MASTER

Key drivers of customer loyalty in a bank portal context

Atillaoglu, N.

Award date:
2007

Link to publication
Key drivers of customer loyalty
in a bank portal context

Master Thesis Industrial Engineering and Management Science
Faculty of Technology management
Department of Quality and Reliability Engineering
Eindhoven University of Technology

Author: N. Atillaoglu
Student number: s0508650
Date: November 15, 2007

Examination committee:

Prof. dr. Brombacher
Eindhoven University of Technology
Faculty of Industrial Design
Department of Business Process Design

dr. Chai Kah Hin
National University of Singapore
Faculty of Engineering
Department of Industrial Systems Engineering

dr. A. de Jong
Eindhoven University of Technology
Faculty of Technology Management
Department of Organization Science and Marketing
Acknowledgements

This master thesis on customer loyalty is the final work for completing my master study in Industrial Engineering and Management science. This thesis is a result of a year of hard work and challenges. It has given me the opportunity to feel and experience how much effort it really takes when being involved in a research project. This research project has helped me to grow both personally and academically. This thesis could not have been accomplished without the help of some important people. In this section I would like to express my gratitude towards these people.

A special thanks goes to my team of supervisors. I would like to thank Prof. dr. Brombacher for guiding and standing by to me through the whole process. I would like to thank dr. Chai Kah Hin, for giving me a second chance and always being available whenever I needed advice. Of course, I would also like to thank dr. A. de Jong, who supported me especially in the methodological part of my thesis.

I would like to thank J. Schepers for giving a demonstration of the PLS-software program. Furthermore, I would like to thank my research group from Singapore for supporting me and giving me the idea for my research project. Yu Dan, Foon Hing Wih, Chang Hongling, Xin Jan, Mu Shifeng, Shabnam, Xiao Yang and Xing Yu Feng. Last, but not least, I would like to thank my friends and my parents who have always supported during my study.
Abstract

A conceptual framework with hypotheses based on the cognitive-affective-conative loyalty framework by Oliver (1997) is proposed and tested in a bank portal context. Results showed that loyalty is directly affected by satisfaction and trust, which in turn are determined by perceived service quality. Moderating variables such as switching costs, reputation and duration of bank-customer relationship did not exert influence on the proposed framework.
Management summary

Internet has changed the relationship between customers and companies. Information on the Internet is instantaneous, customers are more demanding and the competition is only one mouse-click away. Therefore, creating a loyal customer base has become more important than ever. Many traditional well-known companies have extended customer loyalty to the online world in the form of a web portal. Few scholarly investigations have been done in customer loyalty to web portals.

This study attempts to find the key drivers of customer loyalty in a bank portal context. The study was executed in the Netherlands because of its high adoption rate. A research framework based on Oliver's cognitive-affective-conative loyalty framework, which was developed for an off-line environment, is tested for its relevance in a bank portal context.

The relevance of the research framework in a real-life context was tested in the form of interviews. Based on the interviews and literature items, constructs within the framework were developed to measure the direct and indirect relationships. The focus group of this study were 18-33 year olds with a higher education.

The construct validity was tested with exploratory and confirmatory factor analysis. Then, the relationships in the framework were tested with the PLS-method. The research framework appeared to be also valid in a bank portal context. Customer loyalty to a bank portal is driven by overall customer satisfaction and trust, which in turn are driven by perceived service quality. However, the moderating variables such as, duration membership bank, reputation and switching costs did not have any influence on the relationships within the research framework. The direct effects of the constructs value and their direct and indirect relations are presented in diagram 1.

Customer loyalty seemed to be strongly driven by cognitive responses, such as in this case perceived service quality. Therefore, it was also investigated whether cognitive responses would also lead to conative loyalty. The experimental model showed that perceived service quality also had a direct influence on customer loyalty. Though this effect was half as strong as the direct effect to trust and satisfaction. Therefore, it can be concluded that Oliver's model is still valid in a bank portal context. However, cognitive responses also lead directly to conative loyalty, instead of only through affective response in a bank portal context.

Diagram 1

Customer loyalty seemed to be strongly driven by cognitive responses, such as in this case perceived service quality. Therefore, it was also investigated whether cognitive responses would also lead to conative loyalty. The experimental model showed that perceived service quality also had a direct influence on customer loyalty. Though this effect was half as strong as the direct effect to trust and satisfaction. Therefore, it can be concluded that Oliver's model is still valid in a bank portal context. However, cognitive responses also lead directly to conative loyalty, instead of only through affective response in a bank portal context.
Chapter 1 Introduction

1.1 Research motivation

Internet has become an integral part of our daily live. In Europe 40% of the population of 15 years and older connect to the Internet at least once a month, whereas in the Netherlands this percentage is 83% (Comscore, 4 June 2007). The average usage a day per user per month is 19.5 days, and 61% of the Dutch population use Internet daily. Popular Internet activities in the Netherlands are e-mail, surfing, online banking, e-commerce, chat/msn, ad searching, downloading music and newsgroups (NSS, Feb 2006).

Internet contributes to a more transparent market. Information on the Internet is instantaneous and helps customers to become more aware about alternatives. Customers have higher expectations and the competition is only one mouse-click away. Therefore, creating a loyal customer base has become even more critical than ever to sustain their business in a fierce competitive market.

On the other hand, Internet also brings opportunities for businesses. Companies can reach to their customers, without establishing branches all over the world. The web portal in particular is a new trend, where companies offer a broad range of services and features at one single site to their clients. The customer no longer needs to make use of several different websites and can acquire needed information from simply one web portal, which creates the incentives for longer site visits (stickiness) during each use.

The relationship between customer and business clearly has changed. Competition is fiercer and businesses have less personal contact with their customers. Retaining customers has become more difficult, but more important for companies to survive. Web portals are for many traditional brick and wall companies a new way to extend customer loyalty on the Internet. Despite this, there have been very few scholarly investigations in the process of customer loyalty of former traditional brick and wall companies that have extended their services on the Internet in web portal format. This study attempts to give more understanding in that area.

1.2 Research goals and domain

Oliver (1997) views customer loyalty as a sequential process of cognitive, affective and conative responses. Oliver’s framework for customer loyalty is developed for an offline environment. This study tests whether this framework is also valid for web portals, thus in an online world.

Bank portals for the consumer market are chosen as subject to test this framework. Banks have managed to retain a solid position in the Dutch consumer market for decades. The bank portals have been active in the Netherlands since 2001 and have reached a high adoption rate of 69% (sync.nl, 20 September 2007). Therefore, it is now the most obvious and convenient communication channel for many customers to communicate with their bank. In addition, relationships between bank and customer have always been of long-term nature. These facts make bank portals a perfect candidate to use in this study. The main research question that this study attempts to answer is:

**What are the key drivers in customer loyalty to a bank portal?**

The role of customer perceived service quality, overall customer satisfaction and trust are investigated in this research question in particular.
1.3 Thesis structure

The structure of this thesis is similar to the sequence of how the research is done. Chapter 2 gives an overview of previous literature study in online banking, customer loyalty and web portals. Based on the literature study, research gaps are identified and research questions are formulated. Chapter 3 proposes a conceptual framework with hypotheses that will help to find an answer to the prior defined research questions. Chapter 4 first tests the relevance of the framework in the real world, and then designs a questionnaire based on qualitative and literature study. The results of the questionnaire are presented in Chapter 5. The discussion and conclusion of the results are demonstrated in chapter 6. In the final chapter 7 limitation of the study are demonstrated, and recommendations for banks and future research are presented.
Chapter 2 Literature study

2.1 Introduction

In this chapter a literature review of the process of customer loyalty and online banking is given. The goal of this chapter is to find research gaps and define research focuses and research questions that will be relevant for the understanding of the process of customer loyalty. The chapter ends with a research question that this study attempts to find an answer for.

2.2 Online banking in the consumer market

Researchers have investigated the concept of online banking recently due to their growing importance in the banking sector (Gerrard and Cunningham, 2003). Table 2.1 shows a brief review of empirically validated models in the context of online retail banking to illustrate the major issues that researchers have dealt with in the recent years.

<table>
<thead>
<tr>
<th>Author</th>
<th>Findings</th>
<th>Variables of empirical model</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sathye (1999)</td>
<td>Security concerns and lack of awareness about online banking and its benefits protruded as being obstacles to the adoption of online banking in Australia.</td>
<td>Endogenous variable: Online banking adoption&lt;br&gt;Exogenous variables: Security concern&lt;br&gt;Easy of use&lt;br&gt;Awareness of service and its benefits&lt;br&gt;Reasonable price&lt;br&gt;No resistance to change&lt;br&gt;Availability of infrastructure</td>
</tr>
<tr>
<td>Tan and Teo (2000)</td>
<td>Attitudinal factors as Internet experience, relative advantage of online banking, perceived risk, and perceived behavioral control predict the intention to adopt Internet banking services.</td>
<td>Endogenous variable: Intention to use online banking services&lt;br&gt;Exogenous variables: Attitudes&lt;br&gt;Subjective norms&lt;br&gt;Perceived behavior control</td>
</tr>
<tr>
<td>Karjaluoto (2002)</td>
<td>Reasons for consumers to choose online banking are: low fees, timesaving, user friendliness, speed, perceived security and freedom from time and place.</td>
<td>Endogenous variable: Attitude towards online banking&lt;br&gt;Online banking usage&lt;br&gt;Exogenous variables: Prior computer experience&lt;br&gt;Prior technological experience&lt;br&gt;Personal banking experience&lt;br&gt;Reference group influence</td>
</tr>
<tr>
<td>Reference</td>
<td>Endogenous variable</td>
<td>Exogenous variables</td>
</tr>
<tr>
<td>-----------</td>
<td>---------------------</td>
<td>---------------------</td>
</tr>
<tr>
<td>Mukherjee and Nath (2003)</td>
<td>Commitment, Trust</td>
<td>Communication, Opportunity</td>
</tr>
<tr>
<td>Rotchanakitumnuai and Speece (2004)</td>
<td>Internet Banking adoption</td>
<td>Web benefits (Information quality, Information accessibility, Information sharing, Transaction benefit), Web barriers (Organization barrier, Trust and Legal support)</td>
</tr>
<tr>
<td>Pikkaraine (2004)</td>
<td>Online banking use</td>
<td>Perceived usefulness, Perceived ease of use, Perceived enjoyment, Information on online banking, Security and Privacy, Quality of internet connection</td>
</tr>
<tr>
<td>Lasser et al (2005)</td>
<td>Online banking adoption</td>
<td>Consumer innovativeness, Personal characteristics</td>
</tr>
</tbody>
</table>

Table 2.1: overview empirically validated models in the context of online retail banking
Literature review shows that researchers have mainly focused on the adoption of online banking. Online banking was introduced in the Netherlands in 2001 and has now reached an adoption rate of 69% (sync.nl, 20 September 2007). The mainstream public in the Netherlands has already adopted online banking for years; therefore the focus of attention should shift from attracting to retaining customers to online banking.

The bank portal has become for customers the most obvious and frequent communication channel. As a result, the relationship between bank and customer has become more impersonal. Internet gives customers the ability to obtain and compare information of several competing services from banks, and select the one that suits most to its requirements (Peterson; Balasubramanian; Bronnenberg, 1997). As a consequence that the customer's switching costs have diminished, since the service of the competition is only one mouse-click away (Anton and Petouhoff, 2002).

Research gap and focus:

Research about online banking has been focused on the adoption of online banking. However, the consumer has adopted online banking for years in the Netherlands, thus research focus should shift from adoption to loyalty of online banking. A changed bank-customer relationship, a more transparent market and lower switching costs have changed the former concept of the process of customer loyalty before online banking. Therefore, this study is focused to investigate the process of customer loyalty in online banking services.

2.3 Online banking defined as bank portal

According to Bauer, and Hammerschmidt (2004) web portals have three characteristics, which will be described and applied to bank portals in this paragraph. First characteristic, is the integration principle. Portals are considered to be hybrid or integrative business models that integrate the four net business models of content, context, communication and commerce into one extensive business model, instead of exclusively focusing on one of them (Afuah and Tucci, 2001; Bauer and Hammerschmidt, 2002). They are innovative self-service technologies that offer one single access point to services, an almost unlimited content as well as applications and excellent retrieval facilities that makes "one-stop shopping" possible (Gounaris and Dimitriadis, 2003; Jun and Cai, 2001; van Riel et al., 2001).

In the case of bank portals in the Netherlands these definitions are valid. All phases of the financial transaction cycle (information provision, initiation, negotiation, execution/settlement, after sales support) are processed in one bank portal. The services that Bank portals offer in the Netherlands are:

1. Account enquiry
2. Online application
3. Time deposit
4. Electronic funds transfer locally and international
5. Credit card account enquiry
6. Fund transfer between a customer's own checking and savings accounts, or to another customer's account
7. Investment purchase or sale
8. Stop-payment requests
9. Loan applications, such as repayments
10. Investment in shares
11. iDEAL, immediately online transaction when buying something online
Thus, the bank portals transfer the "all in one" principle from the old economy – where it is implemented through brick-and-mortar branches – to the Internet (Bauer and Hammerschmidt, 2002; Jun and Cai, 2001).

A second characteristic of a web portal is to include services from third parties. Offering more available alternatives on one single website can reduce both opportunity costs and inconvenience costs due to virtual store hopping (Bergen et al., 1996). IDEAL is a good example of this characteristic. IDEAL is a Dutch concept that is offered by many Dutch websites or webstores in particular. It enables bank customers to pay their online purchase right away through their personal bank portal. This online paying method is a success due to the fact that it is more secure than the alternative online credit card payment. IDEAL enables bank customers to use their own bank portal to do online purchases and therefore do not have the need anymore to search for another provider that offers them more secure online payment than the credit card. Another good example is online trading. Bank customers are also able to open a separate trading account, in which they can do all of their online trading in the same bank portal.

The third characteristic that defines a portal is the capability of the customer to personalize it. This personalization enables the customer to build its own "personal virtual bank" and in line increases the consumer's sense of control over portal procedures and elements on top of the freedom of choice (Hoffman and Novak 1996). It allows the customer to decrease the number of choices, and is therefore able to diminish the time and costs of finding suitable offers. An example of a personalization of the bank portal is the personal online address book of bank accounts, which will save customer time when writing bills.

Another characteristic that a web portal has is that it knows two forms of interaction (Yang, Cai, Zhou Z. and Zhou N. 2005):

1. Between the customer and the portal employee via either Internet-based communication tools (e-mail) or traditional channels (mail, fax, and phone)
2. Between the customer and the portal

The most frequent and most used interaction is obvious the one with the bank portal. The other interaction is mainly in the form of e-mail. This interaction only used by customers who have a personal advisor or less frequently by customers who have questions that cannot be answered by the bank portal itself.

Conclusion: Online banking satisfies to all the characteristics of a portal and is therefore defined as a bank portal in this study.

2.4 Customer Loyalty

It has been widely argued that lasting customer relationships are advantageous for companies (Grönroos 2004). Researchers have found a positive relationship between customer loyalty and the organization's profitability (Hallowel 1996).

Several claims of how organizations profit from having a loyal customer base have been made. The costs of acquiring a new customer are asserted to be five times higher, than the costs of keeping an already acquired customer (Reichheld and Sasser, 1990). Reichel and Sasser (1990) demonstrated that decreasing the retention rate by only a few percentages can have a major impact on the level of profitability of a company. They claimed that doing business with continuing customers saves money on a variety of recruitment costs:

- costs of advertising to entice new customers;
- costs of personal selling pitch to new prospects;
- costs of setting up new accounts;
• costs of explaining business procedures to new clients; and
• cost of inefficient dealing during the customer’s learning process

Furthermore, it is claimed that customer loyalty can lead to price indifference, cross sales and resistance to competition (Barnes and Howlett, 1998), and it can raise employees’ morale and productivity (Lee and Cunningham 2001). Blattber and Deighton (1996, p 96) asserted that the value of loyalty can be estimated as “the total of the lifetime values of the firm’s current and future customers”. Hirschman (1970) argued that loyalty is a key determinant in the interaction between voice and exit: loyalty is shown to delay exit and to make voice more effective through the possibility of exit. The fact that a loyal customer is more probably to voice complaints instead of just changing supplier is what differs him or her from the others. These claims show that customer loyalty is undeniable significant for a company’s future, and therefore should always be worth striving.

New forms of online services offer new opportunities for customer retention on the Internet, while simultaneously increasing competition (Vatanasombut et al. 2004). Namely, in an online context, loyal customers have an inclination to recommend an online service provide to other people (Heskett et al. 1994). The referrals enlarge the customer base, and diminish the costs of attracting new customers (Reichheld 1996). They also help to diminish the company’s costs for providing help, cause they ask for advice and guidance from the loyal customers who recommended the service to them. In an even more competitive banking industry due to increased transparency, the bank’s more important goal should therefore be to increase the customer share (i.e. number of services used by each customer) and not the number of customers. Loyal customers are therefore perceived as a key factor in winning market share (Jarvis and Mayo, 1986) and developing sustainable competitive advantage (Kotler and Singh, 1981).

There are numerous definitions of loyalty known in the literature, namely:

• “Loyalty is considered a positive evaluation of, or a felt commitment to, an object— that is, a latent mental state, which is reflected in the behaviour towards the object”. (Mägi, 1999).
• “Loyalty is a deeply held commitment to re-buy or re-patronise a preferred product/service consistently in the future, thereby causing repetitive same brandset purchasing, despite situational influences and marketing efforts having the potential to cause switching behaviour” (Reicheld, 1996)
• “Loyalty is a kind of feeling of responsibility, agreement and obligation” (Reicheld, 1996).
• “Loyalty is a feeling of passionate support and exclusive allegiance” (Braun, 2002)
• “Loyalty is a prejudiced behavioural usage process that results from a psychological process” (Jacoby, 1971).
• “Loyalty is the preferential, attitudinal and behavioural response toward one or more brands in a product category expressed over a period of time by a consumer” (Engel and Blackwell, 1982).

Loyalty cannot be bought or forced on customers, and a person who is satisfied with the services offered by a company does not automatically become loyal (Reichheld, 1993). The process of retaining a customer starts when a customer has subscribed to a bank. Contentment with one service encounter will not be sufficient (Mittal and Lassar, 1998; Grönroos, 2000), in order to have a relationship with a customer, interaction between customer and the bank is required. A continuous dialogue and feedback to the customer’s
questions and complaints might lead to a sustained and stronger relation. When a customer feels satisfied by an experience and develops a positive attitude towards a bank, it might hopefully also lead to intentions of reusing its services.

Distinction of customer loyalty can be made between behavioural and attitudinal dimensions (Aaker, 1991; Jacoby and Chestnut, 1978; Oliver, 1999, 1973; Day, 1969; Dick and Basu, 1994). The behavioural dimension describes what customers actually do, and is often measured by the word of mouth or frequency of purchase (Dekimpe et al., 1997). The basis for all marketing relations is some form of exchange. In retail banking the signing of a contract is without doubt when the relationship officially begins, which could be considered the behavioural sign that a relationship has been formed. There are however also attitudinal aspects of when a relationship exists.

In the attitudinal dimension, loyalty is seen as an overall attachment to a product, service or organization (Fornier, 1994), and if their positive opinions are strengthened, these customers are inclined to buy a brand more often (Riley et al., 1997). In addition, Oliver (1999) suggested four rising brand-loyalty stages according to the cognition-affect-conation pattern. The first stage is cognitive loyalty. Customers are loyal to a brand based on their information on that brand. Next phase is affective loyalty, which applies to customer liking or positive attitudes towards a brand. Third step is conative loyalty or behavioral intention. This is a deeply held commitment to buy a “good intention”. This desire may result in not fulfilled action. The last stage is action loyalty, where customers convert intentions into actions. Customers at this stage endure action inertia, joined with a desire to overcome obstacles to make a purchase. Although action loyalty is ideal, it is difficult to observe and is often equally difficult to measure. As a compromise, in this study the conative or behavioural-intention measure are activated.

Many researcher advocate that customer loyalty must be measured as a combination of attitudinal and behavioural dimensions (Day, 1969; Dick and Basu, 1994; Zins, 2001). The disadvantage, of choosing only a behavioral or an attitudinal way of looking at loyalty will not necessarily cover all aspects. Behavioural loyalty can be false, as it needs attitude to not be dismissed as phony, and the attitudinal loyalty is only latent if it is not accompanied with action. Therefore, in this study is chosen to measure both dimensions. There have been some studies that investigated the customer loyalty in banking, these will briefly be discussed.

Floh and Treiblmaier (2006) investigated the importance of antecedents of online loyalty such as trust, quality of the Web site, quality of the service and overall satisfaction in a survey among Australian online banking customers. Satisfaction and trust were identified as important antecedents of loyalty. This study measured the quality of the online services not from a web portal perspective, but from a web site perspective. They measured the customer perceived service quality of the staff separately from the quality of the website. In a webportal, the perceived service quality of the portal’s personnel should be included, when measuring the perceived service quality of the web portal as a whole.

Nordman (2001) searched for factors that influence customer loyalty in a positive or negative way in retail banking. She identified three groups of customers. The devoted customer had an emotional relation to the bank. They wish to keep the relation, they tolerate mistakes, they are not interested in competitors offers and do not focus on price. The second group of customers show constraint-based loyalty, which means that they are passive and afraid of changing banks because it could be difficult or because they do not see any good alternatives. The third group is price-focused and they are active and prepared to thoroughly compare different alternatives. According to Nordman it is the personal contacts with the bank that make the relation deeper and therefore it is good to keep channels for personal interactions as a complement to internet.
Einarsson and Sjödin (2002), investigated if customers felt that their relation to the bank had changed after they started using the Internet. They found out that their respondents did not experience any difference in the relation to their bank after they started to use the service via Internet instead of branch banking.

Karlsoon and Klockhoff (2002) research showed that customers do not compare banks to get the best alternative, and even though many customers have thought about changing banks, only a few will actually go ahead and change. They concluded that the relation between smaller customers and the bank have weakened, while the relation between bigger customers and the bank have strengthened, when using today's ways of creating customer loyalty. This is in line with their. Theoretical framework that points out that satisfaction is an important factor in creating loyalty, but not as a sole factor.

Lewis and Soureli (2006) investigated the antecedents of consumer loyalty in retail banking in an offline environment. The research findings suggest that loyalty is the outcome of a cognitive rather than an affective process. The main antecedents of bank loyalty were found to be perceived value, perceived service quality, service attributes, satisfaction, image and trust: these constructs were interrelated and formed a network of loyalty antecedents.

Research gap and focus:

As is obvious, empirical research concerning customer loyalty in an online banking environment has been limited to only one study (Floh and Treiblmaier, 2006). However, this study did not view online banking as a webportal, but divided the bank portal perceived service quality into website quality and perceived service quality. Online banking has changed the bank-customer relationship. Former research about the process of customer loyalty in banking need to be re-investigated. The research focus of this study will be to reexamine the impact of important antecedents that were found significant in the process of customer loyalty in banking such as perceived service quality, customer satisfaction and trust (Lewis and Soureli, 2006). The next paragraphs will focus on a literature study of these antecedents.

2.5 Customer's perceived service quality

The concept of perceived service quality has previously been studied in different industries (e.g.; Chow Fischer and O'Bryan, 1995; Licata, Mowen and Chakraborty, 1995). Higher perceived service quality is positively related to higher market share and better returns (Buzzell and Gale, 1987; Philips, Chang and Buzzell, 1983) and leads to lower costs and higher profit margins (Garvin, 1984).

Parasuraman et al (1998), defined perceived service quality as a function of the capability to execute the promised service dependably and precisely. Bitner and Hubbert (1994, p.77) defined perceived service quality as the Customers' overall impression of the relative inferiority/superiority of the organization and its services.

The perceived quality of a service encounter has two dimensions: functional and technical (Grönroos,1990). The process and functional quality applies to 'how' the service is delivered, while the outcome or technical applies to 'what' customers receive and the advantages of using the service (van Riel et al., 2001). Speed of response, offer updates, site effectiveness and so forth, refers to the technical quality (Rust and Lemon, 2001). Interactive communication, personalisation of the communication and of the services, as well as new forms of customer access refers to the functional aspect of quality. The service package given to the customer must contain both technical and functional quality to be competitive.

Literature shows many methods for measuring perceived service quality. The most important ones will be briefly discussed. Parasuraman, Zeithaml and Berry (1988, 1991)
carried out extensive studies in various industries and created the SERVQUAL instrument: a 22-item scale with a set of perceived service quality dimensions to quantify a customer’s assessment of a company’s perceived service quality. The five key dimensions of perceived service quality are reliability, responsiveness, assurance, empathy and tangibles have been acknowledged and form the foundation on which many other studies on perceived service quality have been built. This method is widely acknowledged and used and is viewed as applicable to a number of industries, like the banking industry (Yavas, Bilgin, Shemueli, 1997).

Kano (1984) is a method for measuring customer-defined perceived service quality that proposes three basic quality demands which are significant for quality evaluation: basic demands, performance demands and enthusiasm demands. These demands are fulfilled by three types of performance elements. Basic performance are considered as obligatory (must-be services) and thus, not clearly voiced. Spoken attributes are voiced in a characteristic manner, while surprise attributes are seldom voiced (since they are unexpected) and can so, attain high levels of satisfaction in sense of excitement.

The service model of Berry (1987) and the penalty-reward-approach of Brand (1988) pursues a comparable reasoning, but proposes two general categories of service elements: minimum elements or routine services involve all factors and processes that involve demerits if the provider is unsuccessful to fulfill customer requirements. Value-improving services or non-routine-services enclose all elements that surpass customer expectations and are rewarded with bonus points.

A number of studies developed measurements suitable for judging the perceived service quality of bricks and mortar banks (e.g. Bahia and Nantel, 2000; Gerrard and Cunningham, 2001; Johnston, 1997; Lewis, 1989). These methods were based on past conceptualizations of perceived service quality. They were built to evaluate traditional services that were characterized by personal interaction between customer and employees. Therefore, they cannot adequately be applied for virtual environments, where customers interact with technology rather than with service personnel (Parasuraman and Grewal, 2000).

The rapid development of IT-based technology options urges for more research beyond the interpersonal dynamic of service encounters in this technology-oriented context (Meuter et al., 2000). In an online environment, perceived service quality is a key determinant in distinguishing service offers and building competitive benefits, since the costs of comparing alternatives are comparatively low (Grönroos 2000). Perceived service quality evidently determines the decision whether to use and stay loyal to an online service provider (Reibstein, 2002; Shankar et al., 2003). In addition, perceived service quality through web sites has turned out to be a more important success factor than low prices or being the first mover in the market space (Mahajan et al., 2002; Reibstein, 2002; Shankar et al., 2003).

The absent of direct human interaction in online channels involves the use of each service element as a chance to restrengthen or set up quality perceptions for customers (Broderick and Vachirapornpuk, 2002). It is argued that studies on perceived service quality and self-service technology with special relation to online banking are necessary. However, the growing role of technology in service delivery has been mainly disregarded (Bitner, Brown and Meuter, 2000), and mediocre research has been conducted on the issue of perceived service quality in the context of self-service technology (except Dahbolkar, 1996; Cheung, 2000; Kassim and Bojei, 2002; Kaynama, 2000; Dabholkar and Bagoozi, 2002), and in the field of online banking (Jun and Cai 2001; Gerrard and Cunningham, 2005; Bauer, Hammerschmidt and Falk 2004). The methods that researchers have develop for measuring perceived service quality in on online environment will be shorty reviewed in table 2.2.
<table>
<thead>
<tr>
<th>Author’s research focus and domain and findings</th>
<th>Measurement dimensions</th>
</tr>
</thead>
</table>
| **Yang, Peterson and Huang (2001)** measured consumer perceptions of perceived service quality applying six dimensions, in the Internet pharmacy context. | ease of use  
content displayed on the Web site  
accuracy of content  
timeliness of response  
aesthetics and privacy |
| However, this scale has not been empirically validated. | |
| **Lociacono, Watson and Goodhue (2000)** built a scale called WEBQUAL with twelve dimensions. | informational fit to task  
interaction  
trust  
response time  
design  
intuitiveness, visual appeal  
innovativeness  
flow  
integrated communications  
business processes  
substitutability |
| This approach appears to be more relevant to interface design than to perceived service quality measurement (Zeithaml et al., 2002). | |
| **Wolfinbarger and Gilly (2002)** based on ideas both from the perceived service quality and retailing literature developed a scale called .comQ with four factors. | Web site design  
reliability  
privacy/security  
customer service |
| They claimed that different dimensions of the measurement of e-SQ have different effects, and therefore different results. Reliability was discovered to be the most important indicator of customer satisfaction. | |
| **Zeithaml, Parasuraman and Malhotra (2000,2002)** built the e-SERVQUAL measurement of electronic perceived service quality to investigate how customers value e-perceived service quality. The fresh model is drawn up through a three-phase process including investigative focus groups and two phases of empirical data collection and analysis. It contains seven dimensions. The first four dimensions are grouped as the core service scale, and the latter three dimensions are viewed as a recovery scale, since they are only prominent when online customers have questions or problems. | core service scale:  
efficiency, reliability, fulfillment, privacy, responsiveness, recovery scale: compensation and contact |
| They were the first to defined website perceived service quality or e-perceived service quality as: “the extent to which a website facilitates efficient and effective shopping, purchasing, and delivery of products and services”. | |
Grönroos et al. (2000) proposed the model NetOffer, which is initially based on a case of Internet cinema ticketing. An e-service concept is proposed comprising of core services, facilitating services and supporting services.

<table>
<thead>
<tr>
<th>Measurement dimensions:</th>
</tr>
</thead>
<tbody>
<tr>
<td>First level:</td>
</tr>
<tr>
<td>core services</td>
</tr>
<tr>
<td>facilitating services</td>
</tr>
<tr>
<td>supporting services</td>
</tr>
<tr>
<td>Second level:</td>
</tr>
<tr>
<td>Communication</td>
</tr>
<tr>
<td>Participation</td>
</tr>
</tbody>
</table>

Information cuts through all level

Since it is often difficult to distinguish between facilitating and supporting services, van Riel et al. (2001) uses the term supplementary services in a more general way to symbolize services that are not part of, but closely related with core services. As a third category of services proposed through a web site, van Riel et al. (2001) introduces complementary services that are not facilitating nor supporting the core service. So, while complementary services add value to the core service and are used to distinguish them from similar competing offerings, complementary services have the possibility to add value to a portal in its completeness.

Table 2.2: methods that researchers have develop to measuring perceived service quality in on online environment

Research in the area of perceived service quality in the context of online banking will also be reviewed in table 2.3.

Jun and Cai (2001) gave some new understanding how the perceived service quality of an e-bank could be measured. Their study used data obtained by summarizing details of the internet service experiences of consumers, being put by consumers on the Bulletin board of the webpage of an US consulting firm. An analysis of the very positive and very negative online banking experiences identified 17 factors within three broad categories. Their results showed that regarding the frequency of references to the 17 dimensions no substantial differences exist between Internet-only banks and traditional banks offering Internet banking services. The most frequently mentioned dimensions, as the main sources of satisfaction or dissatisfaction were reliability, responsiveness, access, and accuracy. Some suggestions and recommendations were provided to improve the online banking perceived service quality and, in turn, customer satisfaction.

<table>
<thead>
<tr>
<th>Measurement dimensions:</th>
</tr>
</thead>
<tbody>
<tr>
<td>customer perceived service quality:</td>
</tr>
<tr>
<td>reliability,</td>
</tr>
<tr>
<td>responsiveness,</td>
</tr>
<tr>
<td>competence,</td>
</tr>
<tr>
<td>courtesy,</td>
</tr>
<tr>
<td>credibility,</td>
</tr>
<tr>
<td>access,</td>
</tr>
<tr>
<td>communication,</td>
</tr>
<tr>
<td>understanding the customer,</td>
</tr>
<tr>
<td>collaboration,</td>
</tr>
<tr>
<td>continuous improvement</td>
</tr>
</tbody>
</table>

online systems quality:
| contents, |
| accuracy, |
| ease of use, |
| timeliness, |
| aesthetics |
| security, |

Thirdly a single factor connected to product range and feature, that classify banking service product quality
Jayawardhena (2004) converts the original SERVQUAL scale to the internet context and builds a set of 21 items to estimate perceived service quality in online banking. Via exploratory (EFA) and confirmatory factor analysis (CFA), these 21 items are concentrated into five quality dimensions. Siu and Mou (2003) customized the dimensions of the e-SERVQUAL and tries to investigate customers' perceived service quality perceptions in Internet banking, and also the influence of these perceptions on customer satisfaction and future consumption intentions. The study was execute in Hong Kong.

Results showed that all dimensions except security were found to be important in determining overall perceived service quality perceptions. Credibility, problem handling and security have an significant impact on customer satisfaction. Security and efficiency were found to be significantly connected to future consumption behavior.

Gerrard and Cunningham (2005) built a model to measure the perceived service quality of online banking services based on the e-SERVQUAL model. They identified seven dimensions of which five were consistent with the e-SERVQUAL model and two were added due to being uniquely relevant for online banking customers. These factors were derived from a content analysis of comments made by

Broderick and Vachirapornpuk (2002) proposes and tests a perceived service quality model of online banking. They used participant observation and narrative analysis of a UK online banking Web Site community to investigate how online banking customers perceive and interpret the elements of the model. They identified five key elements that determine perceived service quality in an online environment.

Table 2.3: perceived service quality in the context of online banking

| Research gap: | The literature shows there have only been a few number of studies that measure the perceived service quality of online banking. Table 2.4 shows measurements models for perceived service quality for web portal, of which only one study is found in a banking context. |

<table>
<thead>
<tr>
<th>Measurement dimensions:</th>
<th>access</th>
</tr>
</thead>
<tbody>
<tr>
<td>Measurement dimensions:</td>
<td>web site interface</td>
</tr>
<tr>
<td>Measurement dimensions:</td>
<td>trust</td>
</tr>
<tr>
<td>Measurement dimensions:</td>
<td>attention</td>
</tr>
<tr>
<td>Measurement dimensions:</td>
<td>credibility</td>
</tr>
<tr>
<td>Measurement dimensions:</td>
<td>credibility</td>
</tr>
<tr>
<td>Measurement dimensions:</td>
<td>efficiency</td>
</tr>
<tr>
<td>Measurement dimensions:</td>
<td>problem handling</td>
</tr>
<tr>
<td>Measurement dimensions:</td>
<td>security</td>
</tr>
<tr>
<td>Measurement dimensions:</td>
<td>Consistent with e-SERVQUAL:</td>
</tr>
<tr>
<td>Measurement dimensions:</td>
<td>ease of use</td>
</tr>
<tr>
<td>Measurement dimensions:</td>
<td>service issues</td>
</tr>
<tr>
<td>Measurement dimensions:</td>
<td>reliability</td>
</tr>
<tr>
<td>Measurement dimensions:</td>
<td>security</td>
</tr>
<tr>
<td>Measurement dimensions:</td>
<td>responsiveness</td>
</tr>
<tr>
<td>Added dimensions:</td>
<td>appearances</td>
</tr>
<tr>
<td>Added dimensions:</td>
<td>staff qualities</td>
</tr>
<tr>
<td>Measurement dimensions:</td>
<td>customer expectations of online banking</td>
</tr>
<tr>
<td>Measurement dimensions:</td>
<td>corporate image and reputation</td>
</tr>
<tr>
<td>Measurement dimensions:</td>
<td>aspects of the service settings</td>
</tr>
<tr>
<td>Measurement dimensions:</td>
<td>the actual service encounter and of which customer participation had the greatest impact.</td>
</tr>
</tbody>
</table>
Gounaris and Dimitriadis (2003) measured the perceived service quality of a web portal based on SERVQUAL using three dimensions testing on the customer base of three Internet service providers in Greece. They also found out that the perception of perceived service quality does not diverge among different kind of user groups. This is due to the fact that Internet then, just entered the development phase in the Greek market, and the majority of the users were innovators, hence despite different demographic profile have comparable perceived service quality expectations and perceptions. When Internet is more integrated in society, it is more likely that the market for Web portals will become more segmented and consequently more heterogenous.

Yang, Cai, Zhou Z. and Zhou N. (2005) developed and validated an instrument to measure user perceived service quality of such portals. They identified five dimensions: usability, usefulness of content, adequacy of information, accessibility, interaction. However, this instrument was based on portals that functioned as a information presenting and communication enabling site for users. Online transaction were not the focus of these portals, though in online banking most people are using it to perform online transactions.

Bauer, Hammerschmidt and Faik (2004) based on an empirical study developed a model to measure the quality of online banking portals based on six dimensions. They found out that these dimensions can be classified into three service categories: core services, additional service and problem services. The study was executed in 2004 in Germany and is up until now the only country where it has been tested in. Nowadays, online banking is adopted more or less equally by both genders. However, the overall majority of the respondents (72,5%) were male.

| Table 2.4: Measurements models for perceived service quality for web portal |
| Research gap and focus: |

As literature shows, there has only been one study (Bauer, Hammerschmidt and Faik, 2004) that defined a construct to measure the perceived service quality of online banking taken from a portal perspective. The model that (Bauer, Hammerschmidt and Faik, 2004) shows seems too extensive and many items that are used to measure the construct seem irrelevant in the case of online banking in the Netherlands. Additional service and Problems service are not commonly used by the mainstream public. The research focus of this study will therefore be, to find dimensions that are relevant for the perceived service quality of bank portals in the Netherlands. Studies in online banking have focused to measure perceived service quality from a website perspective instead of a web portal perspective. It is important to see online banking services as a webportal, since according to Heinonen (2004) customers tend to avoid personal contacts with banking personnel when using online banking. Though the customer can enjoy both online and offline services, customers that use online banking have a
preference to handle their business as much online as possible. The bank portal has for
banks become a new communication channel that customers prefer to communicate with.

Therefore, delivering excellent perceived service quality online has become even
more important, since customers prefer to do their business online, and the transparency of
the market has made it easier for them to switch to other competitors. Therefore the
research focus of this study is to find how perceived service quality of bank portals where
personal contact is limited affect customer loyalty. This will show a better understanding how
the customer loyalty is formed when personal contact is limited and the competition is only
one mouse-click away.

2.6 Customer Satisfaction

Customer satisfaction is for most marketers and consumer researchers both an
important theoretical and practical issue (Dabholkar, 1996; Fournier and Mick, 1999; Meuter
et al., 2000). To be successful in the highly competitive world of business it is important to
satisfy the customer. The importance of customer satisfaction and customer retention when
designing a strategy for a "market oriented" and "customer focused" can therefore not be
undervalued (Kohli and Jaworski, 1990). As a result, customer satisfaction is more and
more changing into a corporate goal as more and more companies endeavor for quality in
their products and services (Bitner and Hubbert, 1994).

The various definitions that are given to customer satisfaction in the literature incline
to differ among each other (Szymanski and Henard, 2001). The most popular approaches
are either transaction-specific and cumulative/overall satisfaction. In both approaches the
definition of Oliver (1980): "the full meeting of one's expectations" is generally
acknowledged.

The transaction-specific approach defines customer satisfaction as an emotional
reaction by the consumer to the most recent transactional experience with an organization
(Oliver, 1993). The associated reaction happens at a particular time following consumption,
after the choice process has been finished. The affective reaction alters in intensity
depending upon the situational variables that are present.

The overall satisfaction approach refers to the cumulative experience based on an
affective component. Several authors have argued that satisfaction is based on the
customer's cumulative experience rather than being a transaction-specific phenomenon
(Anderson et al. 1994). Some authors (Cronin and Taylor; 1992; Parasuraman, Zeithaml, &
Berry, 1988) believe that overall satisfaction is the main function of perceived service quality,
and especially important in the context of the relationship between loyalty and satisfaction
(Homburg and Giering, 2001).

Research gap and focus:

There has only been one study that studied the customer satisfaction in the process
of customer loyalty in online banking (Yang, Peterson; 2004). Customer satisfaction was in
this study measured by the dimensions: customer services, order fulfillment, ease of use,
product portfolio and security and privacy. The dimensions that measure customer
satisfaction seem to better fit in the construct of perceived service quality, than in the
dimension of customer satisfaction. When a customer subscribes to use a bank portal, it will
use its services whenever a transaction needs to be done. Dissatisfaction with a single
transaction would not lead to customer switching, neither would one satisfying transaction
result in long-term loyalty. Therefore the research focus of this study will be to measure the
overall satisfaction of bank portals as a whole and not in terms of ease of use, security and
privacy etc. as in the case of Yang and Peterson (2004). These items are for example better measured for the construct of perceived service quality.

In addition, the role of overall customer satisfaction in customer loyalty to bank portals will be investigated and see whether it also directly leads to customer loyalty like it does in retail banking shown in the study of Lewis and Soureli (2006).

Knowing how customer overall satisfaction of the bank portal influence the loyalty of customer to its online service and the bank, helps to give a better understanding in how far satisfaction of its services is a determining factor for a customer to stay loyal to the service and its service providers. Knowing how important satisfaction is for a customer helps service providers to estimate how they can help their customers to be loyal to their service and business.

2.6 Customer trust

Trust is generally viewed as an essential ingredient for successful relationships (Berry 1995; Dwyer, Schurr, and Oh 1987; Morgan and Hunt 1994). It is consistently related to the vulnerability of the trustor (Bigley and Pearce, 1998; Singh and Sirdeshmukh, 2000), because without vulnerability of the trustor upon the trustee, trust becomes irrelevant. In business studies, trust has been found to be important for building and maintaining long-term relationships (e.g. Rousseau et al 1998; Singh and Sirdeshmukh, 2000).

Moorman, Deshpande, and Zaltman (1993, p. 82) define trust as “a willingness to rely on an exchange partner in whom one has confidence.” This definition is in accordance with early research, which associated trust with a “confidence in the other’s intention and motives”, a definition that still holds (Lewicki et al., 1998 p. 439).

Trust has three characteristics: ability, benevolence, and integrity (Mayer, Davis and Schoorman 1995; McKnight and Chervany 2002). Ability means that a trustor believes that a trustee has the power to do for him/her what he/she needs done. Benevolence is the extent to which a trustee is believed to want to do good to a trustor, aside from an egocentric profit motive. Integrity means that a trustor believes that a trustee makes good-faith agreements, tells the trust, acts ethically and fulfills promises. McKnight and Chervany (2002) presented one other characteristic, predictability. Mayer et al (1995) however, asserted that trust must go beyond predictability because one does not trust the other party who is highly predictable to ignore the needs of others and act in a self-interested fashion. In this study it is chosen to adapt the characteristics of trust by Mayet et al (1995).

The question of trust may be even more important in the internet banking environment than it is in the offline banking environment (Ratnasingham 1998). This is because the cultivation of trust is particularly important where uncertainty and risk are inherent and where contracts and warranties are often absent (Grazioli, 2000; L. A. Crosby, Evans and Cowles, 1990), while trust appears to be especially important for creating loyalty when the perceived level of risk is high (Anderson and Srinivasan, 2003). In the Internet environment, remote users in all corners of the world are allowed to access critical files on computers and information transferred via the Internet. Therefore, online banking is an inherently risky from the viewpoint of security.

Moreover, online banking is highly uncertain, because the parties involved in a transaction are not in the same place (Clarke, 1997). Customers cannot depend on things like physical proximity, handshakes and body signals of the teller. The absence of interpersonal interaction also suggest that online trust is mainly cognitive, i.e. based on consumers’ judgments of the reliability and capabilities of the merchant or the exchange channel, and not affective trust, i.e. founded on a bond among individuals (McAllister, 1995).
Inheritedly perceived risk and the absence of face-to-face interaction, challenges the bank to make customers feel that they can trust online banking services.

Mukherjee and Nath (2003) investigated the role of trust in an online banking environment. They found out that shared value is the most important role in developing trust as well as commitment. Communication had a moderate effect on trust, while opportunistic behavior had a significant negative effect. Furthermore, it was found that higher perceived trust enhances significantly customers' commitment in online banking transactions. The construct trust was defined as: perceived risk, reputation, and technology orientation. Technology orientation would not seem relevant in the case of online banking in the Netherlands, since it was introduced to the market years ago and has already reached a high adoption rate of 69% (sync.nl, 20 September 2007).

Research gap and focus:
Until so far, the role of trust in customer loyalty in online banking has been limited. This research is focused to define a construct that measures trust in the case of bank portals and to investigate what the role of trust is in the process of customer loyalty in a bank portal context. In an offline environment, trust had a positive influence on the loyalty of the customer to the bank (Lewis and Sourelis 2006). It would be interesting to see whether this relation still exists and is stronger or weaker than in the off-line environment.

2.7 Previous studies in the relationships between customer satisfaction, trust, perceived service quality and customer loyalty

In this paragraph a brief overview and discussion in Table 2.5 is given of former research about relationships between customer's satisfaction, trust, perceived service quality and customer loyalty.

| Floh and Treiblemaier (2006) investigated the moderating role of consumer characteristics on e-loyalty in the financial service industry in Australia. They found out that loyalty of online banking customer is directly affected by overall satisfaction and trust in an online bank, which in turn are determined by web site quality and perceived service quality. Web site quality had a direct and indirect impact on both satisfaction and trust. | Endogenous variable: Customer loyalty
Exogenous variables:
Overall satisfaction
Trust
Website quality
Perceived service quality

Critical point: Quality was divided in website quality and perceived service quality. Online banking was measured from a website perspective in the dimensions: design, structure and content. The service quality of online banking was measured by the following questions:

1. Electronic banking at Easybank has really pleased me.
2. I am very taken with easybank.
3. I am very satisfied with Easybank.
4. Easybank has done a good job for me so far.
5. It was a wise decision to carry out electronic banking at Easybank.

These questions do not measure the service quality of online banking, but seem rather to measure the satisfaction of online banking |
<table>
<thead>
<tr>
<th>Study</th>
<th>Endogenous variable:</th>
<th>Exogenous variables:</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Lee and Cunningham (2001)</strong></td>
<td>Service loyalty</td>
<td>Service quality, Economic costs, Switching costs</td>
</tr>
<tr>
<td>Investigated in bank and travel agencies, how various switching costs dimensions relate to customer loyalty. The study reveals that service loyalty is not only determined by perceived service quality, but also by cost considerations that arise from present transactions and future switching possibilities.</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Bejou and Palmer (1998)</strong></td>
<td>Customer satisfaction</td>
<td>Customer orientation, trust, length of relationship, expertise and ethics</td>
</tr>
<tr>
<td>Investigated the determinants of relationship satisfaction in the financial service sector. Trust was found to have a positive influence on relationship satisfaction.</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Mittal and Lassar (1998)</strong></td>
<td>Customer satisfaction</td>
<td>Customer orientation, trust, length of relationship, expertise and ethics</td>
</tr>
<tr>
<td>Researched how the type of perceived service quality (functional or technical) that is dominant in a certain industry (car or health care) influence satisfaction and loyalty.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>They did this by looking at whether the same factors influence loyalty as influence satisfaction. They confirmed that consumers &quot;who report a high satisfaction rating still possess a predisposition to switch service suppliers.&quot; And they also recognized that dissatisfied customer will definitely switch so customer satisfaction cannot be ignored. In addition, the &quot;type&quot; of quality affecting satisfaction differs from that affecting loyalty. If satisfaction follows from functional quality (empathy, responsiveness, assurance) then loyalty comes from technical quality (reliability). Similarly satisfaction derived from technical quality means loyalty results from functional quality.</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>McDougall and Levesque (2000)</strong></td>
<td>Customer loyalty</td>
<td>Customer satisfaction, Core perceived service quality, Relational perceived service quality, Perceived value</td>
</tr>
<tr>
<td>Investigated the relationship between three elements and customer satisfaction and loyalty intentions across four services (dental, auto service, restaurant and haircut).</td>
<td></td>
<td></td>
</tr>
<tr>
<td>The results revealed that core perceived service quality (the promise) and perceived value were the most important drivers of customer satisfaction with relational perceived service quality (the delivery) a significant but less important driver. A direct link between customer satisfaction and loyalty intentions was established.</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Zins (2001) investigated the antecedents of future customer loyalty in the commercial airline industry by applying structural models under four prototypical past loyalty conditions. These conditions are based on behavioural and situational descriptors and labelled in analogy to Day's compositional approach. **Endogenous variable:** Customer loyalty  
**Exogenous variables:**  
- Corporate image  
- Perceived service quality  
- Customer satisfaction

It is shown that the superiority of relative attitudes claimed by Dick and Basu cannot be confirmed. Corporate image of the service provider is, along with perceived service quality and customer satisfaction, a powerful and illustrative component for explaining future customer loyalty.

Ruyter, Wetzel and Bloemer (1998) found out that industry specific switching costs have a considerable effect on the relationship between perceived service quality and loyalty by investigating both in service industries with high (hospital) and low switching costs (fast food, amusement parks). **Endogenous variable:** Service loyalty  
- Preference loyalty  
- Price indifference loyalty  
- Dissatisfaction response  
**Exogenous variables:**  
- Perceived service quality  
- Switching costs

Bloemer, Ruyter en Poeters (1998) examined three antecedents of customer loyalty in a retail bank setting at the global construct level, as well as the level of construct dimensions. **Endogenous variable:** Customer loyalty  
**Exogenous variables:**  
- Image  
- Perceived service quality  
- Satisfaction

At global level it was found that image was related indirectly to bank loyalty and satisfaction via perceived quality. Perceived service quality was found to be both directly and indirectly related to bank loyalty via satisfaction. Customer satisfaction was also found to have a direct effect on bank loyalty. At the level of the dimensions underlying aforementioned constructs, it becomes clear that reliability (a quality dimension) and position in the market (an image dimension) are relatively important drivers of retail bank loyalty.

Nguyen and Leblanc (1998) proposed relationships among customer satisfaction, perceived service quality and their effect on corporate image and customer loyalty towards banks. **Endogenous variable:** Customer loyalty  
**Exogenous variables:**  
- Corporate image  
- Perceived value of service  
- Customer satisfaction  
- Perceived service quality
They found out that satisfaction and perceived service quality are positively related to value and that quality exerts a stronger influence on value than satisfaction. The findings also demonstrate that customers receiving higher levels of perceived service quality will form a favourable image of the banking institution. In addition, value is found to positively impact on image, suggesting that the banking institution should have a strong image when customers believe they are getting high value. Similarly, customer satisfaction and image perceptions are found to impact on service loyalty with satisfaction having a greater influence on loyalty than image.

<table>
<thead>
<tr>
<th>Lewis and Soureli (2006) investigated the antecedents of consumer loyalty in retail banking.</th>
</tr>
</thead>
</table>

They found out that loyalty is rather the outcome of a cognitive than an affective process, and its main antecedents were: perceived value, perceived service quality, service attributes, satisfaction, image and trust.

**Table 2.5:** Former research about relationships between customer’s satisfaction, trust, perceived service quality and customer loyalty.

**Research gap and focus:**

The results of all these previous studies provide evidence that, although the literature is rich in loyalty studies, there are contradictory finding and no overall conclusions with respect to the main loyalty antecedents can be made. There only have been few studies investigating customer loyalty in a retail banking context in both online and offline environment (Floh and Treibmaier, 2006; Jansson and Letmark M, 2005). Most papers in online banking have focused on the adoption of online banking, but since online banking is nowadays adapted by the majority of the bank’s customers, researchers and practitioners are now shifting to focus on retaining customers. In addition, the study that investigated the antecedents of online banking didn’t view its website as a web portal (Floh and Treibmaier, 2006), which is important since most customers prefer to do their business as much online as is possible.

This study will focus on the process of customer loyalty in online banking viewed as bank portal, and the roles of perceived service quality, trust, customer satisfaction play in this.
2.8 Conclusion and research questions

Literature study shows that only very few scholarly research can be found in the process of customer loyalty in web portals. This study will be focused on the case of bank portals. Only one literature has been found that studied the antecedents of customer loyalty in online banking not viewed as a whole bank portal, but as website (Floh and Treiblemaier, 2006). It is important to see online banking as a bank portal, since according to Kristina Heinonen (2004) customers tend to avoid personal contacts with banking personnel when using online banking. It is obvious that more research is needed in the key drivers in customer loyalty in bank portals. Therefore the following main research question can be formulated:

**What are the key drivers in customer loyalty to a bank portal?**

Former literature research has shown that perceived service quality, trust and customer satisfaction play a role in the process of customer loyalty. In this study it is investigated what role these antecedents play in the case of bank portals. An answer to this research question will contribute to the understanding in the process of customer loyalty in a traditional company that has extended its service to the online world in the form of a bank portal. Knowing what the influence of perceived service quality, overall customer satisfaction and trust in the process of customer loyalty can help service providers to adapt their customer loyalty strategy to the new situation.
Chapter 3 Conceptual framework and hypothesis

3.1 Introduction

In this chapter the theoretical framework for the process of customer loyalty to the bank portal is presented. The theoretical framework is based on the cognitive-affective-conative loyalty framework of Oliver (1997, 1999; see also, e.g., Chaudhuri and Holbrook 2001; Tailor and Banker 1994). The causal ordering of the construct reflects Oliver’s (1999) proposal that the “analysis needed to detect true brand loyalty requires researchers to assess consumer beliefs, affect and intention within the traditional consumer attitude structure” (p. 25).

The traditional attitude structure begins with cognitive loyalty, followed by affective loyalty, followed by conative loyalty. Cognitive loyalty is a weak form of loyalty and is based on the objective view of customer concerning the service. Affective loyalty is based on customers’ feeling of commitment to the service. This means that the customers have an attachment to the product that is based on more than cognition. Affective loyalty is a function of the customers’ affect-based attitudes to a product. Attitude to a product is based upon an established relationship between the customer and the product. If customers have positive attitudes to the product, they will develop an affective loyalty to the product. Affect is more deeply encoded in the customers mind than cognition, which is more subject to counterarguments (Oliver, 1997). Affective loyalty is therefore harder to expel than cognitive loyalty. Conative loyalty is defined as the customers’ behavioural intention to keep on using the brand in the future. This loyalty is stronger than both affecting and cognitive.

Oliver’s framework has been considered valid in the off-line world. This study investigates whether the validation of this framework is also extendable to the on-line world.

The constructs of the antecedents of customer loyalty are defined as followed:

1. Perceived service quality of a bank portal is a cognitive response of online banking at attribute level. In this research it is viewed as the perceived service quality of the bank portal itself solely. This is based according to Heinonen (2004) customers tend to avoid personal contacts with banking personnel when using bank portals, and prefer to do all of their communication with only the bank portal itself. Therefore, the perceived service quality of the bank portal at itself should be sufficient enough.

2. Trust is in this study defined as the perception of “confidence in the exchange of partner’s reliability and integrity.” (Morgan and Hunt 1994, p.23). Thus in this case, the confidence in the exchange of the bank portal’s reliability and bank’s integrity.

3. Overall satisfaction reflects the customers’ cumulative impression of a firm’s service performance (Parasuraman, Zeithaml and Berry 1994). Thus, the cumulative impression of the bank portal’s overall performance. Satisfaction is defined as “pleasurable fulfillment” (Oliver 1999, p.34) and an affective response in Oliver’s loyalty framework (Oliver 1999).

4. Customer loyalty responses, which are conative in nature, represent levels of commitment that customers have for the service provider. In this study, two customer loyalty responses are modelled, both of which were defined as “active loyalty behaviors” in Ganesh, Arnold, and Reynolds (2000): word of mouth (WOM) and traditional “loyalty” in the form of repurchase intentions, but in this case reuse intentions.
3.2 How does the perceived service quality of the bank portal influence customer overall satisfaction and trust in the bank portal?

In this study, it is proposed that perceived service quality of bank portals is an antecedent to the overall satisfaction of online banking services. Oliver (1999) and other researchers asserted that perceived service quality is cognitive and followed by satisfaction, which is an affective response. For example, using the framework of appraisal -> emotional response proposed by Lazarus (1991), Bagozzi (1992) defined satisfaction as affect, whereas perceived service quality was an appraisal construct: appraisal normally precedes emotional response (Carver and Scheier 1990; Oliver 1997, 1999). Several empirical studies also approve the perceived service quality -> satisfaction sequence, which corresponds to the traditional attitude structure sequence (e.g., Cronin and Taylor 1994; Patterson 2000; Woodside, Frey and Daly 1989). Gotlieb, Grewal and Brown (1994) directly tested the two models of different causal directions and found that perceived service quality affects satisfaction, which in turn affects behavioral intention (Taylor and Baker 1994). Therefore, the following hypothesis can be made:

Hypothesis 1: Customer's' perceived service quality of the bank portal has a positive effect on the customers' overall satisfaction of the bank portal

Next, the relationship with trust is considered. Customers have to evaluation several explicit and implicit signals of the bank portal and the bank itself, to progressively build up trust in the bank portal. Among the explicit signals, perceived service quality of online banking services represent evaluations of direct experiences of the service. Therefore, if the customer approves of the perceived service quality, he/she will have more confidence in the bank portal, which in turn will increase his/her trust in the bank portal.

Thus,

Hypothesis 2: Customer's perceived service quality of the bank portal has a positive effect on the customer's trust in the bank portal

3.3 How does trust in the bank portal influence customer loyalty and customer satisfaction of the bank portal?

Customers may not know the exact service outcome before buying the service, and because many services contain credence elements of quality, some customers may not have the ability to discern service performance even after experiencing it (Trawick and Swan 1981). Thus, the management of customers' trust is especially important in the marketing of services (Berry and Parasuraman 1991).

Therefore, it is proposed that trust precedes satisfaction for the next reasons. Firstly, if a customer does not trust the bank and the bank portal based on past experiences, he or she will almost certainly be dissatisfied with the bank and the bank portal. Secondly, based on the social exchange theory that distinguishes trust in before initiation of an exchange (pre-trust) and in after an exchange (post-trust) (Singh and Sirdeshumk, 2000). It is claimed by that theory that customers' pre-trust will have direct impact on their post-purchase satisfaction. Therefore, it can be said that accumulated trust perceptions will affect accumulated overall satisfaction. Thirdly, Gwinner, Gremier and Bitner (1998) found that customers in long-term relationships with service firms experience three primary benefits:
confidence, social and special treatment benefits. Among the three, confidence (which is similar to trust in this study) was discovered to be the most important across several categories of services. Confidence benefits included a sense of reduced anxiety, faith in the provider, reduced perception of anxiety and risk, and knowing what to expect. When customers felt these benefits, their overall satisfaction was enhanced. Thus,

Hypothesis 3: Customer’s trust in the bank portal has a positive effect on their overall satisfaction of the bank portal

Following Chaudhuri and Holbrook (2001) and Morgan and Hunt (1994), it is proposed that commitment in the form of loyalty intentions arises from trust. Trust and commitment are two of the most important constructs in the relationship marketing paradigm (Morgan and Hunt 1994; Spekman 1988), and trust appears to be implicit in true customer loyalty (Oliver 1999, p. 42). Thus the following hypothesis can be proposed,

Hypothesis 4: Customer’s trust in the bank portal has a positive effect on the customer loyalty to the bank portal

3.4 How does overall customer satisfaction of the bank portal influence the customer loyalty to the bank portal?

Researchers in customer satisfaction found that satisfied customers are more likely to purchase the same product/service recurrently, to withstand competitive offers from competitors, and to generate positive word of mouth (Anderson and Sullivan, 1993; Bolton and Lemon, 1999; Zeithaml, Berry and Parasuraman 1996). Research in the American Satisfaction Index provides additional empirical support for positive customer loyalty responses as the major consequence of customer satisfaction (Fornell, Johnson, Anderson, Cha and Bryant 1996). The theoretical argument for this relation is equal to the attitude consistency arguments (Oliver 1997), or as Oliver (1999) concluded: "No possibility discussed here entertains loyalty development without early or concurrent satisfying episodes". (p.42). Thus,

Hypothesis 5: Customer’s satisfaction in the bank portal has a positive effect on the customer loyalty to the bank portal

3.5 Contextual factors

Literature shows that the following contextual factors can influence the relations between the constructs in the model: age, gender, involvement, variety seeking behavior, and technophobia.

The impact of gender on buying behavior in an offline environment has been the focus of numerous scholarly papers (Jasper and Lan 1992, Slama and Tashilian 1985, Zeithaml 1985). Slama and Tashilian (1985) found that women are more entangled with purchasing activities and more heavily affected by personal interactions than men. According to a research by the American Pew Internet & American Life Project (2005) men and women shared most reasons why they value online banking. About three-quarters of both men and women said they appreciated both the convenience and timesaving. Many also said they
appreciated the privacy of the bank portal and the accessibility to so much information and so many services online. Because online banking is viewed similarly by both sexes, gender is not considered as a moderating variable in the process of customer loyalty in the bank portal.

Age is another popular demographic characteristic in previous consumer studies. Most of the studies focus on the differences in people's information processing abilities (Gilly and Zeithaml 1985, Roedder and Cole 1986). Gilly and Zeithaml (1985) found that our capability to process information declines with age. Similar to Homborg and Giering (2001). However, online banking has been adopted by 64% in 2006 of the internet users in the Netherlands, and in 2007 this percentage was 69% (sync.nl, 2007). This shows that the overall majority of online banking already has quite some experience, and thus already feel comfortable using online banking. Furthermore, Eurostat (2006) showed that in the EU the share of online bankers does not decrease with age. In the Netherlands this holds true within the 16-54 year olds. The percentage for 16-24 year olds that participate in online banking is 68% and the percentage for 25-54 year olds is 69 %. The high adoption rate among all different age groups and the fact that most people will have at least more than 1 year experience in online banking justifies that age will not be considered as a contextual factor in this framework.

In the Netherlands, bank portals are an online extension of the services of important banks that always had and still have a high share in the consumer market. The banks were the ones that pushed online banking services to the customers. Therefore, most people that use online services of a certain bank have also been with that bank before they used its online services. The fact that the bank already has been able to build a relationship with its customer before introducing its online services will have a positive influence on the trust-customer relationship. Therefore it is hypothesized:

Hypothesis 6: Customers that have been with the same bank for (almost) all their life have a positive moderating effect on the trust-loyalty relationship

McAllister and Pessemier (1982) provided an interdisciplinary review of variety seeking behavior. They divided the explanations into two groups, namely (a) derived motivation, in which varied behavior is the result of some other motivation such as multiple uses, and (b) direct motivation, in which varied behavior is the result of a desire for change per se due to interpersonal or intra personal motives. In the Netherlands, bank customers cannot really compare bankportals of other banks, because you have to be a member to be able to log in to the portal. Therefore, variety seeking behavior is not applicable in the case of online banking and not considered as a moderating factor.

Following Dekimpe et al. (2000), technological risk has to be added to the list of variables negatively influencing the perception of risk. Many users are overwhelmed by the technological complexity of computers leading to a low level of self-efficacy (Thatcher and Perrewe 2002). This renders consumers less open to innovative technology-related products and may lead to an aversion to sophisticated products or technologies. This behavior can be described as technofobia (Mitchell 1994). In the Netherlands bank portals have already been adopted by a high percentage of internet users and has been introduced to the consumer market since 2001. Most people that are active in bank portals are experienced users and therefore technofobia is not viewed to have an influence in this model.

The banks that offer online banking in the Netherlands have dominated the consumer market for decades. The banks are known by the public for decades and have been able to build a good solid reputation in the course of time. In addition, most bank customers have been with the same bank (almost) all their life or for at least a long period, because bank-customer relationships are of long-term nature. Online banking has a high adoption rate of
69% (sync.nl, 2007) and does not decrease with age (Eurostat, 2006), thus it is used by the mainstream public. It is assumable that most people that are active in their bank portal cannot really make a good judgement whether the bank portal is safe or not based on the technological knowledge they have about secure online transactions. Therefore, most likely people will trust the security and privacy of the bank portal based on the good reputation of the bank and the bank portal. Reputation is proposed to be a moderating influence on the trust-loyalty relationship in online banking, because people cannot really judge themselves whether the system is safe or not, and are therefore more dependent on the reputation of the bank and the bank portal.

**Hypothesis 7: A good reputation of the bank has a moderating positive effect on the trust-loyalty relationship of the customer**

Bank-customer relationship are characterized by long-term duration, and try everything to keep it that way. If a customer would like to switch banks, he or she needs to do lots of paper work in order to achieve that. They have to give their new account number to all the organizations for which they have to pay bills or receive money from. Furthermore, they have to request for new products and services such as bank cards, credit cards, limits and a bank portal. Also periodic booking via a bankportal, should be stopped by the former bank. All of this work that has to be organized by the customer itself, which does not make it easy and comfortable to switch banks. Therefore, it is assumed that high switching costs impedes many bank customers to switch banks. Thus,

**Hypothesis 8: High switching costs has a positive moderating effect on the satisfaction-loyalty relationship of the customer**
3.6 The proposed research framework and its hypotheses

The formulated hypothesis form the below given research framework based on the cognitive-affective-conative loyalty framework of Oliver applied in a bank portal context.

The hypotheses that are formulated in the research framework are:

H1: Customer's perceived service quality of the bank portal has a positive effect on the customers' overall satisfaction of the bank portal.
H2: Customer's perceived service quality of the bank portal has a positive effect on the customer's trust in the bank portal.
H3: Customer's trust in the bank portal has a positive effect on their overall satisfaction of the bank portal.
H4: Customer's trust in the bank portal has a positive effect on the customer loyalty to the bank portal.
H5: Customer's satisfaction in the bank portal has a positive effect on the customer loyalty to the bank portal.
H6: Customers that have been with the same bank for (almost) all their life have a positive moderating effect on the trust-loyalty relationship.
H7: A good reputation of the bank has a moderating positive effect on the trust-loyalty relationship of the customer.
H8: High switching costs has a positive moderating effect on the satisfaction-loyalty relationship of the customer.
Chapter 4 Research methodology

4.1 Introduction

To test the relevance of the research framework and its defined hypothesis in the real world, chosen is to do both a quantitative and qualitative analysis. Both analyses have their advantages and disadvantages, as is given in the table A4.1 of Glesne, C., & Peshkin, A. (1992). Both analyses can be complementary and by using both of them the research will be more complete (Patton, 1990; Reichardt & Cook, 1979). First, a qualitative research is executed in the form of an interview. It is also used as an exploratory step before designing the more quantitative, structured questionnaires to help determine the appropriate questions and categories for the quantitative research.

4.2 Interview methodology: qualitative

For the qualitative research is chosen to do an interview, because of the following reasons:

- Interviewees are enabled to depict what is significant to them and encourage them to use their own words rather than being limited to predetermined categories.
- Higher credibility and face validity are obtained.
- The interviewer has the opportunity to ask for more details and to ensure that interviewees interpreted the questions how they were intended to be.
- Interviewers have the flexibility to use their knowledge, expertise, and interpersonal skills to investigate interesting or unforeseen ideas or themes that were raised by participants.

The goal of this interview is to look for the relevance of the proposed research framework and its hypotheses in the real world and to adapt the measurement dimensions that were prior find in literature. The adapted measurement dimensions to the context will be used as a guideline to develop the questionnaire.

According to Eurostat (2006), the following is known about Dutch users that have used the Internet for online banking in the past three months:

- This percentage is 59 of the total Dutch population.
- This user group is composed of 64% males and 54% of females.
- Of this user group 68% is 16-24 year old, 69% 25-54 year old and 32% 55-74 year old.
- This user group is represented by 37% of people with no-low education level, 65% medium education level and 78% high education level.

Furthermore Eurostat (2006) showed that in the EU the share of online bankers did not decrease with age, as is shown in table A4.2. In the Netherlands this holds true for the 16-54 year olds. The percentage for 16-24 year olds that are active in a bank portal is 68% and the percentage for 25-54 year olds is 69%. These facts show that online banking has been adopted more or less equally by both genders with a medium to high education level within the age group of 16-54 year old. Therefore, this group will be the focus group of the interview.
The same interviewer carried out all the fifty interviews. Respondents were recruited from the university, station, vocational schools and acquaintances in the period (14 to 27 June 2007). For some an appointment was made beforehand, depended on the interviewee’s preference. The settings for the interviews were the canteen of the university/schools or the train.

Chosen was to do a face-to-face interview because of its benefits with relation to synchronous communication in both time and place. Face-to-face interview enables the interviewer to utilize social signals, such as voice, intonation, body language etc., which can give him plenty of additional information that can be added to the verbal answer of what he wants to know from the interviewee. However, the presence of the interviewer can also lead to perturbing effects, if the interviewer guides the interviewee with his behaviour in a special direction. This hazard is impeded in this research by using the same interview scheme for each interviewee and to be aware of this danger. Another advantage is that face-to-face interview gives the interviewer a lot of possibilities to create a good interview ambience, which makes it easy to obtain deeper and more sincere information from the interviewee.

The duration of each interview was approximately 30 minutes. Both genders, education level and all age groups were equally represented in the interview as is shown in table 4.1

<table>
<thead>
<tr>
<th>Age (years)</th>
<th>Male</th>
<th>Female</th>
<th>Medium (vmbo, mbo)</th>
<th>High education (havo, vwo, hbo, wo)</th>
</tr>
</thead>
<tbody>
<tr>
<td>16-24</td>
<td>8</td>
<td>7</td>
<td>5</td>
<td>8</td>
</tr>
<tr>
<td>25-33</td>
<td>6</td>
<td>8</td>
<td>5</td>
<td>9</td>
</tr>
<tr>
<td>34-42</td>
<td>7</td>
<td>5</td>
<td>6</td>
<td>6</td>
</tr>
<tr>
<td>43-51</td>
<td>5</td>
<td>6</td>
<td>4</td>
<td>7</td>
</tr>
</tbody>
</table>

Table 4.1: overview of characteristics of interviewees

Among the three basic types of qualitative interviewing defined by Patton (1990), the standardized open-ended interview was chosen. In this format, the interviewer sticks to a strict script, and there is no flexibility in the wording or order of questions. This interview is still considered qualitative, since the responses are open-ended. This approach is regarded as the most structured and efficient of the qualitative interviewing techniques. In addition, it is useful for reducing bias when the interviewer is not so experienced, and when it is important to compare the responses of different respondents.

The same interview structure (tableA4.3) was applied to each interviewee by the same interviewer, and for every questions it was also asked, why the respondent gave that answer. The interview structure was divided in the following sections: general, usage of the bank portal, perceived service quality of the bank portal, overall satisfaction regarding the bank portal, trust in the bank portal, customer loyalty the bank portal. The interview diagram is given in table A4.3 and the results of the interview can be found in table A4.4
4.3 Measurement dimensions and questionnaire development

In this chapter the dimensions for each construct in the proposed research framework are determined. The dimensions are based on the literature study and results of the qualitative analysis. After the dimensions have been determined for each construct, questions will be formulated for each dimension. Some questions are from other researchers and others are new formulated by the rules of Dillman (2000). The questions are answered in the form of a 7-point Likert scale. An overview of the construct, dimensions, questions, references and the hypothesis are given in the format of a roadmap of study measure (table A4.5).

The focus group for the questionnaire is 16-33 year-olds with a high education. They should use the bank portal for at least one year and use at least one of the services of the bank portal regularly. Chosen is for this age group, because they use Internet intensive on a daily base and receive monthly scholarship or salary. Therefore, this group is expected to use online banking regularly. The questionnaires will be handed out in the train, library, downtown, University and other crowded places.

4.3.1 Measurement of Customer Loyalty responses of the customer to the bank portal

In this study, two customer loyalty responses (dimensions) are modelled, both of which were defined as "active loyalty behaviors" in Ganesh, Arnold, and Reynolds (2000): word of mouth (WOM) and traditional "loyalty" in the form of repurchase intentions. In this context, customer loyalty is applied to the loyalty of the customer to the bank portal. The repurchase intentions are viewed as reuse of the online banking services. The questions for the two dimensions are adapted from Mols (1998).

4.3.2 Measurement of overall customer satisfaction of the bank portal

The goal of this study is to measure the overall customer satisfaction of the bank portal. The questions used to measure customer satisfaction were taken from previous measure of overall level of user satisfaction or Web customer satisfaction (Wang et al., 2001; Doll et al., 1998; Palvia, 1996).

4.3.3 Measurement of perceived service quality of the bank portal

There have been numerous of studies that have focused on measuring the perceived service quality of transaction-based or retailing oriented Web sites (Donthu 2001; Loiacono and Watson 2002; Wang, Tang and Tang 2001; Zeithaml and Parasuraman 2002) or on the Web design quality (Bell and Tang 1998; Liu and Arnett 2000; Zhang and Dran 2001; Zhang and Dran 2002).

Online banking service can be considered as a portal because it fulfills all the three requirements defined by (Bauer, and Hammerschmidt 2004). Furthermore the bank portal knows two forms of interactions (Yang, Cai, Zhou Z., Zhou N. 2004):
1. Between the customer and the portal employee via either Internet-based communication tools (e-mail) or traditional channels (mail, fax and phone). However, in real life the results of the qualitative research showed that none of them have ever used the customer service for online banking activities. They stressed that they try to avoid personal contact with the bank regarding online banking issues as much as possible. In case the customer would have a problem with online banking that they think only involves themselves, and if they have used all potential sources of solution. Only in that case they would contact the customer service of the bank, or visit the bank branch itself.

2. Between the customer and the portal. Results of the quantitative analysis showed that customers of online banking prefer to do all of their communication with their own personal bank portal, and shun personal contact with the bank regarding issues of online banking. Therefore, it can be concluded that the quality of the bank portal will be mainly and solely judged on the interaction between the bank portal and its customers.

In literature, there only exists one model for measuring the perceived service quality of online banking services perceived as a bank portal. This model was developed by Bauer, Hammerschmidt and Falk (2004) and six dimensions were identified: security and trust, basic services quality, cross-buying services quality, added value, transaction support, responsiveness. These six dimensions could also be categorized in core perceived service quality, additional perceived service quality and solution perceived service quality.

During the qualitative analysis, it became clear that the model by Bauer, Hammerschmidt and Falk (2004) is too extensive, and is not relevant in real life context in the Netherlands. Interviewees stressed that banking activities is something that has to be done, but not something they enjoy doing. They chose for online banking because it is easier, more comfortable and faster than doing it the traditional way. The overall majority was only active in the three basic service of the bank portal: bill payment, review current account and fund transfers. The bank portal offers more than the basic services, but none of the interviewees were further interested in other additional services that already exist or would be offered in the future. Thus, additional services were not found relevant according to the qualitative analysis.

All of the interviewees were satisfied about the bank portal and had not encountered problems yet. The only problem that they could think of was that the bank portal is only very sporadically not available. In case that happens, the bank portal shows a message, thus the customer knows that everybody has this problem, and then can do nothing but wait until the bank solves the problem itself. In addition, all of the interviewees noted that they never had to wait long until so far. When asked, if the problem would hold on for a few days, they all responded that they just will wait until it is solved by the bank. All interviewees have been accustomed to using the bank portal with no problems. Therefore, they expect that this will also not happen in the future. The qualitative analysis shows that the customer service of the bank and solution perceived quality does not play a part in the bank portal context, and thus also not in the perceived service quality of the bank portal by the customer.

An open question was asked to the to find out what attributes are considered to be important for the customers of online banking. The interviewees responded all very similarly, and considered the following attributes of the bank portal to be important:
1. Availability of the bank portal.
2. Easy to use: efficient in usage, easy to understand, easy to learn.
3. Clarity of the lay-out
4. Speed of the bank portal should be fast.
5. Money transfers should be processed quickly.
6. The bank portal should be secure and guard your privacy.
7. Bank statements should be up to date.
8. Reliable performance. The bank portal should do what you tell him to do, or what he says he does.

These were the attributes that all interviewees found to be important in online transactions. All of the mentioned attributes can be placed under the basic services quality dimension of Bauer, Hammerschmidt and Falk (2004). Trust in the security and privacy of online banking and reliable performance were both mentioned by the interviewees as in the model. However, it is not taken up as a dimension for perceived service quality of the bank portal, but will be measured separately and discussed in the next paragraph. Therefore the following dimensions of perceived service quality of the bank portal are proposed:

1. Availability
2. Easy to use
3. Clarity of design
4. Speed
5. Timeliness

All the questions for the dimensions are formulated based on the rules of Dillman (2000), except for the dimension, clarity of design which are adapted from Montoya Weiss, Voss, Grewal (2003).

4.3.5 Measurement of trust in the bank portal

Trust in this study is defined as trust in the bank portal. When asked to the interviewees whether they trust their bank portal all of them agreed. When asked what they meant with trust in the bank portal, they mentioned:

1. The portal should do what he says he does, thus reliable performance. Thus, they trust that the transactions that they do, will be executed correctly.
2. They trust that the online transactions are secured
3. They trust that their privacy is guarded
4. They trust that the bank would never expose them to an unsafe bank portal system, thus integrity of the bank.

These reasons can be grouped in three dimension of trust in the bank portal: security and privacy of the bank portal, reliability of the bank portal and the integrity of the bank. The majority of the questions for the dimensions were new formulated based on Dillman (2000). One question for integrity was adapted from (Iuarn, Lin 2003) and one question for reliability was adapted from (Gerrard and Cunningham 2005).
4.3.6 Switching costs

Qualitative research showed that a main reason why customers are not that eager to switch banks, is because they find that switching banks give them too much work. If someone wants to switch banks, they have to give their new account number to all organization they pay money or receive money from. Furthermore, they should also request for products and services like bank cards, credit cards, limits and the bank portal. Also periodic booking via the bank portal, should be stopped by the former bank. All of this work that has to be done by the person himself impedes many to switch banks. Switching costs are in this framework defined as the time and effort it takes to switch to another bank based on the. Therefore, switching costs is also taken up in this model. The questions for this construct are adapted from (Jones, Mothersbaugh, Beatty 2000)

4.3.7 Reputation

Qualitative research demonstrated that customers trust their bank because of its good reputation based on reports of the media and others. The fact that there have not been stories in the media that the bank portal is unsafe, gives them no reason to not trust the bank portal system. Furthermore, many of them pointed also out that the bank is well known and has a good reputation, which helps them trust the online banking system more. The construct reputation showed real life relevance in the qualitative analysis.

The reputation of the bank portal is defined in this study as the reputation of the bank portal itself and the bank. The definition of reputation itself is adapted from Charles Fombrun’s (1996), which is “a perceptual representation of a company’s past actions and future prospects that describes the firm’s overall appeal to all of its key constituents when compared with other leading rivals” (p. 72). The questions for this construct are adapted from (Jarvenpaa, Tractinsky and Vitale 2000).
Chapter 5 Results and Data analysis

5.1 Introduction

In this chapter the results of the questionnaire are demonstrated and analysed. First, a preliminary analysis will be put into practice to describe the response rate, general info about the respondents and to assess the reliability and the construct validity of the questionnaire items. Secondly, the structural equation model will be analysed and the hypothesis tested.

5.2 Preliminary analysis

5.2.1 Research setting and response rate

The questionnaires were handed out in the libraries and canteens of the University of Tilburg, the train and train station, Internet and friends. This university was chosen, because it was still crowded during summer holiday due to its re-sits and both genders are much more equally presented than at the Technical University of Eindhoven. The train not during peak hours was also chosen to hand out the questionnaires, because it is full of people and passengers generally don’t really have much to do except waiting until they have reached their destination. Only bank portals of ABN AMRO, Postbank or Rabobank were chosen, because the overall majority of the Dutch population uses these.

The response of both the university and the train were very high, 307 of the 330 paper questionnaires were returned, thus only a handful of 23 people did not fill in the questionnaire. The high response rate of 93% is due to the fact that a package of chewing gum was given as compensation and the respondent already sat comfortable and had plenty of time to fill in the questionnaire. After each respondent had filled in the paper questionnaire, it was checked if all the questions have been answered, therefore all questionnaires that were returned could be used for the data analysis.

The questionnaire was also posted on the internet site www.thesis-tools.com, this link and a word document of my questionnaire was forwarded to all my friends and their friends and was also e-mailed to 50 other people from the website and posted on the public forum. From the Internet 100 questionnaires were received from friends. Only 6 questionnaires were received from the 50 anonymous e-mailed people and public form. From the 106 web-based questionnaires 4 were deleted due to some missing questions. From both the paper and web-based questionnaires 409 were returned and filled in entirely correctly.
5.2.2 Background info respondents

5.2.2.1 Demographic characteristics

The bank portal is used by both genders, in this study 218 (53.30%) were male and 191 (46.70%) were female. The age group that was focused on were 16-24 year olds and 25-33 year olds, with a high education. Of the 409 respondents 190 (45.45%) belonged to the age group of 16-24 and 219 belonged to the age group of 24-33 years. Furthermore, 168 respondents (41.80%) had a havo/hbo education level and 241 respondents (58.92%) had a vwo/wo education level. Data showed that in terms of gender, education and age both focused groups are more or less equally represented.

5.2.2.2 Duration membership and bank

During the interview it appeared that almost all interviewees have been with the same bank in where they are active in the bank portal all their life or almost all their life. Therefore, it was also hypothesized that being with the same bank for (almost) all their life, will have a moderating positive effect on the trust-loyalty relation.

In this study 300 (73.33%) have been with the same bank (almost) all their life, and only 109 (26.65%) have joined their bank recently. This confirms the thought based on the former interview that most active online bankers have been with the same bank (almost) all their life.

In this study it was chosen to only focus on the three major player in bank portals in the Netherlands which are ABN AMRO, Postbank and Rabobank. Of the 409 respondents, 129 (31.54%) are customer at ABN AMRO, 114 (27.87%) at Postbank and 166 (40.59%) at Rabobank. The Rabobank is a little bit more represented than the others due to the fact that most students are customer at Rabobank, but overall it can be said that all three banks are significantly represented.

5.2.2.3 Online banking usage and activities

The respondents of this questionnaire had to be active in the bank portal for at least one year. Table 5.1 shows that the far majority had more than one-year experience and the number of years of experience ranged more or less equally from 2 to more than 5 years. Therefore it can be said that the respondents, actually are very familiar and used to the bank portal.

Table 5.1
The monthly usage of the bank portal predominantly varied from 1 to more than 6 times a month (Table 5.2). Surprisingly, 132 respondents (32.27%) used the bank portal more than 6 times a month.

Table 5.2

The bank portal services that are principally used are basics, such as paying bills, fund transfers and view bank statement (Table 5.3). After that, saving was used by 54.03% of the respondents. Ideal which is a way to pay online purchases through means of the bank portal instead of credit card is only used by 27.87% of the respondents.

Table 5.3

In addition, it was also asked to the respondents which of the bank portal they used most frequently. Not surprisingly, the three basic services were most frequently used
5.3 Construct validity

The variables that are used to measure the constructs in this study are based on literature study and qualitative research. Construct validity is used to test the degree to which the chosen variables represent the hypothesized constructs. Convergent validity, discriminant validity and reliability are used to test the construct validity (Ahire et al., 1996).

5.3.1 Factor analysis

Factor analysis is a statistical method that is used to determine the number of underlying dimensions contained in a set of observed variables and to identify the subset of variables that corresponds to each of the underlying dimensions. The underlying dimensions are referred to as continuous latent variables or factors. The observed variables are referred to as factor indicators.

There are two types of factor analysis: exploratory factor analysis (EFA) and confirmatory factor analysis (CFA). Exploratory factor analysis is used to explore the possible underlying factor structure of a set of observed variables without imposing a preconceived structure on the outcome (Child, 1990). By performing exploratory factor analysis, the underlying factor structure is identified. Confirmatory factor analysis is a theory-testing model as opposed to a theory-generating method like exploratory factor analysis. In confirmatory factor analysis, the researcher begins with a hypothesis prior to the analysis. This model specifies which observed variables will correlate with which factors, and which factors are correlated.

In this study, first Exploratory Factor Analysis (EFA) using principal component analysis with varimax rotation was employed to assess construct validity (Loehlin 1998). Then, Confirmatory Factor Analysis (CFA) was used to check construct validity and convergent validity of the measurement model with more precise test. Both exploratory and confirmatory factor analyses have been used to gather evidence for measurement validity (John & Benet-Martinez, 2000). Furthermore, it has been suggested that exploratory analyses be followed by confirmatory factor analyses to provide analytic solutions with the greatest scientific utility, consistency, and meaning (Tabachnick & Fidell, 2001).

5.3.1.1 Sample size

The reliability of factor analysis is dependent on the sample size. Researchers have made different rules for the sample size of factor analysis. Tabachnick and Fidell (2001) agree that 'it is comforting to have at least 300 cases for factor analysis' (p. 640) and Comrey and Lee (1992) class 300 as a good sample size, 100 as poor and 1000 as excellent. Therefore, it is chosen to only use the sample size of 307 paper questionnaires for the factor analysis, to diminish the fact that different kind of formats of questionnaire could influence the results.

Another way to test the reliability of the sample size is to use the Kaiser- Meyer-Olkin measure of sampling adequacy (KMO) test. The KMO can be calculated for individual and multiple variables and represents the ratio of the squared correlation between variables to the squared partial correlation between variables. The KMO statistics varies between 0 and 1. Values between 0.5 and 0.7 are mediocre, values between 0.7 and 0.8 are good, values between 0.8 and 0.9 are great and values above 0.9 are superbe (Hutcheson and Sofronicu, 1999, pp. 224-225). The overall KMO of this sample is 0.892, which is a great score.
The individual KMO-test can also be done, to use the anti-image correlation matrix of
which the diagonals should all be bigger than 0.5. The matrix showed that all of them have a
score higher than 0.5, thus the individual KMO is also good for this sample size.
Furthermore, the Bartlett's measure tests the null hypothesis that the original
correlation matrix is an identity matrix. Therefore we want this test to be significant (i.e. have
a significance value less than .05). The test has a value of .000 and thus significant, which
shows that the R-matrix is not an identity matrix. Thus, factor analysis is appropriate.

5.3.1.2 Correlation matrix

Before extracting the factors, the correlation-matrix should be looked at first. The
variables that measure the same construct should have higher correlations among each
other than with the other variables. Furthermore, the determinant of the correlation matrix
should be greater than 0.00001, but is in this case 1.29E-009, which indicates there is
multicollinearity. Multicollinearity is obvious because a group of variables measure the same
construct, thus the correlation between variables measuring the same latent variables is
actually desirable. Before proceeding with the factor analysis in case of multicollinearity, only
variables that correlate 0.90 or higher should be eliminated. None of the variables correlate
that high with others, so no variable has to be eliminated.

5.3.1.3 Reliability of the scale

Before doing the factor analysis, the reliability of the scale should be checked. The
reliability means that a scale should consistently reflect the construct it is measuring. The
Cronbach's alpha is an index of reliability associated with the variation accounted for by the
true score of the underlying construct. The Alpha coefficient ranges in value from 0 to 1, the
higher the score, the more reliable the generated scale is. Nunnaly (1978) has indicated 0.7
to be an acceptable reliability coefficient.
The overall reliability is 0.909, which is a very good value. The Cronbach's alpha for
each individual construct is also good and ranges from 0.705 to 0.900.

5.3.1.4 Factor extraction for EFA

Principal component analysis (PCA) was used for factor extraction. First, the communality,
which is the proportion of common variance within a variable, was evaluated. According to
Kaiser's rule for factor analysis, the average communality should be greater than 0.6, when
the sample size exceeds 250. The average communality is 0.68, thus all variables can be
retained for factor extraction. Then, the edited version of the reproduced correlation matrix
that was requested using 9 factors is to be reviewed. The percentage of nonredundant
residuals with absolute values>0.05 is 21% which is smaller than the maximum criteria of
50%, thus is approved.

Finally, the rotated component matrix can be given. The factor loadings for each
factor are shown (Table B5.1). The factor loading range from 0.433 to 0.853, where the
majority has a value of around 0.7. According to Stevens (1992) for a sample size of 300
factor loadings of 0.298 are significant. Therefore, it can be said that all items are significant
and can therefore be retained. However, there are some variables that load on factors, that
they are not supposed to measure. The discussion which questions to retain and which to
delete can be found in discussion B5.2 . The conclusion was that SQUAL14, SQUAL8 and
SQUAL11 should be eliminated and the reliability dimension should be taken a better
second look at in the CFA.
5.3.2 Confirmatory factor analysis

5.3.2.1 Overall fit of the CFA model

The confirmatory factor analysis was executed by using the LISREL statistical software. In this study, relative or incremental fit indexes reflecting the improvement in fit of one model over an alternative, the non-normed fit index (NNFI), and comparative fit index CFI are used to compare models. Absolute indexes of goodness-of-fit such as chi-square, chi-square/df, goodness-of-fit index (GFI), root mean square residual (RMSR) and root mean square error of approximation (RMSEA) are used to evaluate individual models. Although the chi-square statistic is a global test of a model's ability to reproduce the sample variance-covariance matrix, it is sensitive to sample size and departures for multivariate normality (Bollen, 1989). Because the chi-square statistic is affected by sample size, it is generally recommended that emphasis is given to the other goodness-of-fit statistics (Dickey, 1996; Kline, 1994). The fit indices of the model can be found in table.

The normed fit index (NFI) is the ratio of the difference in the chi square value for the fitted model and a null model divided by the chi square value for the null model. It ranges between 0 and 1 with larger values indicating better models (Bentler and Bonett, 1980). The non-normed fit index (NNFI) is similar to NFI but penalizes for model complexity. By convention, NNFI values below 0.90 indicate a need to respecify the model. The NNFI is 0.91, which is a good value.

The comparative fit index (CFI; Bentler, 1990) compares the hypothesized model against an independence model and is normed between a 0 and 1 range. Values at or greater than .90 are an indication of good fitting models (Tabachnick & Fidell, 2001), and there is little influence due to sample size effects (Fan & Wang, 1998). The CFI is 0.92, which is an acceptable value.

The chi-square value, which has a value in this case of 2451.73 (P = 0.0), with 579 degrees of freedom is a measure of how well the model fits the data overall. It provides a measure of the discrepancy between the sample covariance matrix and the fitted covariance matrix. Note that the chi-square is a badness-of-fit measure in the sense that a small chi-square value corresponds to a good fit and a large chi-square to a bad fit. This chi-square value is too high, though in this case the high value can be explained due to the fact that the variables a high skewness value. Therefore, this fit index is not suitable to test the CFA-model.

The ratio of chi-square to the degrees of freedom provides information on the relative efficiency of competing models in accounting for the data. For the chi-square to degrees of freedom ratio, a value between 2 and 3 is considered acceptable, and closer to 1 is better (Kline, 1994). The ratio of chi-square to the degrees of freedom is 4.23, which is too high.

The goodness-of-fit index (GFI; Jöreskog & Sörbom, 1986) looks at the proportion of variance accounted for in the sample covariance matrix by the estimated population covariance matrix. Many researchers interpret GFI score in the .80 to .89 range as representing reasonable fit; scores of .90 or higher are considered evidence of good fit. The GFI is 0.73, which indicates the fit is not good.

RMSR is the square root of the mean of these squared residuals: an average of the residuals between individual observed and estimated covariance and variance terms. The SRMR is the standardized value of RMSR and thus is more useful for comparing fit across models. The SMSR is in this case 0.078, which is lower than 0.08 (with CFI above 0.92), thus acceptable.

RMSEA differs from RMSR in that it has a known distribution. Browne and Cudeck (1993) further suggest that an RMSEA of .05 indicates a close fit, and values up to .08
represent a reasonable upper limit for the confidence interval. The study shows a RMSEA of .096, which indicates a bad fit.

The conclusions is that the GFI is too low, the chi-square to degrees of freedom ratio is too high, RMSEA too high. The fit of the model is not good, thus the CFA model needs to be revised.

5.3.2.2 Evaluation construct validity of the CFA model

The construct validity is judged based on the factor loadings, variance extracted and the construct reliability. In confirmatory factor analysis, factor loadings can be viewed as regression coefficients in the regression of observed variables on latent variables. The standard factor loadings of observed variables (items) on latent variables (factors) are estimates of the validity of the observed variables.

The factor loading for each observed variable should be at least 0.5 and preferably 0.7 or higher (HAIR, 2006). SQUAL5, SQUAL8, SQUAL14 en ALOY5 have factor loadings below 0.5, which shows that the perceived service quality and customer loyalty do not have convergent validity.

According to Fornell and Larcker (1981), if the variance extracted of a construct is below 0.5 the convergent validity is questionable. The perceived service quality constructs has the lowest VE of 0.33, which shows that the convergent validity of this construct is very weak. TRUS and ALOY also show weak VE values of 0.45 respectively 0.47, but almost come near to 0.5.

The discriminant validity of the construct are measured with a variance-extracted test (Fornell and Larcker, 1981; Netemeyer et al., 1990). In this test should the variance-extracted estimates for each pair of constructs be greater than the square of the correlations between the two constructs. The VE of the construct SQUAL is lower than the square of the correlation with OSAT, TRUS and ALOY. The VE of the construct OSAT is larger, than all square of correlation with other constructs. The VE of the construct TRUS and REPU is higher than all square of correlation with other constructs. The construct ALOY has higher VE value than the square of correlations with TRUS and REPU, but not with SQUAL and OSAT.

The tests show that SQUAL and ALOY and TRUS have not reach construct validity yet. The SQUAL construct shows very low construct validity, thus expected is that many items should be eliminated in this construct. To determine which item should be retained, and which one should be removed. The next procedure is followed. Each construct will be judged individually. First, the items of the construct with the lowest factor loadings become a candidate for deletion. Actual deletion of items are based on the following aspects:

a) The factor loading itself
b) Reliability of the item
c) Error variance
d) After deletion of the item, the construct should at least still have 3 items, because SEM requires to have at least 3 item per construct (Hair, 2006)
e) After deletion of the item, it is preferable that the dimension it presents should at least have one question left.
f) Did EFA also proposed to delete this item

After deletion of each item, the CFA is executed again. If the indices still don't fit, looked at is the next item for deletion, until the fit indices have reach acceptable values. In addition, searched for is, which items can be deleted, if they correlate strongly with another item, they
are actually measuring the same thing, thus one could be deleted. The correlation matrix is used in this judgment.

The extended discussion can be found in discussion B5.3. The items that are deleted are: SQUAL1, SQUAL3, SQUAL4, SQUAL8, SQUAL10, SQUAL11, SQUAL13, SQUAL14, TRUS1, TRUS3, TRUS4, ALOY5. The dimensions that were omitted: timeliness of bank account overview, availability of online banking portal. All the other dimensions are retained. After deletion of the items, a new CFA is executed and TRUS2, which belongs to the dimension of reliability, is moved to the perceived service quality construct as was proposed based on EFA, because it yielded a better fitting model.

5.3.2.3 The fit indices, construct validity and reliability of the new proposed CFA model

The fit indices of the new model showed all good values. The fit indices are shown in Table B5.7. The Chi-square: 427, 37 (p=0.00), degrees freedom 237, has diminished a lot compared to the first CFA. The chi-square to degrees of freedom has now reached a value of 1.80, which indicates a good fit. The RMSEA is 0.49, which show that there is a close fit (0.50). The NNFI=0.97 comes very close to 1, which indicates a very close fit. The CFI= 0.98, which is much above the acceptable level of 0.90. The SRMR=0.055, which is much lower than the acceptable level of 0.07, thus very good. The GFI=0.90 has now reach an acceptable level.

The factor loadings of all the items have a value between 0.5 and 0.7. The VE is for all constructs is higher than 0.5, except for SQUAL, which has a value of 0.37, but is now higher than before 0.35 (Table B5.4). The VE for each construct except for SQUAL (Table B5.5), show higher value than the square of correlation between the construct itself and the other constructs (Table B5.6). The construct reliability is higher than 0.7 for all of them (Table B5.5).

The new model shows good fit indices. All the constructs of the model are reliable. Furthermore the model has reached constructs validity except for SQUAL that is characterized by a high reliability but quite low VE. SQUAL has come to the point, that no more items can be removed, otherwise the construct SQUAL would not exist anymore.

5.4 Framework and hypotheses testing

After construct validity has been achieved. The hypothesized relations between the constructs were tested with the PLS-method, using the software SmartPLS version 2.0 M3. Chosen is for this method, because the probability distribution of the items and constructs are unknown. For estimating the significance of the path coefficients a bootstrapping method of 250 samples is used. Three models will be calculated: basic model, model with moderator variables and an experimental model.

Firstly, the model is first calculated without the moderator variables, to discover the relations between the main constructs. Then, the effect of the moderator variables is calculated as is proposed by Chin, Marcolin and Newsted (1998). As last, an experimental model is calculated.
5.4.1 Basic model

The basic model calculates the direct effects between the main constructs without interference of the moderator variables. The obtained path coefficients and t-values for the hypothesis are shown in diagram 5.1 below. In addition, the $R^2$ for each construct is also given. A path coefficient is a standardized regression coefficient showing the direct effect of an independent variable (such as, perceived service quality) on a dependent variable (such as, trust in bank portal).

The path coefficients range for the four main constructs range from 0.215 to 0.528 and are all significant at a level of 0.001, because $t > 3.09$. Therefore hypotheses 1, 2, 3, 4 and 5 are supported. Perceived service quality appears to have a high direct effect of 0.49 on both trust and overall customer satisfaction. Overall satisfaction has the highest direct effect on customer loyalty with a value of 0.528. The $R^2$ is the variance in the dependent constructs, which are explained by the model, thus the higher the better. The $R^2$ had similar values of around 0.44 for both overall customer satisfaction and customer loyalty. The $R^2$ of trust had about half the value of the other two constructs. Thus, it can be said, that the model better explains satisfaction and loyalty than trust.

![Diagram 5.1](image-url)
5.4.1 Model with moderating variables

The effect of the moderator variables is calculated as is proposed by Chin, Marcolin and Newsted (1998). Diagram 5.2 shows the results of the model. The path coefficients are very low and vary from 0.006 to 0.073 and are not significant, because t<1.64. Therefore, moderating variables do not seem to influence the framework. Hypotheses 6, 7 and 8 are not supported.

Diagram 5.2
5.4.3 Experimental model

Perceived service quality had such a strong direct effect of 0.49 on both trust and overall customer satisfaction, which gave the idea to test whether perceived service quality would also have a strong direct effect on customer loyalty itself. The results of the experimental model are showed in diagram 5.3. Perceived service quality also seemed to have a direct effect on customer loyalty. Though, the effect was approximately half as strong as the direct effect on trust and overall customer satisfaction. The R square of customer loyalty was in the experimental model higher than in the basic model. The R square of the basic model was 0.440 while the R square had a value of 0.474. The experimental model explains the construct customer loyalty, better than the basic model. This finding shows that perceived service quality has a strong influence in the forming of customer loyalty.

Diagram 5.3
Chapter 6 Discussion and conclusion

6.1 Discussion

This study attempts to provide more insight in the drivers of customer loyalty in web portals. A research framework based on the cognitive-affective-conative loyalty framework by Oliver (1997) was developed and tested for bank portals. The results demonstrate that the proposed model is valid and robust. In addition, customer loyalty is more driven by cognitive responses such as perceived service quality, than by affective responses such as trust. This finding is logical because it is more difficult to feel affection towards a bank portal, when there is no human interaction.

Perceived service quality had a strong direct effect on overall customer satisfaction in the bank portal. This finding is in line with Floh and Treiblmaier (2006) and Bloemer, Ruyter and Peeters (1998) that studied the case of an online bank respectively off-line bank. The experimental research model showed that perceived service quality directly affects loyalty. However, the effect of this relation was only half as strong compared to overall satisfaction. This direct relation was also discovered in Bloemer, Ruyter and Peeters (1998). Perceived service quality had the same strong direct effect on trust. Apparently, perceived service quality affects trust and overall satisfaction equally in a bank portal context. The effect of perceived service quality to trust was also discovered by Floh and Treiblmaier (2006). Thus, perceived service quality affects customer loyalty both directly and indirectly by overall customer satisfaction and trust in a bank portal context.

Trust had a direct effect on customer loyalty and customer satisfaction. The direct effect was half as strong as perceived service quality on trust and customer satisfaction. The direct effect of trust to loyalty was also found in Floh and Treiblmaier (2006). Bejou and Palmer (1998) also found that trust positively affects loyalty in the financial service sector. In conclusion, trust affects customer loyalty directly and indirectly by overall customer satisfaction in a bank portal context.

Trust in this study was defined by trust in the bank portal and trust in the bank. Confirmatory factor analysis showed that the dimension reliability of the bank portal provides better fitting, placed under the perceived service quality construct, than under the trust construct. An explanation for this could be that, the reliability of the performance is mainly dependent on the technical functioning of the bank portal. Therefore, reliability in the bank portal seems to be considered more a cognitive response, than an affective response. In contrast to the off-line world, where reliability is more likely an affective response, than a cognitive. The finding that reliability is a dimension of the perceived service quality is in line with the service quality model of a bank portal by Bauer, Hammerschmidt and Falk (2004). Therefore, trust in the bank portal was chosen to consist of two dimensions: security and privacy of the bank portal and the integrity of the bank.

Many researchers put security and privacy under the perceived service quality construct (Bauer, Hammerschmidt and Falk (2004), Wolfinbarger and Gilly (2002), Zeithaml, Parasuraman and Malhotra (2000,2002)) in an online environment. In the explorative qualitative study it became obvious that many believed in the security and privacy of the bank portal. The reasons that were given for believing in the security and privacy of the bank portal were mainly based on trust in the bank or trust on stories from others or media. Thus, in order for customers to believe in the security and privacy they mainly relied on others (bank and media). This is explainable by the fact that in the Netherlands almost everybody owns an online bank account, which makes it easier to rely on other opinions. Furthermore, the users of online banking are not characterized to be in particular “techno savvy”, since the bank portal has been adapted to the overall majority of the customers. Therefore, it would be
difficult for many of them to evaluate the security and privacy from a pure technical perspective. In addition, Factor analysis showed that security and privacy fits better for trust than for perceived service quality.

Overall customer satisfaction influenced loyalty directly and the most of all antecedents defined in this study. This relation was also found in Floh and Treiblmaier (2006), McDougall and Levesque (2000), Bloemer Ruyter Peeters (1998) and Nguyen and Leblanc (1998). The direct effect of satisfaction to loyalty was 2.5 times stronger than the direct effect of trust to loyalty. Therefore, customer loyalty is more directly driven by satisfaction than by trust.

Reputation and duration membership of the bank did not have a moderating influence on the trust-loyalty relationship. This shows that customers who have a long-term relationship with their bank do not show more loyalty and trust towards their bank. Reputation does not influence the trust-loyalty relationship. An explanation for this result could be that reputation of the bank does not say anything about the technical performance of the bank portal. Therefore, reputation could still influence the trust-loyalty relationship to the bank itself, but it does not influence the trust-loyalty relationship in a bank portal context. Furthermore, it appeared that switching costs did not have any effect on the satisfaction-loyalty relationship. This means that high switching costs do not make customers easier satisfied and more loyal to the bank.

6.2 Conclusion

The proposed framework based on the cognitive-affective-conative loyalty framework by Oliver (1997) is valid and robust in a bank portal context. Customer loyalty to a bank portal is directly affected by overall customer satisfaction and trust, which in turn are affected by perceived service quality. The effect of perceived service quality to trust and satisfaction was strong and of similar value. In addition perceived service quality also seemed to influence customer loyalty directly. However, this influence was not as high as customer satisfaction on loyalty and perceived service quality on trust and satisfaction, but still higher than trust on loyalty.

Thus, cognitive loyalty is followed by both affective and conative loyalty in a bank portal. In a bank portal customer loyalty seems to appear more driven by cognitive loyalty (perceived service quality) than by affective loyalty (trust). Perceived service quality is therefore considered to be the key driver in the process of customer loyalty in a bank portal. Though, overall customer satisfaction had the strongest direct influence on loyalty. Perceived service quality had a strong influence on customer loyalty in three ways.

Moderating effects such as switching costs, reputation and duration membership of the bank did not appear to influence some of the proposed relationships.
Chapter 7 Theoretical and practical implications

7.1 Recommendations for banks

The results of this study have implications for banks interested in creating customer loyalty in a bank portal context. Perceived service quality, trust and overall customer satisfaction are all important for creating customer loyalty to bank portals.

Cognitive responses such as perceived service quality exert strong influence on the forming of customer loyalty to bank portals. Customers prefer to do as much of their banking business online and shun contact with the bank staff. This leaves customers to evaluate their bank portal mainly on how it functions. Therefore, the service quality of the bank portal on itself should be satisfactory enough to fulfill the needs of the customer.

Bank portals target the mainstream consumer market. Banks should be aware that customers who have different degrees of Internet expertise evaluate perceived service quality. Customers are mainly interested in the basic services of bank portals such as fund transfers, bank statement review and bill payment. The perceived service quality of those services should be kept guard on constantly. Perceived service quality, is among others, measured by the ease of use, clarity of the bank portal design, speed and reliability. Though results show that customers were quite satisfactory about the ease of use of their bank portals, banks should still put effort to bring more convenience to the customer.

An example could be that bank customers receive all of their bills immediately on their own bank portal, instead of by the regular mail. In that way, they do not have to type the info of the paper bill on their bank portal, but only have to give permission for transaction. This service already exists in the Netherlands under the name IDEAL, but only when customers buy customers products or services online.

IDEAL was introduced in 2005, though only 30 % of the respondents made use of this service. This has to do with the fact that websites offer also other choices for payment such as: paper bill, credit cards, wallie card, moneybookers and paypal. Furthermore, IDEAL is mainly offered at Dutch websites, though especially in the online world it is easy to cross borders when buying products. Paypal has attained a dominant position in global online payment, and was founded just since 1998 and is not considered to be a bank. Paypal mainly operates between other Paypal-accounts and works with e-mail address instead of bank account numbers, thus more anonymous. This service is an example of a threat from other branches, wherein banks have lost opportunities. Therefore, it is important to underline that banks have to think from a more global and cross-branch perspective, in particular the IT-industry.

An example, that shows, that banks still are not thinking global and online enough; checks from abroad still have to be processed at the bank branch, instead of by the customer itself the bank portal. Another idea for improvement could be that IBAN/BIC codes can be found on an international address book in the bank portal itself, instead of a separate website.

The clarity of the bank portal lay-out is important for the perceived service quality of the bank portal. The lay-out of the bank portal should be designed in such a way that customers can find what they are looking for instantaneously. An example could be that also think about advancing its bank account lay-out. Bank account view is now displayed according to date of transaction. Banks could think about adding a function, in where you can select former transaction(s) of a certain person or company.

Another important point is that customers find speed in online transactions important. Nowadays, fund transfers within the same bank are processed instantaneously, but takes longer between two bank accounts from two different banks. In addition, a transfer between
bank accounts from two different countries takes even a couple of days. This shows that banks think locally and even within their own bank, instead of more global. For example, fund transfers between Paypal-accounts are processed immediately wherein the origin of the buyer and seller is irrelevant for the speed of fund transfers. Of course, banks have to obey national, international and branch rules, still they should think about ways to improve the speed of their fund transfers.

The reliability of the bank portal also measures an aspect of the perceived service quality of the bank portal. Therefore, banks should put effort in making their bank portal as much reliable as possible to their customers. Research results showed that high switching costs do not influence the loyalty of the customer to the bank portal. Therefore, this shows that customers are not bounded by obstacles that banks put on their customers if they want to move to another bank. Banks should be aware that high switching costs is not the way to impede customers from leaving them.

Trust is also considered to be important in the forming of customer loyalty to the bank portal. Trust is driven by perceived service quality and drives customer satisfaction and customer loyalty directly. Trust in the bank portal is defined by the integrity of the bank and the security and privacy in the bank portal. The integrity of the bank plays an important part in the trust the customer has in the bank portal. Though from a technical perspective the functioning of the bank portal has nothing to do with the integrity of the bank. The customer is not only involved in the bank portal, but also in the bank itself. Therefore, it is important to note that banks demonstrate clearly their integrity towards its customers. A way to do this is for example promote their integrity in advertisement or company profile.

The security and privacy of the bank portal is important in the feeling of trust in the bank portal by the customers. Consumers need to feel, that the online transactions are secure and their privacy is safeguarded. Banks should think about ways to improve the perceived security and privacy of the customers. Many bank portal customers feel that the interaction between the bank and themselves give the bank portal a safe appearance. Banks should therefore focus on how they can appear the interaction between bank portal and customer safer. Though, they should be attentive that a safer appearance should not stand in the way of convenience. Banks could for example consider using something such as fingerprint or iris recognition.

Most bank portal customers have been with the same bank for (almost) all their life. Results showed that long-term bank-customer relationships do not influence the trust and loyalty to the bank portal. Therefore, banks should realize that they cannot account long-term customers to be more loyal to their bank portal. In addition, reputation appeared to have the same effect. Though, this does not signify that a bank should neglect its reputation. The bank portal is still associated with the bank itself. However, these finding stresses customer loyalty to the bank portal is so strongly driven by trust, that factors such as duration bank membership and reputation do not have an influence in this.

Overall customer satisfaction has a strong direct influence on the loyalty to the bank portal. In turn, customer satisfaction is strongly driven by perceived service quality. Considering the strong direct effect customer satisfaction has on loyalty, banks should know the overall satisfaction of their customers. They should think about ways to monitor it, and take action when customers are unsatisfied. An example could be to send questionnaires about bank portals to a group of customers every now and then.
7.2 Limitation and future studies

A limitation of this research is the fact that the study was only conducted in the Netherlands. The adoption of bank portals in the Netherlands and general Internet usage is known to be one of the highest in Europe. A more extended geographical sample might show that, in other countries, there is a difference in customer attitudes towards web portals and Internet in general, which could also have an influence on the forming of customer loyalty. In addition, the respondents were member from three different bank portals. It would be more interesting to see whether the same framework has different outcomes for different bank portals.

Furthermore, the study was focused on 18-33 year-olds with a higher education. Studying the behavior of customers that do not fall in this category, but are involved in bank portals will help extend the general validity of this model.

Another limitation of this study was that the perceived service quality construct did not show high construct validity due to the fact that no applicable model was found to measure the service quality of the bank portal. The construct validity of perceived service quality could be improved, if more researchers would focus to find a measurement model for perceived service quality in bank portals.

Oliver's model, which was developed for off-line companies shows to be also valid for bank portals. This model should also be tested for other industries that have extended their services to the online world, in order to assess its general stability in a web portal context. It would also be interesting to see whether this model is also valid for web portals that do not come from traditional well-established companies, but made their entrance only in the online world. Examples for web portals of that genre that are: Myspace, facebook, hi5, youtube and ebay. Likely the process of customer loyalty will be different, than for bank portals. Though, in this industry the affective loyalty is expected to play a more important part.

Moderating variables such as duration membership bank, reputation and switching costs did not have an effect on the framework. A replication study could be done which focus exclusively on the influence of moderating variables. Examples of other moderating variables are: financial knowledge, involvement, salary, and price of products.
Bibliography


Chin, Marcolin and Newsted (1998), "A partial least square latent variable modelling approach for measuring interaction effects: results from a monte carlo simulation study and voice mail emotion/adoption study".


Yang, Z., Peterson, R.T. and Huang, L. (2001), "Taking the pulse of internet pharmacies", Marketing Health Services, Vol. 21 No. 2, pp. 4-10.


Websites

www.eurostat.com
www.comscore.com
www.nss.nl
www.sync.nl
## Appendix A4: Appendices with chapter 4

### Table A4.1

<table>
<thead>
<tr>
<th>Quantitative Mode</th>
<th>Qualitative mode</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Assumptions</strong></td>
<td><strong>Assumptions</strong></td>
</tr>
<tr>
<td>• Social facts have an objective reality</td>
<td>• Reality is socially constructed</td>
</tr>
<tr>
<td>• Primacy of method</td>
<td>• Primacy of subject matter</td>
</tr>
<tr>
<td>• Variables can be identified and relationships measured</td>
<td>• Variables are complex, interwoven, and difficult to measure</td>
</tr>
<tr>
<td>• Etic (outside's point of view)</td>
<td>• Emic (insider's point of view)</td>
</tr>
<tr>
<td><strong>Purpose</strong></td>
<td><strong>Purpose</strong></td>
</tr>
<tr>
<td>• Generalizability</td>
<td>• Contextualization</td>
</tr>
<tr>
<td>• Prediction</td>
<td>• Interpretation</td>
</tr>
<tr>
<td>• Causal explanations</td>
<td>• Understanding actors' perspectives</td>
</tr>
<tr>
<td><strong>Approach</strong></td>
<td><strong>Approach</strong></td>
</tr>
<tr>
<td>• Begins with hypotheses and theories</td>
<td>• Ends with hypotheses and grounded theory</td>
</tr>
<tr>
<td>• Manipulation and control</td>
<td>• Emergence and portrayal</td>
</tr>
<tr>
<td>• Uses formal instruments</td>
<td>• Researcher as instrument</td>
</tr>
<tr>
<td>• Experimentation</td>
<td>• Naturalistic</td>
</tr>
<tr>
<td>• Deductive</td>
<td>• Inductive</td>
</tr>
<tr>
<td>• Component analysis</td>
<td>• Searches for patterns</td>
</tr>
<tr>
<td>• Seeks consensus, the norm</td>
<td>• Seeks pluralism, complexity</td>
</tr>
<tr>
<td>• Reduces data to numerical indices</td>
<td>• Makes minor use of numerical indices</td>
</tr>
<tr>
<td>• Abstract language in write-up</td>
<td>• Descriptive write-up</td>
</tr>
<tr>
<td><strong>Researcher Role</strong></td>
<td><strong>Researcher Role</strong></td>
</tr>
<tr>
<td>• Detachment and impartiality</td>
<td>• Personal involvement and partiality</td>
</tr>
<tr>
<td>• Objective portrayal</td>
<td>• Empathic understanding</td>
</tr>
</tbody>
</table>
Share of online bankers does not decrease with age. Internet usage declines with age. But relative to internet users, the share of online bankers in the EU is remarkably stable for those over 24 years - i.e. out of those who use the internet, around 40% also use online banking, irrespective of age. As it appears, reluctance to approach the Internet in the first place is the biggest hurdle to further proliferation of online banking among older clients.

Interview schedule Table A4.3

General

1. Gender
2. Age
3. Education level
4. By which bank(s) are you active in online banking services?
5. For how long have you been with that bank and for what reason did you choose that bank?

General questions online banking services

6. For how long have you been using the online banking services? (restriction question, have to be at least for one year active)
7. Why did you start using online banking services?
8. How often do you use the online banking services in a month?
9. Why did you switch from traditional banking to online banking?
10. Which features of online banking do you use personally and most frequently?
11. Which services of online banking are for you the most important, thus indispensable? (why)
12. Do you use the bank site for other purpose except personal online banking? (when, how often)
13. Have you ever used the customer service of the bank concerning online banking, is the existence of this service important to you (why and when)?
14. Has online banking changed your relationship with the bank? (what channel do you communicate with your bank now mostly, how has this changed your relationship with your bank)
Variety seeking behavior regarding (online) banking services

15. Do you know how online banking services of other banks work? (if yes, how? what do you think about it and how does it differ from your own online banking services; if no, why not, when would you be interested in knowing that)?

16. Can you give me a description of the (searching/buying) process, when you want to buy a new bank product or service (loan, saving account, insurance)? (does the person compare bank products of their own bank with other banks)

17. Do you compare interest rates concerning your online current account and saving account with other banks?

Satisfaction regarding online banking

17. Are you overall satisfied concerning your own online banking services? (about what and why)

18. Are there certain things you are not satisfied about online banking services or things that can be improved?

Service qualities of online banking

19. Which attributes should an online banking service have, for you in order to use it?

20. Which attributes are for you the most important (indispensable) regarding online banking services?

Trust in online banking

21. Do you trust the online banking services? (security, privacy, reliability of performance)

22. Do you believe in the integrity of the bank itself? (why)

Customer loyalty to the bank

19. Are you planning to continue to use the online banking services at the same bank?

20. Would you recommend the online banking services to others? (why)

21. Do you say positive things about the online banking services you are using to others?

22. What would for you be a reason to switch banks? (why, how easy would you switch banks, what makes it easier/more difficult)

Results of qualitative analysis of the interview table A4.4
The interviewees were active in online banking of the three banks that dominate the retail banking market: ABN AMRO, Postbank or Rabobank. Interviewees represented different age groups (16-54) and different education level (medium-high). No significant difference in answers was noticed between the groups during the interview. Comparisons between groups would be useless, and the group will be discussed as a whole.

The overall majority of the interviewees were customer of only one bank, some of them had two, but that number was very small. Almost all of the interviewees had already been with same bank, before they started to use its online banking services. In addition, the overall majority of the interviewees had never been with another bank before, and had been with the same bank for almost all their life. The most given reason for choosing a bank, were either that their parents chose for them when they were young or their parents recommended it to them. Moreover, a significant number of interviewees chose for their bank because their bank offered them an attractive package, when they started working or studying. Other reasons that were given were:

1. ‘Back then the location of the branch was nearest to my home’
2. ‘I chose for the Postbank, because of all banks, they have the least of an appearance to be a bank’.
3. ‘I chose for the Postbank, because of all banks, they appear to be least interested to make money’.
4. ‘I switched to do my banking business with ABN AMRO instead of Postbank, because they have branches I can visit.’
5. ‘I chose for the Rabobank, because they are a cooperative organization, and therefore it seems that they put the well-being of their customer before making money’.
6. ‘I switched to another bank after I was married, because it was easier to have one joint account.’
7. ‘I chose the Rabobank, because I am convinced that my money will not be invested in weapons or other things I do not agree with’.

General questions concerning the bank portal

The number of years in which the interviewees were active in online banking services varied from two to five years. Most of the interviewees have been active in online banking for three or four years. The majority used online banking two to four times a month, and a small number five to six times a month.

The most mentioned reasons by almost all respondents for switching from traditional banking to online banking were:

1. Easy to use
2. Saves time
3. Money transfers are processed much faster, than the old fashioned way
4. It is up to date
5. The usage of online banking is free of charge
6. The online banking services are always available. It enables them to determine themselves when they want to do their banking business.
7. Everybody else is doing it, and they have good experiences with it.
8. They received an online-banking starting package, when they opened an account with the bank.

Paying bills and checking the status and history of the current account are the services that are used most frequently by all interviewees and for the overall majority actually solely. These two services were also considered to be absolutely indispensable in online banking services by all of them. All of the interviewees own besides the current account also an online saving account, which is mostly used as a back up account, in case their current account is out of money.

Furthermore, a very small number of the interviewees were also engaged in online trading at their bank. One interviewee was also engaged in online trading, and chose for another bank that was specialized in trading and offered lower prices.

The bank site itself was by all of the interviewees only used for personal online banking activities. The only other activity that was mentioned by many of them was looking for contact details of the bank.

No interviewee had ever used the customer services for their online banking services. The banks offer one general customer service that customers can contact. However, they do not have a customer service specialized on online banking issues. The interviewees told that in case the bank portal is out of reach, the portal displays the reason why (e.g. maintenance or technical). Thus, they know the bank is working on the problem and they can do nothing but wait until the problem is solved. Furthermore, they pointed out that banks solve the online banking problems fast, so they never have to wait too long. They stressed that they want to avoid personal contact with the bank as much as possible in online banking activities.

Variety seeking behavior regarding bankportal

The majority of the interviewees have been with only one bank for most of their lives. All of the interviewees were only familiar with the online banking services of their own bank. The given reason was: a registration is needed in order to see how other bank portals work. However, all of the three bank websites have demonstrations about their online banking services. Furthermore, almost everybody in the Netherlands is member of one of the three banks so they could have asked acquaintances. Furthermore it is important to inform, that all interviewees did not really show to have any interest in knowing how the online services of other banks work, because they were happy with their own bank.

According to the reaction of interviewees, when a customer wants to buy a new bank product, the buying process depends on the price of the bank product. If the customer wants to buy an expensive bank product such as a mortgage, they will compare the mortgage rate of different providers. Some of them pointed out that they would first try to negotiate with their own bank about a new product if it is cheaper at another bank, before buying the product at another bank, because they prefer to keep their banking business at one bank. If there is not so much on stake in terms of money, they will only look what their bank has to offer, because they prefer to do as many of their banking business within the same bank. Furthermore, the overall majority of the customers said that they would keep their current account, regardless whether they would buy a new bank product at their own bank or another bank.

None of the interviewees compared the deposit rate of their online current and saving account with other banks. The reason was that the deposit rate of banks is not that high, and among banks there is no significant difference. Many of them also pointed out that in the end
all deposit rates will end up more or less equally in the long term. They believed that banks have some kind of agreement among each other.

Satisfaction regarding bank portal

All of the interviewees were overall very satisfied about their online banking services. They like using online banking services because it is easy to use, time saving and it is 24/7 available. Furthermore, they were also satisfied about the reliability of the performance of online banking. As they say the online banking delivers its services as it promises. Almost all of the interviewee were satisfied about everything and could not think about ways to improve their online banking services. Even though, everybody was very satisfied, some of them did come with ideas to improve the online banking services, such as:

1. 'Online banking services would even be easier to handle if they would go further in the automation, like for example use finger prints or iris recognition.'
2. 'I would rather receive all of my bank transcripts by e-mail instead by regular mail.'
3. 'I would like that my bills were sent to my bank portal instantaneously instead of receiving it first at my home address and then I still have to fill in the bill on my bank portal.'
4. 'I would like to process the checks that I receive from my clients abroad on my bank portal, now I have to go to the bank to do it by myself.'
5. 'I would like that the online transaction time between two different banks is the same of online transaction time within one bank.'
6. 'I wish I could look in to the history of my current account much further.'
7. 'I would like to do my online banking activities also on my own mobile phone.'
8. 'Checks that I receive from abroad, I have to first send them to my bank, I would like to put them in work in my personal bank portal immediately.'
9. 'I wish that there would also be something like a national phonebook available on the website but then for bank account numbers'.

Service qualities of the bank portal

When asked to the interviewees which attributes an online banking service should have in order for them to be able to use it, they all gave similar answers. Namely,

1. The bank portal should always be available: day, nights and weekends
2. The design of the bank portal should be obvious, it should be easy to find on the bank portal to what you are looking for.
3. The speed of the bank portal should be fast. The web pages should load quickly and processing and the money transfers should be processed quickly.
4. The bank portal should be secure and guard your privacy. If you log in to your bank portal or do online transactions, nobody should be able to shadow you and/or catch personal data.
5. The web portal should be easy to use: easy to understand,
6. It should be easy to learn how to do online banking. The functions of online banking should be easy to learn by testing it by yourself.
7. The web portal should have efficient design; you should not do 4/5 steps in order for you to do for example a transaction.
8. Bank statements should be up to date.
9. The bank portal should do what you tell him to do and do what he says he does, thus performance should be reliable.

Other attributes of the online banking service that were mentioned by some interviewees, but not by the overall majority were:

1. ‘You should be able to make your own address book.’
2. ‘The bank portal should have a help function.’

When asked to the interviewees, which of the attributes that they mentioned, they found to be most important. Many of them responded, that they found all of the mentioned attributes important.

**Trust in the bank portal**

All of the interviewees were asked whether they trust the online banking services. All of them agreed that they trust the online banking services. When asked what was meant by trust. They all responded that they trust that the online banking services are safe and guard their privacy. This trust is based on the following reasons mentioned by most interviewees:

1. Online banking has been used for years by almost everybody and they have never heard negative stories on the media so far or recently.
2. It is in the bank’s own interest to keep their good image, so they trust that the bank invested enough money to develop a safe online banking system.
3. They never had any negative experiences with online banking regarding the security and privacy themselves and do not know anyone who has.

The customers trust their bank because of its good reputation based on reports of the media and others. The fact that there have not been stories in the media that the online banking service is unsafe, gives them no reason to not trust the online banking system. Furthermore, many of them pointed also out that their bank is well known and has a good reputation, which helps them trust the online banking system more.

Furthermore, many of them pointed also out that they trust that the bank will not expose their customer to an online banking system if they thought it would be unsafe. They simply think that their bank would never do that, and they can also not permit to do that, because it is in their best interest to have a safe system. The fact that many believed that the bank would never expose them to an unsafe system has to do with the integrity of the bank. When asked if they believe in the integrity of the bank, they all agreed. Many of them gave as reason that they do not really have a choice but to believe in it and the fact that their bank is a member of the Dutch bank.

For ABN AMRO and Rabobank users:

Concerning the log in and the online transactions. The code the bank portal gives you for your random reader is every time different and the code the random gives you for the bank portal is also every time different. Thus, the interaction between the bank portal and the customer gives them a feeling of trust.

For Postbank users:

When you want to do online transactions, the code you have to give the bank portal is every time different. If you choose to have the code send to your mobile phone and you are the only one who has the mobile phone with you. If you choose to have a paper in which
100 different codes are written, the bank portal asks to give for example code no 3, and after using that code, that code can never be used again for a transaction. So, you always have to fill in a new code when doing online transactions.

Other reasons that were also mentioned but less frequently were:
1. ‘You can check the address of the bank portal.’
2. ‘Secured website, the lock shows it on the low right side of the web site.’

All of the interviewees were satisfied about the reliability of the performance of online banking. As they say the online banking delivers its services as it promises.

**Customer loyalty to the bank portal**

All of the interviewees planned to continue to use the online services at the same bank because they were satisfied about their bank and did not see a reason to switch. Furthermore, all of them would also recommend their online banking services to others. However, they all mentioned that they would not just recommend to others their online banking services, only if there was a reason for doing it. This also holds true for saying positive things about their online banking services. Some of the interviewees noted that they have already recommended it to their parents, who mostly share the same bank, and were in the beginning a little bit hesitant when online banking services were introduced to the public.

Online banking has been introduced to the mainstream public for a couple of years, so it is not new anymore. The adoption rate of online banking is high and many have already used online banking for a couple of years, thus there are not that many customers left to win over. Recommending the online banking services to others was mostly done in the beginning when online banking was just introduced. Now, when they recommend others it is more about the usage of online banking, like for example how to determine the date of payment of a certain bill in advance.

When asked to the interviewees what for them a reason would be to switch banks, they found it difficult to look for reasons. Many of the interviewees pointed out that they have been with the same bank all of their live and they are satisfied and have never encounter serious problems. Therefore, they stressed that they know that their bank has been good to them, and thus they do not feel eager to switch to an unfamiliar bank, unless they feel that the bank has serious problems and their money would be in danger. They would feel that their money is in danger, if the media has negative reports about their bank.

Furthermore, many of them stressed that another reason why they would not be so eager to switch is that it gives you a lot of work. In addition, many of them could not imagine that other banks have much better offers, and if so, then some of them would first try to negotiate with their own bank.

Furthermore, some pointed out online banking services should stay free and if the subscription costs of online banking would become high, they would consider thinking about switching. However, many of them also pointed that this case is not likely, since online banking has been on the market for a couple of years and have managed to be free of charge until now. Many of them pointed also out that it is in the interest of the bank that online banking is free of charge because customers are used to it. In case one bank would ask for subscription costs, many of them believed that other banks would also follow, because they believe the banks have among each other price agreements.

It was also asked if they were sensitive to differences in deposit and loan rates. The majority pointed that the goal of a current account is doing banking business (receive salary, pay bills) and it is not used as an investment. Furthermore the deposit rate is not that high and they feel there is no significant difference with the deposit rate of other banks. All of
interviewees were for that reason not sensitive for deposit rates, many of them had not even wondered about the deposit rate of other banks.

All of the interviewees were sensitive for the rate of a saving account, but only if they were serious in saving, thus only putting the money in a saving account and leaving it. The online saving account is used by all of the interviewees because it is already there. However, it not used for serious long term saving, but as an account, where they put money if they feel there is too much money on their current account.

When choosing a loan all of the interviewees would also compare rates of different banks. They stressed that in a loan it is more important to compare because you have to pay the bank. However, this question was very hypothetical for the overall majority of the interviewees since hardly anyone has ever taken a loan before or is planning to do that in the future.
**Roadmap of study measures A4.5**

<table>
<thead>
<tr>
<th>Construct</th>
<th>Definition</th>
<th>Items</th>
<th>Question No.</th>
<th>Reference</th>
<th>Code</th>
<th>Hypothesis</th>
</tr>
</thead>
<tbody>
<tr>
<td>Perceived service quality of the bank portal by customer</td>
<td>The cognitive response by the customer concerning the perceived service quality of the bank portal solely on dimensions found in the qualitative analysis</td>
<td>Ease of use</td>
<td>1</td>
<td>Interview</td>
<td>SQUAL1</td>
<td>H1: Customers' perceived service quality of bank portal will positively affect customers' overall satisfaction of the bank portal.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>I find it easy to log in to my bank portal</td>
<td>I find it easy to log in to my bank portal</td>
<td>2</td>
<td>Interview</td>
<td>SQUAL2</td>
</tr>
<tr>
<td></td>
<td></td>
<td>I find it easy to do online funds transfers via my bank portal</td>
<td>I find it easy to do online funds transfers via my bank portal</td>
<td>3</td>
<td>Interview</td>
<td>SQUAL3</td>
</tr>
<tr>
<td></td>
<td></td>
<td>I find it easy to pay the bill via my bank portal</td>
<td>I find it easy to pay the bill via my bank portal</td>
<td>4</td>
<td>Interview</td>
<td>SQUAL4</td>
</tr>
<tr>
<td></td>
<td></td>
<td>My bank portal offers easy navigation</td>
<td>My bank portal offers easy navigation</td>
<td>5</td>
<td>Interview</td>
<td>SQUAL5</td>
</tr>
<tr>
<td></td>
<td></td>
<td>When doing an online transaction my bank portal guides me step by step</td>
<td>When doing an online transaction my bank portal guides me step by step</td>
<td>6</td>
<td>Interview</td>
<td>SQUAL6</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Only a few clicks are needed in order for me to make an online transaction</td>
<td>Only a few clicks are needed in order for me to make an online transaction</td>
<td>7</td>
<td>Interview</td>
<td>SQUAL7</td>
</tr>
<tr>
<td></td>
<td></td>
<td>It does not take much time to learn the handling of my bank portal</td>
<td>It does not take much time to learn the handling of my bank portal</td>
<td>8</td>
<td>Interview</td>
<td>SQUAL8</td>
</tr>
<tr>
<td></td>
<td>The clarity of the design</td>
<td>The design of my bank portal enables me to find important things at first sight</td>
<td>The design of my bank portal enables me to find important things at first sight</td>
<td>9</td>
<td>Montoya Weiss, Vos, Grewal (2003)</td>
<td>SQUAL9</td>
</tr>
<tr>
<td></td>
<td></td>
<td>The lay-out of my bank portal provides a clear structure</td>
<td>The lay-out of my bank portal provides a clear structure</td>
<td>10</td>
<td></td>
<td>SQUAL10</td>
</tr>
<tr>
<td></td>
<td>Speed</td>
<td>The pages of my bank portal load quickly</td>
<td>The pages of my bank portal load quickly</td>
<td>11</td>
<td>Interview</td>
<td>SQUAL11</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Online transactions are processed quickly by my bank portal</td>
<td>Online transactions are processed quickly by my bank portal</td>
<td>12</td>
<td>Interview</td>
<td>SQUAL12</td>
</tr>
<tr>
<td></td>
<td>Timeliness</td>
<td>The bank statement that my bank portal shows is up to date</td>
<td>The bank statement that my bank portal shows is up to date</td>
<td>13</td>
<td>Interview</td>
<td>SQUAL13</td>
</tr>
<tr>
<td></td>
<td>Availability</td>
<td>My bank portal is always available</td>
<td>My bank portal is always available</td>
<td>14</td>
<td>Interview</td>
<td>SQUAL14</td>
</tr>
<tr>
<td>Overall satisfaction of the bank portal by customer</td>
<td>Customers' cumulative impression of the service performance of the bank portal</td>
<td>My bank portal had done a good job for me so far.</td>
<td>22</td>
<td>Interview</td>
<td>OSAT1</td>
<td>H3: Customers' trust in the bank portal will positively influence their overall satisfaction of the bank portal.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>My bank portal has met my expectations</td>
<td>My bank portal has met my expectations</td>
<td>23</td>
<td>Wang et al., 2001; Doll et al., 1995; Palvia, 1996; Rai et al., 2002.</td>
<td>OSAT2</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Overall, I am satisfied with my bank portal</td>
<td>Overall, I am satisfied with my bank portal</td>
<td>24</td>
<td>Interview</td>
<td>OSAT3</td>
</tr>
<tr>
<td>Construct</td>
<td>Definition</td>
<td>Items</td>
<td>Question No.</td>
<td>Reference</td>
<td>Code</td>
<td>Hypothesis</td>
</tr>
<tr>
<td>-----------</td>
<td>------------</td>
<td>-------</td>
<td>--------------</td>
<td>-----------</td>
<td>------</td>
<td>------------</td>
</tr>
<tr>
<td>Trust in the bank portal by customer</td>
<td>confidence in the exchange bank portal's reliability and bank's integrity</td>
<td>Reliability</td>
<td>14</td>
<td>Interview</td>
<td>TRUS1</td>
<td>H3: Customers' trust in the bank portal will positively influence their overall satisfaction of the bank portal.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>My bank portal can be counted on to successfully complete my transactions.</td>
<td>My bank portal can be counted on to successfully complete my transactions.</td>
<td>15</td>
<td>Gerard and Cunningham 2006</td>
<td>TRUS2</td>
</tr>
<tr>
<td></td>
<td></td>
<td>My bank portal does what is says/promises</td>
<td>My bank portal does what is says/promises</td>
<td>16</td>
<td>Interview</td>
<td>TRUS3</td>
</tr>
<tr>
<td></td>
<td></td>
<td>The bank statement that my bank portal shows is correct</td>
<td>The bank statement that my bank portal shows is correct</td>
<td>17</td>
<td>Interview</td>
<td>TRUS4</td>
</tr>
<tr>
<td></td>
<td>Security and Privacy</td>
<td>26. I feel secure in making online transactions with my bank portal services</td>
<td>26. I feel secure in making online transactions with my bank portal services</td>
<td>16</td>
<td>Interview</td>
<td>TRUS4</td>
</tr>
<tr>
<td>Customer loyalty response to the bank portal</td>
<td>Active loyalty behavior of the customer to the bank of the bank portal in two dimensions: positive word of mouth and reuse intentions</td>
<td>I would recommend my bank portal to those who seek my advice about such matter</td>
<td>27</td>
<td>Mols (1998)</td>
<td>ALOY1</td>
<td>H4: Customers’ trust in the bank portal will positively influence its loyalty to the bank portal</td>
</tr>
<tr>
<td>---------------------------------------------</td>
<td>-----------------------------------------------------------------------------------------------------------------</td>
<td>------------------------------------------------------------------</td>
<td>---</td>
<td>--------------------------------</td>
<td>------------------</td>
<td>-------------------------------------------------</td>
</tr>
<tr>
<td></td>
<td></td>
<td>I would say positive things about my bank portal to others</td>
<td>28</td>
<td>ALOY2</td>
<td>ALOY4</td>
<td>H5: Customers’ overall satisfaction in the bank portal will positively influence its loyalty to the bank portal</td>
</tr>
<tr>
<td></td>
<td></td>
<td>I would encourage friends and relatives to use my bank portal</td>
<td>29</td>
<td>ALOY3</td>
<td>ALOY5</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Future intention use</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>As long as my present bank portal exists, I will continue to use it.</td>
<td>25</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>If my bank would offer new bank portal services in the future, I am open to use it.</td>
<td>26</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Reputation of the bank portal</td>
<td>The reputation of the bank and the bankportal itself. The definition of reputation itself is adapted from Charles Fombrun’s (1998), which is “a perceptual representation of a company’s past actions and future prospects that describes the firm’s overall appeal to all of its key constituents when compared with other leading rivals” (p. 72).</td>
<td>My bank is well known</td>
<td>30</td>
<td>Jarvenpaa, Tractinsky and Vitale 2000</td>
<td>REPU1</td>
<td>H7: A good reputation of the bank will have a moderating positive effect on the trust-loyalty relationship of the customer.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>My bank has a good reputation</td>
<td>31</td>
<td></td>
<td>REPU2</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>My bank portal has a good reputation</td>
<td>32</td>
<td></td>
<td>REPU3</td>
<td></td>
</tr>
<tr>
<td>Switching costs of the bank portal</td>
<td>The time and effort it takes for a customer to switch to another bank.</td>
<td>It takes me a great deal of time and effort to get used to another bank</td>
<td>36</td>
<td>Reference</td>
<td>SWIT1</td>
<td>H8: High switching costs will have a moderating positive effect on the satisfaction-loyalty relationship of the customer</td>
</tr>
<tr>
<td>-----------------------------------</td>
<td>---------------------------------------------------------------------</td>
<td>---------------------------------------------------------------------</td>
<td>----</td>
<td>-----------</td>
<td>-------</td>
<td>-------------------------------------------------------------</td>
</tr>
<tr>
<td></td>
<td></td>
<td>It costs me too much time and effort to switch to another bank</td>
<td>37</td>
<td></td>
<td>SWIT2</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>In general it would be a hassle switching to another bank</td>
<td>38</td>
<td></td>
<td>SWIT3</td>
<td></td>
</tr>
<tr>
<td>Control variable</td>
<td>Definition</td>
<td>Question No.</td>
<td></td>
<td>Code</td>
<td></td>
<td>Hypothesis</td>
</tr>
<tr>
<td>Same bank all their life</td>
<td>The customer has been with the same bank all his/her life</td>
<td>For how long have you been customer with your main bank?</td>
<td>44</td>
<td>Interview</td>
<td>SAME1</td>
<td>H8: Customers that have been with the same bank for all their lives will have a positive moderating influence on the trust-customer loyalty relationship.</td>
</tr>
</tbody>
</table>
### Rotated component matrix table B5.1

<table>
<thead>
<tr>
<th>Component</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
<th>8</th>
<th>9</th>
</tr>
</thead>
<tbody>
<tr>
<td>SQUAL2</td>
<td>0.772</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>SQUAL3</td>
<td>0.769</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>SQUAL4</td>
<td>0.733</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>SQUAL1</td>
<td>0.72</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>SQUAL5</td>
<td>0.621</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>SQUAL7</td>
<td>0.519</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>SQUAL5</td>
<td>0.469</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>OSIAT1</td>
<td>0.754</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>OSIAT2</td>
<td>0.748</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>OSIAT3</td>
<td>0.723</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>SQUAL14</td>
<td>0.636</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>TRUS5</td>
<td>0.713</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>TRUS4</td>
<td>0.713</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>TRUS2</td>
<td>0.703</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>TRUS1</td>
<td>0.647</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>SQUAL8</td>
<td>0.454</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>ALOY3</td>
<td>0.73</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>ALOY5</td>
<td>0.634</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>ALOY1</td>
<td>0.433</td>
<td></td>
<td>0.622</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>ALOY4</td>
<td>0.578</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>ALOY2</td>
<td>0.47</td>
<td>0.577</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>TRUS8</td>
<td>0.792</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>TRUS7</td>
<td>0.733</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>TRUS6</td>
<td>0.695</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>REPU2</td>
<td>0.705</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>REPU1</td>
<td>0.69</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>REPU3</td>
<td>0.611</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>SQUAL10</td>
<td>0.827</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>SQUAL9</td>
<td>0.77</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>SQUAL11</td>
<td>0.522</td>
<td>0.41</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>SQUAL13</td>
<td>0.73</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>TRUS3</td>
<td>0.659</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>SQUAL12</td>
<td>0.445</td>
<td>0.514</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>SWIT1</td>
<td>0.853</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>SWIT2</td>
<td>0.844</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>SWIT3</td>
<td>0.64</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Discussion B5.2

The three questions about overall satisfaction load perfectly on one factor. However, also the SQUAL14 loads on this factor. The loading of this factor is 0.636 is not as high, and SQUAL14 has a communality of 0.562 which is quite low, therefore this item should be deleted. The question of SQUAL14 was: The bank portal is always available. The fact that this factor loads on overall satisfaction, has likely to do that availability is more obvious important for overall satisfaction than the other dimensions of perceived service quality.

The four questions that measure the trust of the customer defined in the two dimensions reliability (TRUS1, TRUS2) and Security and Privacy (TRUS4, TRUS5) load perfectly on one factor. However, also SQUAL8 loads on this factor with a value of 0.45 and a communality of 0.402, which is quite low, thus this item should be deleted. The question was: I have learned online banking primarily by testing myself. This question is less likely to be true for all respondents compared to the other questions of the ease of use dimension. Most people would agree that online banking is easy, but that does not necessarily mean that they learned all the function by themselves. The respondents that are very active online would have agreed with this question, but the majority not.

The five questions (ALOY1, ALOY2, ALOY3, ALOY4, ALOY5) that measure the construct loyalty also load perfectly on one factor. The three questions about reputation and switching costs all load perfect on their own construct.

The two questions that measure the dimension clarity of design of the construct perceived service quality load on one factor, but also SQUAL11 which is a questions that measures the dimension speed of the construct perceived services quality loads on that factor. SQUAL11 has a factor loading of 0.522 for the dimension speed and a factor loading of 0.41 with its own dimensions. SQUAL11 loads less on the dimension it is supposed to measure. Therefore, SQUAL11 is a weak question and should be deleted. SQUAL11 measure the speed of the pages of the bank portal. This question is difficult for the respondent to answer, because the differences in speed of web pages is not visible with the naked eye, unless the pages of the bank portal are undeniable slow, which is not the case. This question appears to be irrelevant in an online banking context.

Two other questions about perceived service quality together with one question about trust load on the same factor. The factor loading of TRUS3 is 0.659 and has a communality of 0.731. TRUS3 measures whether the bank statement that the bank portal shows is correct. SQUAL13, that measures the timeliness of the bank statement loads on the same factor. It is logic that both these item would load on the same factor. TRUS3 measures the reliability of the bank portal and SQUAL13 the timeliness of the bank portal. In this study, reliability of the bank portal is part of the trust construct and timeliness is part of the perceived service quality construct. A good explanation is that the correctness of the bank account is easy measurable by the customer itself and therefore is more a cognitive response instead of an affective response in the framework of Oliver. Therefore, in the next paragraph if the CFA does not fit well, it will be experimented whether questions from the reliability dimensions yield a better fitting placed in the perceived service quality dimension.
Discussion B5.3

The construct SQUAL consists of 14 items, of which the factor loadings range from 0.28 to 0.82. SQUAL1 to SQUAL8 are questions concerning the dimension, ease of use. SQUAL8 has a very low factor loading of 0.24, low reliability of 0.06 and an error variance of 0.94 that is higher than the factor loading. Furthermore, EFA also proposed to delete this item. Therefore, SQUAL8 should be deleted.

SQUAL5 has a low factor loading of 0.46, low reliability of 0.16 and an error variance of 0.84 that is higher than its factor loading. SQUAL5 measured whether the bank portal guides the respondent step by step when doing an online transaction. The low factor loading has to do that some respondents would appreciate it if the bank portal guides them step by step, and therefore read all the steps that the bank portal shows. Others would find it disturbing to read all the step-by-step messages, and therefore do not let the bank portal guide them step by step. Whether this questions measure the ease of use depends thus on the nature of the respondent. Therefore, SQUAL5 is deleted.

SQUAL2 and SQUAL3 have a high correlation of 0.77, of which SQUAL2 has the higher factor loading and reliability, and the lower error variance. Thus, SQUAL3 should be deleted taken from a statistical view. The question of SQUAL2 is: I find it easy to do online funds transfers via my online banking. The question of SQUAL3: I find it easy to pay the bill via my online banking. Based on the formulation of the question, it is better to keep SQUAL2 because the concept fund transfer is wider, thus SQUAL3 is integrated in SQUAL2. Thus, SQUAL3 is deleted.

SQUAL1 measures whether the respondent finds it easy to log on his/her bank portal. This question measures actually something that is so obvious, that it would be irrelevant to use it to measure the ease of use of the bank portal. Therefore, SQUAL1 is deleted.

SQUAL9 and SQUAL10 measure the dimension clarity of design. The correlation between the two items is 0.77. SQUAL9 has the higher factor loading, higher reliability and error variance and should therefore not be deleted from a statistical perspective. SQUAL9 asks whether the design of the bank portal enables him/her to find important things at first sight. SQUAL10 asks whether the layout of the bank portal provides a clear structure. SQUAL10 can be interpreted more differently depending what the respondent finds a clear structure. Therefore, SQUAL9 is deleted.

SQUAL11 and SQUAL12 measure the dimension speed. SQUAL11 measures the speed of the bank portal and SQUAL12 of the money transactions. Websites and web portals are active for years in cyberspace and it has become obvious that web pages should load quickly. Nowadays, it is difficult to observe if one website loads pages more quickly than others, because they all load quickly. The SQUAL11 question seems in the real world more than obvious and thus irrelevant to measure the perceived service quality. SQUAL12 is more relevant, it is important for the customer that all fund transfers are processed as quickly as possible. Therefore, SQUAL 11 is omitted.

SQUAL13 is an item that measures the timeliness of the bank account, but has a low factor loading of 0.42 and reliability of 0.25 and an error variance of 0.75 that is higher than the factor loading. Statistics show that this item is very weak, and should therefore be deleted. SQUAL14 has a low factor loading of 0.42 and reliability of 0.17 and an error variance of 0.83 of twice the size of its factor loading. In addition, SQUAL14 was also proposed by EFA to be omitted. Therefore, SQUAL 14 should be deleted.

The TRUS constructs shows factor loadings around 0.7 for the integrity dimension (TRUS6-TRUS8), thus these can all be retained. TRUS1 and TRUS2 that represent the reliability have low factor loadings around 0.5. The two have a high correlation of 0.69, thus one of them can be deleted. TRUS1 is defined by my bank portal can be counted on to
successfully complete my transactions. TRUS2 is defined by my bank portal does what is
says/promises. TRUS1 is actually integrated in TRUS2, and therefore TRUS1 should be
skipped. TRUS3 has also a low factor loading, and measures whether the bank account
overview shows the right info. This question is already integrated in TRUS2, and therefore
seems superfluously. Thus, TRUS2 should be omitted. TRUS4 and TRUS5 both have a high
correlation of 0.75, and measure the security and privacy. TRUS4 measures the sense of
security in online transactions and TRUS5 measures the sense of security in personal
information. If one question should be chosen it is better to choose TRUS5, because TRUS4
is a bit integrated in this question. Namely, personal information is send when doing online
transaction. Therefore, TRUS4 should be omitted.
The construct ALOY has factor loadings ranging from 0.41 to 0.87, thus all items can be
kept. ALOY4 and ALOY5 measure the dimension intention to continue using of which the
factor loadings are around 0.5. ALOY4 has the better factor loading, reliability and error
variance. ALOY4 measures whether the respondent has intentions to continue using online
banking. ALOY5 measure if the respondent would be interested in new services of online
banking. The first question is more general and measures the dimension better. Therefore,
ALOY5 is omitted.

<table>
<thead>
<tr>
<th>Items</th>
<th>Standard factor loading</th>
<th>Indicator reliability</th>
<th>Error Variance</th>
</tr>
</thead>
<tbody>
<tr>
<td>SQUAL</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>SQUAL2</td>
<td>0.68</td>
<td>0.46</td>
<td>0.54</td>
</tr>
<tr>
<td>SQUAL4</td>
<td>0.73</td>
<td>0.54</td>
<td>0.46</td>
</tr>
<tr>
<td>SQUAL6</td>
<td>0.56</td>
<td>0.31</td>
<td>0.69</td>
</tr>
<tr>
<td>SQUAL7</td>
<td>0.63</td>
<td>0.40</td>
<td>0.60</td>
</tr>
<tr>
<td>SQUAL9</td>
<td>0.57</td>
<td>0.33</td>
<td>0.67</td>
</tr>
<tr>
<td>SQUAL1</td>
<td>0.56</td>
<td>0.32</td>
<td>0.68</td>
</tr>
<tr>
<td>2</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>TRUS2</td>
<td>0.51</td>
<td>0.26</td>
<td>0.74</td>
</tr>
<tr>
<td>OSAT</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>OSAT1</td>
<td>0.83</td>
<td>0.69</td>
<td>0.31</td>
</tr>
<tr>
<td>OSAT2</td>
<td>0.90</td>
<td>0.80</td>
<td>0.20</td>
</tr>
<tr>
<td>OSAT3</td>
<td>0.86</td>
<td>0.75</td>
<td>0.25</td>
</tr>
<tr>
<td>TRUS</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>TRUS5</td>
<td>0.49</td>
<td>0.24</td>
<td>0.76</td>
</tr>
<tr>
<td>TRUS6</td>
<td>0.86</td>
<td>0.74</td>
<td>0.26</td>
</tr>
<tr>
<td>TRUS7</td>
<td>0.90</td>
<td>0.80</td>
<td>0.20</td>
</tr>
<tr>
<td>TRUS8</td>
<td>0.83</td>
<td>0.69</td>
<td>0.31</td>
</tr>
<tr>
<td>REPU</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>REPU1</td>
<td>0.58</td>
<td>0.34</td>
<td>0.66</td>
</tr>
<tr>
<td>REPU2</td>
<td>0.81</td>
<td>0.66</td>
<td>0.34</td>
</tr>
<tr>
<td>REPU3</td>
<td>0.73</td>
<td>0.54</td>
<td>0.46</td>
</tr>
<tr>
<td>ALOY</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>ALOY1</td>
<td>0.86</td>
<td>0.74</td>
<td>0.26</td>
</tr>
<tr>
<td>ALOY2</td>
<td>0.88</td>
<td>0.77</td>
<td>0.23</td>
</tr>
<tr>
<td>ALOY3</td>
<td>0.62</td>
<td>0.38</td>
<td>0.62</td>
</tr>
<tr>
<td>ALOY4</td>
<td>0.51</td>
<td>0.26</td>
<td>0.74</td>
</tr>
<tr>
<td>SWIT</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>SWIT1</td>
<td>0.80</td>
<td>0.65</td>
<td>0.35</td>
</tr>
<tr>
<td>SWIT2</td>
<td>0.75</td>
<td>0.56</td>
<td>0.44</td>
</tr>
<tr>
<td>SWIT3</td>
<td>0.48</td>
<td>0.23</td>
<td>0.77</td>
</tr>
</tbody>
</table>
### table B5.5

<table>
<thead>
<tr>
<th>Construct</th>
<th>Composite reliability</th>
<th>Variance extracted</th>
</tr>
</thead>
<tbody>
<tr>
<td>SQUAL</td>
<td>0.80</td>
<td>0.37</td>
</tr>
<tr>
<td>OSAT</td>
<td>0.90</td>
<td>0.75</td>
</tr>
<tr>
<td>TRUS</td>
<td>0.86</td>
<td>0.62</td>
</tr>
<tr>
<td>REPU</td>
<td>0.75</td>
<td>0.51</td>
</tr>
<tr>
<td>ALOY</td>
<td>0.82</td>
<td>0.54</td>
</tr>
<tr>
<td>SWIT</td>
<td>0.73</td>
<td>0.48</td>
</tr>
</tbody>
</table>

### table B5.6

<table>
<thead>
<tr>
<th>Squared correlations</th>
<th>SQUAL</th>
<th>OSAT</th>
<th>TRUS</th>
<th>REPU</th>
<th>ALOY</th>
<th>SWIT</th>
</tr>
</thead>
<tbody>
<tr>
<td>SQUAL</td>
<td>1.00</td>
<td>0.50</td>
<td>0.25</td>
<td>0.23</td>
<td>0.44</td>
<td>0.00</td>
</tr>
<tr>
<td>OSAT</td>
<td>0.50</td>
<td>1.00</td>
<td>0.29</td>
<td>0.18</td>
<td>0.50</td>
<td>0.00</td>
</tr>
<tr>
<td>TRUS</td>
<td>0.25</td>
<td>0.29</td>
<td>1.00</td>
<td>0.41</td>
<td>0.41</td>
<td>0.00</td>
</tr>
<tr>
<td>REPU</td>
<td>0.23</td>
<td>0.18</td>
<td>0.41</td>
<td>1.00</td>
<td>0.17</td>
<td>0.00</td>
</tr>
<tr>
<td>ALOY</td>
<td>0.44</td>
<td>0.50</td>
<td>0.24</td>
<td>0.17</td>
<td>1.00</td>
<td>0.00</td>
</tr>
<tr>
<td>SWIT</td>
<td>0.00</td>
<td>0.00</td>
<td>0.00</td>
<td>0.00</td>
<td>0.00</td>
<td>1.00</td>
</tr>
</tbody>
</table>

### table B5.7

- **Chi-Square for Independence Model with 276 Degrees of Freedom = 847**
- **Independence CFI = 0.957**
- **Saturated CFI = 0.06**
- **Independence RMSEA = 0.032**
- **Saturated RMSEA = 0.06**
- **NFI = 0.99**
- **Normed Fit Index (NFI) = 0.99**
- **Normed Chi-Square (NCFI) = 0.99**
- **Incremental Fit Index (IFI) = 0.99**
- **Relative Fit Index (RFI) = 0.99**
- **Cutoff for Model: 0.6**
- **Root Mean Square Residuals: 0.03**
- **Goodness of Fit Index (GFI) = 0.99**
- **Adjusted Goodness of Fit Index (AGFI) = 0.99**
- **Proportion of Non-Unique Variance Explained: 0.99**