a way that no other competitor does (Employee H, 2015).

The customers are aware of the premium price they pay but can also see the value that the service brings (Customer D, 2015). However, most of the customers are also inclined to debate why it should cost less (Customer A, 2015; Customer D, 2015; Customer E, 2015). Some of the customers have had troubles with the service, mostly regarding coverage, and since the coverage factor is such an important factor some believe that they should be accurately compensated for it (Customer A, 2015). Some customers question why they are paying for software and updates they do not use, and claim they, for example, usually just make regular phone calls instead of using the Telavox application (Customer A, 2015; Customer E, 2015). And, when it comes to reasons for service termination by former customers, the question of price is one of the most frequently used answers apart from quality issues. Many former customers feel that the price is too high compared to Telavox competitors or that it is too high compared to the quality of the service received. Many customers claim to

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have received the same service at another provider at a lower price (Telavox, 2015b).

However, the employees at Telavox have noticed that customers value the closeness of a smaller service supplier where it is easier to get help and make yourself heard. Most of Telavox customers are smaller businesses that might not be seen as significant customers at one of their competitors. Nevertheless, at a smaller service provider, such as Telavox, it is easier to be heard and receive the needed help all the way through the customer life cycle (Employee H, 2015). This is something that some of the customers also valued highly:

We have had a good contact with Telavox ever since we became customers. The understanding for our business has actually led to some service expansions for us. (Customer G, 2015)

The customer further discusses the fact of how the value they have perceived the service to have has triggered the purchasing of additional services when expanding their business. Since Telavox mostly is working with smaller companies this is something that they have seen as well. Companies that can see the value of the service and appreciate the closeness of their provider tend to add additional services or extend their subscriptions when the time comes (Employee F, 2015).

5.2 Measurement variables at Telavox

From the interviews with customers and employees as well as the customer documentations provided by Telavox it became evident that certain aspects of the different categories are more important to the customer experience than others. The interviews with the employees led to discussions about what could be used as measurement variables within the different category within each department. All measurement variables are explained here and summarized in table 3. The measurements that are noted with “calculated” or “from database” are because of observed irregularities in the database extractions. Hence, an alternative measurement was calculated in order to easier detect an eventual error in the data set.

Table 3 - Measurement variables extracted from Telavox's database

Latent variable	ASCI measurement variables	Telavox measurement variable	Unit
Customer expectations	Overall expectation of quality	Number of meetings before sign	Frequency
	Expectation regarding customisation	Average days between quotation and sign	Days
	Expectation regarding reliability	Average days between sign and delivery	Days
		Average days between delivery and first call	Days
Perceived quality	Overall evaluation of quality experience Evaluation of customisation experience Evaluation of reliability experience	Average call quality/duration	-
		Average packet loss	-
		Max packet loss	-
		Average days since last login	Days
		Number of profile picture changes	Frequency
		Average number of profile picture changes	Frequency/Subscriber
		Number of non standard profiles	Frequency
		Average number of non standard profiles	Frequency/Subscriber
		Number of mail interactions	Frequency
		Average number of mail interactions	Frequency/Subscriber
Total interaction time	Days		
Average interaction time (from database)	Days/Interaction		
Average interaction time (calculated)	Days/Interaction		
Perceived Value	Rating of quality given price Rating of price given quality	Number of desktop calls	Frequency during customer lifetime
		Average number of desktop calls	Frequency/Subscriber
		Average number of desktop calls/Month	Frequency/Month/Subscriber
		Number of invoices	Frequency during customer lifetime
		Total invoice amount	SEK during customer lifetime
		Average invoice amount (from database)	Month/Subscriber
		Average invoice amount (calculated)	SEK/Month
		Average invoice amount/Subscriber	SEK/Month/Subscriber
		Number of additional sales	Frequency during customer lifetime
		Total sum of additional sales	SEK/Customer lifetime
		Average sum of additional sales (from database)	SEK/Month
		Average sum of additional sales (calculated)	SEK/Month
Average sum of additional sales/Subscriber	SEK/Month/Subscriber		

5.2.1 Customer expectations

When assigning measurement variables to customer expectation, focus was on the different parts of the customer experience where expectations are set pre- and during the purchasing process. Since the customer expectations are only set before product use the measurements for this stage of the customer lifecycle are somewhat limited. Although, from the discussions with employees and customers there were several points where both parties feel that through the contact between company and customer expectations can be affected in one way or the other. These were focused all contact pre use for the customer. From the interviews it was established that the sales and delivery departments set most of the expectations during the customer's first interactions with the company. Hence, the measurements of the customer satisfaction were all in connection to these departments.

The number of meetings before signing a customer is where the seller makes the sale and sets the customers initial expectations for the service. As discussed in the interviews it is not unheard of that a customer's original quotation is altered in some way before sign. The longer the customer has to wait, the more time the expectation for the service has time to be altered. Once a customer has signed they are ready for delivery. Depending on the factors mentioned by employees at Telavox, the time between the signature and the delivery, can be impacted by complexity of the organisation and the quantity of services. The customers' expectations could possibly change a lot if the delivery does not live up to what was promised by the seller. Lastly, once a customer has gotten the service delivered, the last suspense and impact of expectations is before initial use, and hence the time has once again a big impact on customer expectations and were therefore measured.

5.2.2 Perceived quality

The perceived quality variables were chosen to evaluate the customer expectations variables post purchase with a focus on quality. They are all connected to the customer experience of the service and evaluate the customer's previous expectations of the service. Since Telavox does not own their own network they do not have any data in connection to how the network is used by customers. Hence, all activity in regards to the service can only be measured through the Telavox application. If packet loss occurs during a telephone call it is only when it is done through the application that Telavox is able to record the disturbances.

The login frequency shows the usage of the application; it is there the service differentiates from its competitors and where the customer can personalise the service to fit their own needs and how they run their business. When it comes to other measurements regarding customisation, non-standard profiles was used. The profile changes are one of the more interesting features for customers, as they can customise the profile to fit every activity in every moment of their workday (Employee, D).

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The number of mail interactions and interaction time are both measurements of customer complaints and reliability. Mail interactions are registered every time a customer emails a complaint to customer support services and the interaction time is the total time a customer is in contact with the support from the first call until the matter is solved.

5.2.3 Perceived value

The measurements regarding perceived value were connected to what the customer pays for quality. It was mentioned as a very important factor from the customers and the chosen measurements reflects that. Different customers and employees have, however, had different views on the value and the price aspect of it. Therefore, different views are represented in the price aspect in order to accurately reflect the latent variable.

The perceived value is, as mentioned before, price driven. This was something that the customers felt strongly about as well during the interviews. That is why an important measurement is the monthly fee that the customers pay for the service. This has been set in relation to a more frequently used feature; the use the company specific application when calling, to more accurately reflect the latent variable.

Another important measurement that was mentioned by both customers and employees was the fact that more sales could be an indicator of perceived value. Hence, it has been added to the measurements. Perceived value is meant to capture the price angle when used in the ACSI therefore is has been an important aspect of the measurements.

5.3 The Survey

As described before, the survey that was sent to Telavox customers covered four areas: customer expectations, perceived quality, perceived value and the NPS. The result was 211 unique answers from Telavox customers divided into the segments described in chapter 4.

The respondents were approximately 50/50 when it comes to administrators and users and follow roughly the same breakdown as described in the method. Each category has at least 50 respondents except for the category of 50+ subscribers.

The answers on customer expectations can be seen in figure 8. Most customers have a positive outlook on the customer expectations and that Telavox in most cases tend to live up to that expectation.

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Figure 8 - Survey responses on customer expectations

As for perceived quality the answers are somewhat similar to Telavox own customer poll. Although there is a wider spread in the answers as can be seen in figure 9. However, the overall perceived quality tends to be positive amongst the customers.

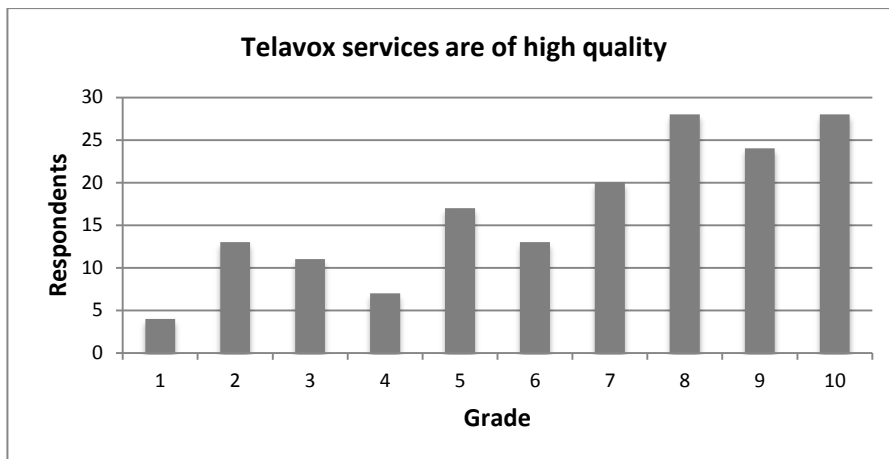


Figure 9 – Survey responses on perceived quality

The question of whether or not Telavox customers can see the value of Telavox services can be seen in figure 10. Overall the customers seem to experience that they receive good value for the money they pay, although, the answers tend to be slightly scattered.

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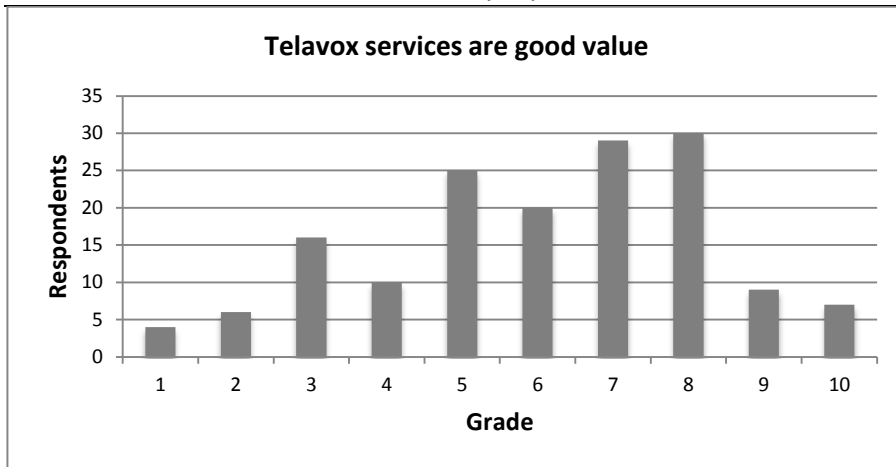


Figure 10 - Survey responses on perceived value

Lastly, there is the NPS shown in figure 11. Here the general likelihood of customers recommending the service to a friend or colleague.

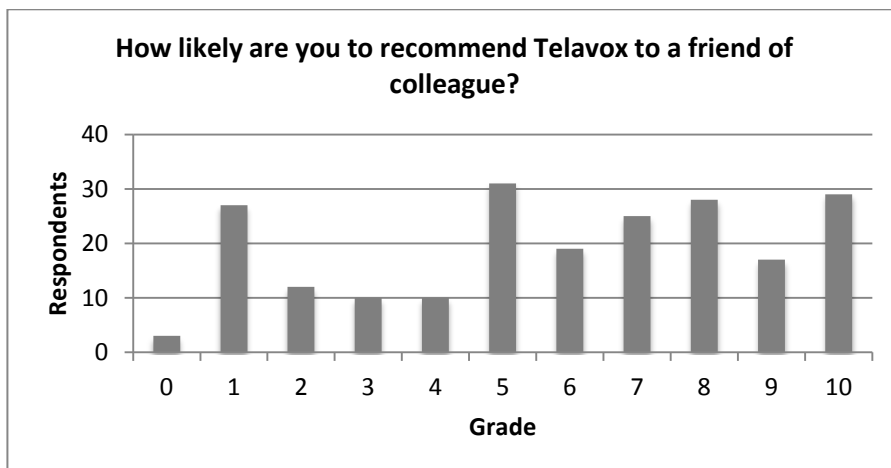


Figure 11 - Survey responses on the NPS

6 Result

In this chapter the model that was derived from theoretical and empirical studies will be analysed. There will be a presentation of statistical results regarding the interrelation between all data, measurement variables and drivers of customer loyalty, together with an analysis of the results. After the correlation analysis the result of the relationships in the customer loyalty model will be analysed.

6.1 The correlation matrix

During the work with the measurement variables and the data from Telavox a correlation matrix was created in order to examine at the relationship between the measurement variables and the drivers of customer loyalty. The matrix also shows the correlation between all the measurements in order to give a better picture of the quality of the data. The matrix can be seen table 4.

The correlation in the matrix ranges from 1 to -1. All correlations above 0,5 or below -0,5 can be seen as significantly high positive correlations or significantly high negative correlations (Freedman, 2009).

In the matrix there are some irregularities. For example it can be seen that the total sum of more sales per subscriber during a customer's lifetime correlates nearly perfectly to number of desktop calls. This is due to the issue of correlation and causality. Just because a measurement seems to have a good correlation with another does not mean that one thing causes the other. It does however describe a state of covariance. By, instead, looking at number of invoices and the customer lifetime it can be seen that there is also a high correlation. However, here is an obvious case of causality were the longer a customer stays with Telavox, the more invoices they will receive. The causality in these measurements should actually be even higher since they are a direct effect of each other, this indicates some irregularities in the received data.

The latter part can be considered a positive health check of the data that the most obvious measurements correlate with its counterpart so that construct validity seems to be in order. This shows that the lion's share of the data seems to be valid when measured against its counterpart. However, if both sets of data are faulty they might appear to be correct when correlated towards each other but against something else they would not. In that case these observations do not mean much.

When looking at the correlations between the measurements variables and the drivers it can be seen that the relationship is very weak and close to non-existing. Thus a single interrelation between each of them is very difficult to analyse. There are indications of logical connections between some of the measurements and drivers but the correlation is too weak to draw any real conclusions from.

If focus is instead shifted towards the relationship between the drivers and the NPS, as shown in table 5, it tells a different story. Significant correlations between all of the drivers and the NPS could be found which further indicates the possibility of a relationship between the drivers in the ACSI and the NPS. As the previous discussion of correlation and causality it could possibly raise questions that the correlations do not prove causality. Be that as it may, it has already been proven through the theoretical discussion of how the ACSI works and how it is driven by cause and effect. Being that the drivers in this case are the cause and the NPS is the effect the interrelation seems to be justifiable. This indicates that there is a relationship, which means that traceability might be possible.

Table 5 - Correlation matrix between the drivers of customer loyalty and NPS

	Customer expectations	Perceived quality	Perceived value	Net Promoter Score
Customer expectations	1,00			
Perceived quality	0,91	1,00		
Perceived value	0,71	0,68	1,00	
Net Promoter Score	0,87	0,89	0,60	1,00

6.2 Relationship analysis

In figure 12 the relationship analysis can be seen. Firstly, the relationship between the drivers of loyalty and the NPS will be tested and then the second relationship will be tested. In the second relationship all three drivers will be tested with the respective data from the empirical findings on customer specific data.

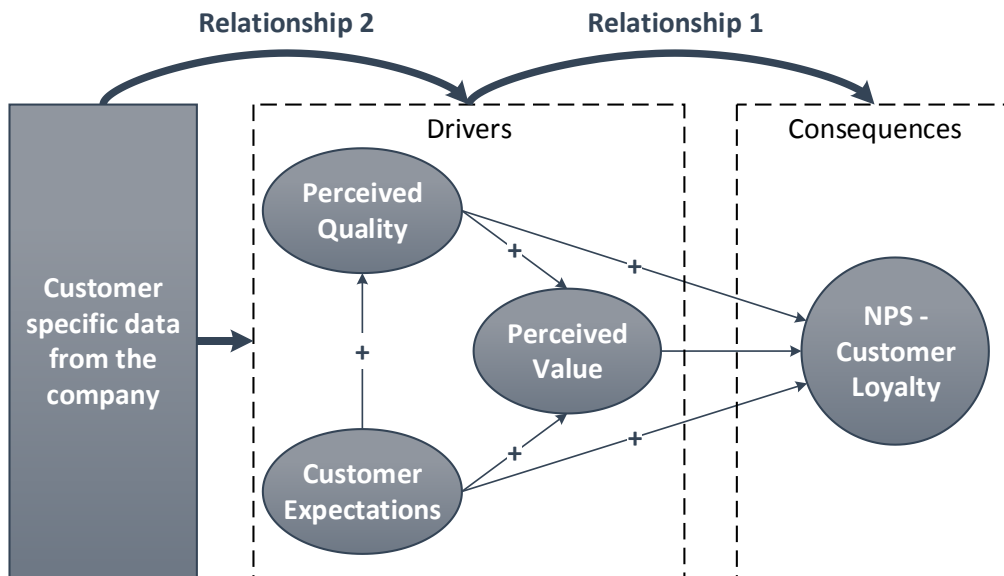


Figure 12 – The relationship model developed by the authors

6.2.1 The dependent and explanatory variables

Table 6 shows the dependent variable Y_1 and explanatory variables x_{1-3} for relationship 1 and table 7 shows the dependent variables Y_{2-4} and explanatory variables x_{4-33} for relationship 2.

Table 6 - Variables used in the MLR for relationship 1

Relationship 1	
Net Promoter Score	Y1
Customer expectations	x1
Perceived quality	x2
Perceived value	x3

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Table 7 - Variables used in the MLR for relationship 2

Relationship 2	
Customer expectations	Y2
<i>Measurement variables at Telavox</i>	
Number of meetings before sign	x4
Average days between quotation and sign	x5
Average days between sign and delivery	x6
Average days between delivery and first call	x7
Perceived quality	Y3
<i>Measurement variables at Telavox</i>	
Average days since last login	x8
Average call quality/duration	x9
Average packet loss	x10
Max packet loss	x11
Number of profile picture changes	x12
Average number of profile picture changes	x13
Number of non standard profiles	x14
Average number of non standard profiles	x15
Number of mail interactions	x16
Average number of mail interactions	x17
Total interaction time	x18
Average interaction time (from database)	x19
Average interaction time (calculated)	x20
Perceived value	Y4
<i>Measurement variables at Telavox</i>	
Number of desktop calls	x21
Average number of desktop calls	x22
Average number of desktop calls (månad)	x23
Number of additional sales	x24
Total sum of additional sales	x25
Average sum of additional sales (from database)	x26
Average sum of additional sales (calculated)	x27
Total sum of more sales/Subscribers/Customer lifetime	x28
Number of invoices	x29
Total invoice amount	x30
Average invoice amount (from database)	x31
Average invoice amount (calculated)	x32
Total invoice amount/Number of invoices/Subscribers	x33

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6.2.2 Relationship 1

The result of the MLR is shown in table 8. The dependent variable Y_1 is the Net promoter score and the explanatory variables x_{1-3} are; customer expectations, perceived quality and perceived value.

Table 8 - MLR result with dependent variable NPS and explanatory variable CE, PQ and PV

<i>Regression Statistics</i>	
Multiple R	0,91
R Square	0,83
Adjusted R Square	0,82
Standard Error	1,29
Observations	88

<i>ANOVA</i>					
	<i>df</i>	<i>SS</i>	<i>MS</i>	<i>F</i>	<i>Significance F</i>
Regression	3	678,80	226,27	135,30	0,00
Residual	84	140,47	1,67		
Total	87	819,27			

	<i>Coefficients</i>	<i>Standard Error</i>	<i>t Stat</i>	<i>P-value</i>	<i>Lower 95%</i>	<i>Upper 95%</i>
Constant	- 0,67	0,42	- 1,59	0,11	- 1,52	0,17
Customer expectations	0,62	0,15	4,04	0,00	0,32	0,93
Perceived quality	0,60	0,13	4,62	0,00	0,34	0,86
Perceived value	- 0,12	0,10	- 1,28	0,20	- 0,31	0,07

From the MLR the equation yields:

$$Y = -0,67 + 0,62 * CE + 0,60 * PQ + 0,12 * PV \quad (1)$$

To make sure that equation (1) is statistically significant the following four steps are examined.

- 1. Overall regression accuracy**
R Square equals 0.83, which is a good fit. 83 % of the variation in NPS is explained by the explanatory variables CE, PQ, PV. Adjusted R Square equals 0.82 indicating that the variables chosen are relevant.
- 2. Probability that the regression output is not random**
The significance of F is 0.00, hence there is a 0 % chance that the output was obtained by random chance, thus there is no probability that the regression was obtained by chance.
- 3. Confidence interval**
The lower and upper 95 % confidence intervals for each coefficient should not contain zero. The confidence interval for the constant (-1.52, 0.17) and

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perceived value (-0.31, 0.07) contain zero and are therefore not statistically significant.

As a result perceived value was removed from the equation resulting in a new estimation shown in table 9.

Table 9 – MLR result with dependent variable NPS and explanatory variable CE and PQ

<i>Regression Statistics</i>						
Multiple R		0,91				
R Square		0,83				
Adjusted R Square		0,82				
Standard Error		1,30				
Observations		88				

<i>ANOVA</i>					
	<i>df</i>	<i>SS</i>	<i>MS</i>	<i>F</i>	<i>Significance F</i>
Regression	2	676,06	338,03	200,62	0,00
Residual	85	143,22	1,68		
Total	87	819,27			

	<i>Coefficients</i>	<i>Standard Error</i>	<i>t Stat</i>	<i>P-value</i>	<i>Lower 95%</i>	<i>Upper 95%</i>
Constant	- 0,91	0,38	- 2,39	0,02	- 1,67	0,15
Customer expectations	0,55	0,14	3,83	0,00	0,26	0,83
Perceived quality	0,60	0,13	4,57	0,00	0,34	0,86

1. Overall regression accuracy

R Square equals 0.83, which is a good fit. 83 % of the variation in NPS is explained by the explanatory variables CE and PQ. Adjusted R Square equals 0.82 indicating that the variables chosen are relevant.

2. Probability that the regression output is not random

The significance of F is 0.00, and there is only a 0 % chance that the output was obtained by random chance, hence there is no probability that the regression was obtained by chance.

3. Confidence interval

All of the coefficients have a confidence different from zero, hence, they are statistically significant.

The model yields

$$Y = -0,91 + 0,55 * CE + 0,6 * PQ \quad (2)$$

The result shows that a relationship between the NPS and the ACSI, as derived from the model, can be proven shown by equation 2. This indicates what drivers affect the customer loyalty and shows traceability in the NPS that was not previously found.

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It is noteworthy that the perceived value had low impact on customer loyalty. When conducting the first MLR with all three drivers the confidence interval excluded the perceived value driver as a non-significant measurement. The reasons for this could be many but there are some interesting insights that could be drawn from this. Telavox is not a low-price competitor; hence they do not attract customers by the low price for their service. Perceived value measured the price aspect of the drivers of loyalty and in this case it does not appear that Telavox customers have chosen their service supplier because of the price. Telavox customers occur to be loyal or disloyal regardless of the price.

The expectations and the quality seem to be real drivers of the NPS at Telavox. Since they are a quality competitor this seems to, firstly, have been expected from the customers and, secondly, they have either lived up to those expectations or not causing promoters or detractors in the NPS.

6.2.3 Relationship 2

For second relationship it was not possible to establish a relationship using customer specific data from case company Telavox and the drivers' perceived value, perceived quality and customer expectations as can be seen from table 10, 11 and 12.

Customer expectations

The result of the MLR is shown in table 10. A multiple linear regression with customer expectation ratings from customers as the dependent variable Y_2 and customer specific data as explanatory variables denoted x_{5-8}

Table 10 - MLR result with dependent variable CE and explanatory variable customer specific data

<i>Regression Statistics</i>						
Multiple R		0,14				
R Square		0,02				
Adjusted R Square	-	0,03				
Standard Error		2,20				
Observations		60				

ANOVA						
	<i>df</i>	<i>SS</i>	<i>MS</i>	<i>F</i>	<i>Significance F</i>	
Regression	3	5,67	1,89	0,39	0,76	
Residual	56	271,73	4,85			
Total	59	277,40				

	<i>Coefficients</i>	<i>Standard Error</i>	<i>t Stat</i>	<i>P-value</i>	<i>Lower 95%</i>	<i>Upper 95%</i>
Konstant	5,83	0,45	12,80	0,00	4,91	6,74
Number of meetings before sign	0,03	0,22	0,11	0,91	- 0,41	0,46
Average days between quotation and sign	0,00	0,01	0,17	0,86	- 0,02	0,02
Average days between sign and delivery	0,02	0,01	1,03	0,31	- 0,01	0,04

1. Overall regression accuracy

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R Square equals 0.02, which is a really bad fit. 2 % of the variation in customer expectations is explained by the measurement variables. Adjusted R Square equals -0.03 indicating that the variables chosen are not relevant.

2. Probability that the regression output is not random

The significance of F is 0.76, and there is a 76 % chance that the output was obtained by random chance.

3. Confidence interval

The confidence interval for the constant and all measurement variables contain zero and are therefore not statistically significant.

Perceived quality

The result of the MLR is shown in table 11. A multiple linear regression with perceived quality ratings from customers as the dependent variable Y_3 and customer specific data as explanatory variables denoted x_{9-21}

Table 11 - MLR result with dependent variable PQ and explanatory variable customer specific data

Regression Statistics	
Multiple R	0,99
R Square	0,99
Adjusted R Square	0,79
Standard Error	1,24
Observations	17

ANOVA						
	df	SS	MS	F	Significance F	
Regression	15	112,71	7,51	4,92	0,34	
Residual	1	1,53	1,53			
Total	16	114,24				

	Coefficients	Standard Error	t Stat	P-value	Lower 95%	Upper 95%
Konstant	9,28	2,68	3,47	0,18	- 24,72	43,27
Average call quality/duration	0,17	0,17	0,99	0,50	- 1,99	2,33
Average packet loss	1,06	0,55	1,92	0,31	- 5,95	8,07
Max packet loss	- 0,00	0,00	-1,04	0,49	- 0,01	0,01
Average days since last login	- 0,02	0,04	-0,43	0,74	- 0,53	0,50
Number of profile picture changes	0,04	0,36	0,12	0,93	- 4,50	4,58
Average number of profile picture changes	- 8,73	2,64	-3,30	0,19	- 42,33	24,87
Number of non standard profiles	- 1,26	0,68	-1,83	0,32	- 9,96	7,45
Average number of non standard profiles	- 0,14	0,52	-0,27	0,83	- 6,79	6,50
Number of mail interactions	- 0,98	0,21	-4,73	0,13	- 3,63	1,66
Average number of mail interactions	0,51	2,84	0,18	0,89	- 35,59	36,61
Total interaction time	0,00	0,00	4,80	0,13	- 0,00	0,00
Average interaction time (from database)	- 0,00	0,00	-0,48	0,71	- 0,00	0,00
Average interaction time (calculated)	- 0,00	0,00	-3,21	0,19	- 0,00	0,00
Number of desktop calls	0,00	0,00	0,93	0,52	- 0,02	0,03
Average number of desktop calls	- 0,01	0,01	-1,71	0,34	- 0,07	0,06

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1. Overall regression accuracy

R Square equals 0.99, which appears to be a good fit. 99 % of the variation in customer expectations is explained by the measurement variables. Adjusted R Square equals 0.79 indicating that the variables chosen are relevant.

2. Probability that the regression output is not random

The significance of F is 0.34, and there is a 34 % chance that the output was obtained by random chance.

3. Confidence interval

The confidence interval for the constant and all measurement variables contain zero and are therefore not statistically significant.

Perceived value

The result of the MLR is shown in table 12. A multiple linear regression with perceived value ratings from customers as the dependent variable Y_4 and customer specific data as explanatory variables denoted x_{22-34} .

Table 12 - MLR result with dependent variable PV and explanatory variable customer specific data

<i>Regression Statistics</i>						
Multiple R		0,39				
R Square		0,15				
Adjusted R Square	-	0,05				
Standard Error		1,99				
Observations		57				

ANOVA						
	<i>df</i>	<i>SS</i>	<i>MS</i>	<i>F</i>	<i>Significance F</i>	
Regression	11	32,55	2,96	0,74	0,69	
Residual	45	179,03	3,98			
Total	56	211,58				

	<i>Coefficients</i>	<i>Standard Error</i>	<i>t Stat</i>	<i>P-value</i>	<i>Lower 95%</i>	<i>Upper 95%</i>
Constant	5,70	0,73	7,85	0,00	4,24	7,16
Number of invoices	0,01	0,02	0,46	0,65	- 0,03	0,05
Total invoice amount	0,00	0,00	1,62	0,11	- 0,00	0,00
Average invoice amount (from database)	0,00	0,00	0,75	0,46	- 0,00	0,00
Average invoice amount (calculated)	- 0,00	0,00	-1,37	0,18	- 0,00	0,00
Total invoice amount/Number of invoices/Subscribers	0,00	0,00	0,63	0,53	- 0,00	0,00
Average number of desktop calls (month)	0,02	0,03	0,71	0,48	- 0,04	0,09
Number of additional sales	- 0,12	0,08	-1,50	0,14	- 0,29	0,04
Total sum of additional sales	0,00	0,00	0,67	0,51	- 0,00	0,00
Average sum of additional sales (from database)	0,00	0,00	2,17	0,04	0,00	0,00
Average sum of additional sales (calculated)	- 0,00	0,00	-2,14	0,04	- 0,00	0,00
Total sum of more sales/Subscribers/Customer lifetime	0,00	0,00	0,81	0,42	- 0,00	0,00

1. Overall regression accuracy

R Square equals 0.15, which is not a good fit. 15 % of the variation in customer expectations is explained by the measurement variables. Adjusted R Square equals -0.05 indicating that the variables chosen are not relevant.

2. Probability that the regression output is not random

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The significance of F is 0.69, and there is a 69 % chance that the output was obtained by random chance.

3. Confidence interval

The confidence interval for the constant and all measurement variables contain zero and are therefore not statistically significant.

As can be seen from the analysis of the second relationship there seems to be no or very few of the drivers that could be explained by the customer data. Unfortunately irregularities in the data reduced the number of data points i.e. observations that could be used in the MLR.

To summarize as can be seen in figure 13; in relationship 1 it was possible to prove a relationship. Although, it did not appear exactly as expected. Perceived value had an insignificant impact on the customer loyalty and was therefore removed from the relationship. In the second relationship the data could not explain the drivers of loyalty.

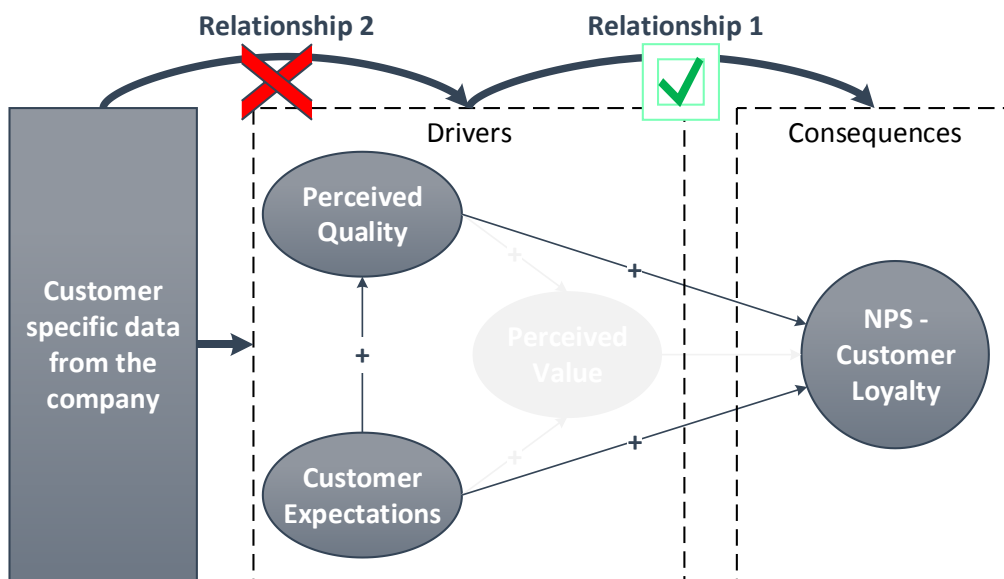


Figure 13 – Proven interrelations in the relationship model

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7 Discussion

The upcoming chapter will include further discussion for the result of the study. It will discuss the outcome of the result and what could have been done differently in order to avoid the shortcomings of the method and to improve the result that came out of it. Furthermore, the discussion will also concern potential shortcomings of the data from the case study. Lastly, it will also discuss the possibilities for future research within the topic.

7.1 Outcome

The analysis of the model showed clear signs of interrelations between the drivers of ACSI and the NPS. This shows that there are possibilities for a model that creates traceability to the NPS. In light of this there are questions regarding the findings of the approach and the model. Especially since the model could not be fully proven and validated.

When looking at the reliability of the results the methodology accurately describes the chain of events that was carried out in order to ensure reliability. The interviews, categorisation, the work path etc. were all conducted in the way that answers to the level of reliability expected of this type of study. When looking at the validity it tells a similar story, there seem to be no major issues that resulted in the lack of correlation between the data and the drivers. However, there are some other aspects of the results that are interesting to look at in order to troubleshoot the methodology and give recommendation for future research:

- The validity of the data
- The case study approach
- Customer behaviour

Firstly, there is the validity of the data. Note that the discussion is regarding the data and not the measurements as discussed in previous chapter. The data was a difficult part in conducting the study. As mentioned in chapter 6 there were complications regarding what data that was possible to receive. Due to the methodology, where the measurement variables needed to be established from interviews and documentation, before retrieving the data, there were no telling beforehand what data that was going to be needed to measure the drivers. Thus, there was no telling what data needed to be in Telavox database on customer behaviour. This resulted in several important measurements being removed and, when possible, replaced by other measurements that perhaps could assess the same drivers. This, of course, potentially decreased the accuracy of the measurements, which resulted in some poor correlations.

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Another difficulty was the state of the data. The data had many flaws that needed some attention. Some averages were higher the total sum, sometime measurements needed to be broken down in order to be used as a time reference etc. This created unreliability in the data. Furthermore, because the study focused on a specific customer segment it was important that the population in the database was sufficient for the study. From the sampling during the methodology work an adequate populations was established. However, during data extraction the lack of sufficient data on parts of population became evident and might have had some effects on the correlations and measurements during the further work with the model.

This discussion leads into the second aspect of the troubleshooting. From the start of the study it was established that the best approach would be a case study. The case study would enable access to data, access to employees and access to customers. All of which were crucial for the approach of the methodology. The case approach gave access to just those things, which otherwise would be difficult to come across since it usually is delicate information for a company. The backside of a case study is, however, that the study became very dependent on that data, customers and employees to be accurate. If a case study had been successfully carried out instead there would probably have been much more data, where the most accurate data could be chosen. That approach would also enable a wider generalizability of the results. Although, as mentioned before, there is no guarantee for any company to accept terms like those especially when other companies are involved. Hence, the case study approach was adopted. This was also something that was discussed and documented in chapter 4 and something that was a conscious choice when choosing a methodological path.

The third interesting thing to look at when discussing the outcome of the study is customer behaviour. It has previously been discussed that there are difficulties in measuring customer loyalty, regardless if it is in the traditional way or, as in this case, by using big data. The customer may say one thing is important but tends to react on another. By that logic it is a difficult task to draw conclusions from customers own ratings of their experiences. It is possible to come close to their real perception of a service but might be difficult to precisely reflect it. This methodology tried to follow the “do as I do, not do as I say” principle by tracking customer user experiences to the service instead of the customer’s own ratings. It was done in an attempt to come closer to the customer’s real perception of the service, however, the impact from the customers and employees along the process could have had the discussed effect on the selection of data. The idea anyhow is still feasible but future researchers should bear in mind the notion that an open yet interpreting mind-set should be in place when conducting this type of study.

7.2 Shortcomings of the data

The low correlation in the matrix between the measurement variables and the drivers, seen in table 4, raises questions about why that came to be. There are three factors that stand out as suspects regarding the cause for the low correlation. Firstly, there are the customer grades on the drivers of loyalty. When asking the customers to grade their thoughts on perceived quality, perceived value and customer expectations, there is a chance that they have interpreted the question in a way that they have answered in line with some other perception of the issue, the potentially ambiguous questions would then be the cause of the low correlation. It is also possible that the one question approach was too wide to correlate to the measurement variables. Even though this might be partially true it can be seen from the correlations in table 5, as previously discussed that the drivers correlate significantly against the NPS. This indicates the relationship between the drivers and the consequences that is also attested by the ACSI model, and implies that the questions have been answered in a way that the customers has understood what they were answering and answered correctly.

Secondly, there could be issues with the measurement variables. There is the possibility that these are not accurate enough to measure the real customer opinion on the drivers. The qualitative study was conducted to counteract that outcome. The interviews were conducted in order to generate as precise measurements as possible following both the customers and the employees' opinions on the drivers. Even so, it is possible that the measurements are not the exact reflection of true loyalty drivers rather than what the customers and employees at Telavox think are drivers.

Another factor that is related to the measurements is the fact that not all the data that was discussed was possible to receive due to case specific reasons, such as no access to network data or what activities to measure and what not to. This has meant disregarding some of the measurement variables that the customers regarded as important for the service.

Lastly, there is the possibility that some of the data is not accurate enough. Not all of the measurement variables that were of interest had been measured in a way that they needed for the study or, as previously mentioned, they were not measured at all. This highlights the difficulties in measurements of customer specific data and what to measure to accurately reflect customer loyalty.

7.3 Future research

Since one of the findings from the study was the fact that it was possible to demonstrate a link between the NPS and the ACSI it has opened up for many new research possibilities in testing the theories, both the NPS and the ACSI, to see

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drivers and how they behave from different stimuli and how companies can work with this to create loyalty amongst its customers.

On the other hand, since the study was not able to fully build a model that can show customer loyalty and create traceability that is one of the more urgent matters that are suggested for future research. The discussion in the thesis has focused on the parameters that played bigger parts in the outcome, the purpose of that is to guide future researchers to keep them in mind when choosing an approach to the study. It would be interesting to see it done by not using a case study. Both Fornell (1996) and Reichheld (2011) created the ACSI and the NPS with the data from several industries. This generated a cross-industry tool that can be compared over different types of companies and sectors. However, a potential study would have to take this into consideration together with the negatives of not conducting a case study.

8 Conclusions

In this chapter the research question will be presented again which will be followed by a brief conclusion of the findings.

- Is it possible to establish a linear relationship between the NPS and the ACSI?
- If so, is it possible to create a linear relationship between the ACSI and customer specific data to predict customer loyalty?

There is a statistically significant correlation between the ACSI and the NPS, hence a linear relationship was found. This was done through the derivation of a model that is established in the cause and effect relationship of the ACSI, where the drivers of ACSI resulted in customer loyalty measured by the NPS. The correlation between the drivers and the NPS indicates a theoretical finding in the sense that a breakdown of the NPS is possible and the relationship can be proven. Hence, the NPS drivers can be mapped and worked with in order to accurately drive loyalty.

During the analysis it was however found that the impact of perceived value on the customer loyalty was insignificant and therefore removed. A significant correlation was instead found between perceived quality and customer expectations. The correlation implies that it is possible to model the relationship as it was done and calculating the level of customer loyalty for a specific customer, given that the level of PQ and CE are known.

As for the chosen case company there also some implications from the results in relationship one. As a quality competitor perceived value, which is derived to account for price of the service, does not seem to have any significant impact on the customer loyalty or disloyalty. Perceived quality and customer expectations are instead the main drivers of customer loyalty.

As explained the drivers of the ACSI showed a connection to the NPS measurement in the chosen case study. As for generalisation, all companies working with the NPS could potentially use the drivers of the ACSI to break down their loyalty and to prioritise areas of focus when improving their NPS. This means, if needed, the follow-up questions that Reichheld discusses, in order to map drivers of loyalty, should target the ACSI antecedents. Even though this was not the aim of the study it is an important finding that aids businesses to break down loyalty and show areas of improvement.

As for the second examined relationship it was not possible to find a statistically significant linear relationship between customer specific data, at the case company

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Telavox, and the drivers' customer expectations, perceived quality and perceived value. Irregularities in the data reduced the number of data points that could be used in the MLR making it hard to draw any conclusions. Further, the difficulties with the data were something that the authors believed to be one of the major reasons for lack of significant relations. Hence, if further research will be done in the topic, the quality of the data is an important parameter for success.

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A. Appendix

A.1 Customer interviews

1. What telecom operator do you currently use?

Customer experience

2. What affected your expectation of the service (pre usage)?
3. What affected your expectation of the customisation (pre usage)?
4. What affected your expectation of reliability (pre usage)?

Perceived quality

5. What affects your perceived quality?
6. What affects your perceived customisation?
7. What affects your perceived reliability?

Perceived value

8. What affects your perceived quality given price?
9. What affects your perceived price given quality?

10. What are the main drivers of loyalty for you as a customer?
11. What would make you leave as a customer?

A.2 Employee interviews

1. Tell us about whom you are and what your position is?
2. What is your relationship to the customers?

Customer expectations

3. What do you think affects the customer's overall expectations of quality?
4. What do you think affects the customer's expectations for customisation of the service?
5. What do you think affects the customer's expectations of reliability?

Perceived quality

6. What do you think affect the customer's perceived quality?
7. What do you think affects the customer's perceived customisation?
8. What do you think affects the customer's perceived reliability?

Perceived value

9. What do you think affects the customer's perceived quality given price?
10. What do you think affects the customer's perceived price given quality?

Other

11. What do you think is a key driver of loyalty at Telavox?
12. What do you think is the biggest reason for customer deflection?
13. What, in connection to the questions we've just discussed, does your department measure?