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Heikki Karjaluoto

ELECTRONIC BANKING IN FINLAND

Consumer Beliefs, Attitudes, Intentions, and Behaviors

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UNIVERSITY OF JYVÄSKYLÄ

JYVÄSKYLÄ 2002

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Editors
Tuomo Takala
Faculty of Business and Economics, University of Jyväskylä
Pekka Olsbo and Marja-Leena Tynkkynen
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ABSTRACT

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This study focuses on developing a theoretical model with a practical justification within the field of electronic banking. We ground our discussion on the framework of consumer behavior and electronic banking by linking attitude research and electronic business research. Thus, the purpose of this dissertation is to determine those factors that influence the formation of consumer attitude toward electronic banking. Another important aspect of this study is to develop more insights into how attitude toward technology in general impacts on consumer behavior in an IT-environment. The electronic banking literature lacks empirical evidence about how a person's attitude affects their choice of financial service delivery channel. Therefore, another objective of this study is to identify the beliefs, attitudes, and intentions consumers have toward electronic banking. By means of 30 in-depth interviews and a mailed questionnaire (1167 responses), we found that 39 percent of the Finnish consumers who responded to this survey are already using Internet banking services in their homes or workplaces. The results of the study indicate the following: (1) beliefs and attitudes toward electronic banking varied between non-users and users of Internet banking. The results suggest that well educated and relatively wealthy segment uses Internet banking services. Internet banking was considered a fast way to take care of banking affairs. (2) Personal banking experience, and prior experience of computers and technology were the main factors underlying the formation of attitude toward Internet banking. Attitude toward using computers was found to be the most significant factor affecting intention to engage in Internet banking. Internet banking users had a more positive attitude toward technology, especially toward computers, than did nonusers. (3) A negative attitude toward technology, valuing personal service, and demographic characteristics were found to be most substantial barriers to the adoption of Internet banking in Finland.

Keywords: consumer attitudes, consumer behavior, electronic banking, information technology, financial services, Finland, Fishbein model, Internet

Author's address Heikki Karjaluoto
University of Oulu
Faculty of Economics and Industrial Management
P.O.Box 4600
FIN90014 OULU
Finland
Tel.: +358-40-5361 636
E-mail: heikki.karjaluoto@oulu.fi

Supervisor Professor Tapio Pento
University of Jyväskylä
School of Business and Economics

Reviewers Professor Barry Howcroft
Loughborough University Business School
Director of Loughborough University Banking Centre

Professor Henrikki Tikkanen
Helsinki University of Technology
Department of Industrial Engineering and Management
Institute of Strategy and International Business

Opponent Professor Barry Howcroft
Loughborough University Business School
Director of Loughborough University Banking Centre

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Jyväskylä, January 2002

Heikki Karjaluoto

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1 INTRODUCTION

It is commonly accepted in the financial industry that the 2000s is probably the most exciting time in history to be studying financial markets and institutions. In Finland, the current trend is the movement from traditional branch banking to electronic banking, which provides many benefits, challenges, and also opportunities for the whole banking sector. Let us begin the discussion of electronic banking with the phrase *supply creates its own demand*, which is known as Say's Law, after the French economist Jean Baptiste Say. Nobody could have predicted that electronic banking would become so popular in Finland.

> ”It is wrong to say that demand creates supply. It is the other way around.”
> (Henry Ford)
>
> “Supply creates its own demand.”
> (Jean Baptiste Say 1971)

According to the so-called supply-side economics, which this particular study also is about, supply always comes before demand in the economic pecking order. It has been argued in many studies that information technology, or better, the information revolution, will fundamentally change the way banks and other financial institutions operate. To be more precise, the technological achievements in communication, data processing, security, and the Internet have helped in make electronic banking the success it has become. The fundamental purpose of this study is to shed light on the understanding of this supply-demand phenomenon by studying consumer beliefs, attitudes, intentions, and behaviors toward electronic retail banking in Finland.

1.1 Motivation for the study

The new paradigm, the consumer shift from traditional branch banking

to more stand-alone banking delivery channels, was the motivation for studying consumers and their behaviors. Borrowing some ideas from a well-known supply-side economist, Joseph Schumpeter (1964), who received his Ph.D. in 1906 at only 23 years of age, it is of primary importance for banks to know the customer. As he put it:

> "It is important for the functioning of the system that the banker should know, and be able to judge, what his credit is used for and that he should be an independent agent. To realize this is to understand what banking means…Even if he confines himself to the most regular of commodity bills and looks with aversion on any paper that displays a suspiciously round figure, the banker must not only know what the transaction is which he is asked to finance and how it is likely to turn out, but he must also know the customer, his business, and even his private habits, and get, by frequently, *talking things over with him*, a clear picture of his situation."

In broad terms, the present study aims, as the title "Electronic Banking in Finland: Consumer Beliefs, Attitudes, Intentions, and Behaviors" indicates, to explore the world of electronic banking through the eyes of the consumer, and by so doing seeks to increase the understanding of consumer attitude formation and behaviors. While attempting to provide a specific understanding of electronic banking from a consumer perspective, the study also aims at developing practical guidelines for banks and other financial institutions. As Schumpeter stated, it is extremely vital for managers to know their customers and understand their behaviors.

The relevant concepts used in this study derive from the literature of consumer behavior and Internet research. While the concepts are discussed in detail in the following chapters, we briefly introduce them here. Beginning with the two first words in the title of this dissertation we come up against the concept of electronic banking.

In this study, *electronic banking* is defined as private banking via an electronic device such as computer, mobile phone, traditional telephone or digital television. However, electronic banking in this context does not include ATM banking. The concept electronic banking comprises at present transactions such as payments, account transfers, investments, and taking out insurances.

A *belief* is a descriptive thought a person holds about something. Beliefs are based on knowledge, faith, opinion, and may carry an emotional charge (Kotler et al. 1999, 249). Beliefs lead to the formation of attitudes. Therefore, *attitude* refers to the overall evaluation of an object. Attitudes are personal feelings that influence a person's tendency to act in a particular way. *Intention* is understood as a function of certain beliefs. Intention is closely related to behavior because behavioral intentions are viewed as major determinants of a person's actual behavior. In this study, we for instance, enquired into intentions to Internet banking. In broad terms, *behavior* is a manner of behaving; a mode of conducting oneself. Behavior refers in the present study to individuals' banking behavior.

As stated, the motivation for this study arose out of the rapid development of electronic banking delivery channels in Finland. Beginning in the mid-1990s, there has been a move toward using personal computers in private banking. In particular, the emergence of the Internet has had a

significant impact on the diffusion of electronic banking. As a result, electronic banking, especially Internet banking, is the latest delivery channel to be offered by banks and there is wide agreement that this channel will have a significant impact on the bank market. Since 1996, after the launch of the first Internet based banking service, the number of Internet bankers has grown at an enormous pace. The main delivery channel for electronic banking today is the Internet, and the growth of electronic banking as a delivery channel depends heavily on the development of the Internet.

The Internet is a technology that is spreading faster than any other technology. It is totally changing the way people work and live. The use of the Internet doubles every hundred days.

> "If you don't see the Internet as an opportunity, it will be a threat."
> (Tony Blair, UK Prime Minister)

The commercialization of the Internet was only started in 1995. By the year 1999 the Internet had reached over 50 million people. In the beginning of the year 2000 there were over 70 million computers connected to the Internet and this development is accelerating at an enormous speed. Moreover, eMarketer estimate that within the next three to four years, the number of people connected is likely to reach the 350-million mark worldwide (Forrester Research 2000; eMarketer 2000). The developed countries are in the lead in the rankings. Over half of the entire network connections are located in the US. However, Finland leads in the number of connected computers per capita: over 110 connected computers per 100 000 inhabitants (Forrester Research 2000; Statistics Finland 2000). The future of the Internet has been discussed widely in the literature. According to Nokia (2000), by the year 2003 there will be over a billion Internet connections, and over a half of these will function via mobile phones. Internet access via the mobile phone also brings new dimension to electronic banking. In the future it will be possible to take care of all bank transactions via a mobile phone and the meaning of time and place will disappear in banking. At present, mobile phone penetration is around 25 percent across Europe as a whole and is likely to exceed 100 percent in some countries by the year 2002 (Internet Economy Indicators 2000). Moreover, according to Birch (1999) computers may not necessarily be absolutely the best platforms for the delivery of financial services, which means that wireless mobile technology has been loaded with a lot of expectations in the banking industry (see Hulkko 2000).

The Internet's brilliant success derives in part from its global scale and simple access to information (Berners-Lee et al. 1994). Surveys concerning the typical profile of Internet users suggest that the original user base is changing in the direction of broader population. This universialization of the Internet has become important for many organizations offering services via the Internet (O'Mahony et al. 1997, 3). It is no news that the Internet is an excellent delivery vehicle for private banking. For this reason, much of the electronic banking literature has focused on providing estimations of Internet growth rates and the numbers of people connected. However, estimates about the growth of the Internet society must be evaluated critically. Moreover, simple access to

information provides many opportunities for traditional players in the financial markets. Thus, it is no surprise that the Internet has been recognized as an excellent delivery vehicle for private and corporate banking.

The final motivation for this study came from the reason that electronic banking has become popular, especially in Finland and other parts of Scandinavia, for a variety of reasons. Explaining the facts that have made the electronic banking technology so acceptable in these countries is not as simple as it sounds. The explanations to be made concern long geographical distances, the positive attitude of people toward new technologies, and rapid economic growth (Pantzar 1996, 136-137). However, the Internet has also been criticized. Critics often question the need for such a system. To answer these criticisms, the network of networks has often been compared to the history of railroads. Imagine the situation in the US in the 18th century. The only means of transportation in those days was walking, riding or shipping. During the construction of the railroads, people heavily criticized their necessity. Fundamentally, it was the question of opposing change. After some years, the railroads allowed people to visit new places that earlier they could only visit in their imagination. In addition, railroads were accepted by all social classes. The point of this small analogy is to highlight the potential of the Internet. We should remember that this technology is only a few years old, and the real potential of the Internet lies in its ability to connect people between countries and continents. In summary, the Internet should be viewed as a linkage, like railroads, offering new opportunities in several business areas.

1.2 Theoretical background

This study aims to make a contribution to two primary theoretical areas: the human-electronic banking relationship and interaction, and cognitive and social psychology. Thus, the study is based on literature in two domains:

1. Electronic retail banking
2. Consumer behavior: consumer perceptions and reactions

The review of the literature will help the reader to become acquainted with the basic terminology used in the study and to better understand its results. The literature used comes from a number of different sources including electronic business and commerce, electronic banking, banking in general, and consumer behavior literature. Electronic banking has not been widely studied. However, some studies conducted in Australia, Ireland, and Scandinavia have shed some light on consumer beliefs and attitudes toward electronic banking (Cipparone 1996; Mols 1998; Antonides et al. 2000; Daniel 1999; Joseph et al. 1999; Sathye 1999; Beckett et al. 2000; Jayawardhena and Foley 2000; Mattila 2001).

Studies concerning electronic retail banking in particular have been published in various academic journals. The most important of these are the International Journal of Bank Marketing, the Journal of Financial Services

Marketing, and the Journal of Internet Banking and Commerce. The consumer behavior literature is, as we all know, a huge area comprising many different research orientations. In the present study, the primary focus is on attitude research. We ground our discussion on the theories of Fishbein and Ajzen concerning consumer behavior by exploring attitude formation and measurement. The fundamental reason for studying consumer attitudes in the present study originates on the one hand out of the lack of attitude research in electronic banking and on the other hand out of the author's interest in understanding consumers' needs and desires. Thus, this study aims to inquire into the psychology of the consumer decision making process.

1.3 Structure of the study

As stated above, the literature review consists of two parts. The first part discusses electronic banking in the context of consumer beliefs and attitudes. The second part consists of consumer behavior theories, and their implications for electronic banking. Theoretically this study is linked to the previous literature in this area. The study is divided into ten chapters, of which the first five present the background to this thesis, the following four comprise essays on specific topics, and the final one presents the discussion. The study is organized in detail as follows. Chapter one, the introduction, acquaints the reader with the study objectives by leading into the topic with a discussion about the technological advances in the world of business, with special focus on the development of Internet. Chapter two outlines the basic concepts of electronic banking, and gives an overview of the structure of financial services in Finland. Moreover, this chapter ends up with a discussion of the benefits of electronic banking recognized by previous studies, discusses security concerns, and finally outlines consumers' perceptions and reactions toward electronic banking.

The latter part of the literature review will be given in chapter three where a psychological framework for understanding consumer behavior is presented. In order to help in understanding the multiattribute models, the components and functions of attitude as well as the marketing applications of multiattribute models will be discussed in detail. In addition, chapter three details the complex relationships between beliefs, attitude, intention, and behavior. Chapter four focuses on crucial issues of data analysis. The reliability and validity of the study and the sampling methods used will be discussed. In chapter five, an overview of the results of the survey will be presented. In this connection, demographics as a factor affecting electronic banking usage will be discussed, and shown to be important in Internet research (e.g. Burstein and Kline 1995). Moreover, individual differences in electronic banking will be discussed.

Chapters six to nine comprise research articles related to the subject. These essays are not only based on attitude development and measurement, they are expected to provide practical implications for financial institutions in general

and for managers in particular, concerning, for instance, customer segmentation, bank marketing strategies, and customer service. The first article discusses the beliefs and reactions consumers' have toward electronic banking. This essay describes the development of Internet banking in Finland and illustrates the beliefs found among non-users of Internet banking, new users and old users. Furthermore, this essay tracks consumer beliefs about different technologies such as mobile phones, computers and automatic teller machines (ATMs).

The second essay "Factors underlying attitude formation toward Internet banking" provides an insight into the factors underlying attitude formation toward Internet banking. In this essay, we attempt to determine those factors that on the one hand constitute and on the other hand influence attitude toward Internet banking. Moreover, in this essay a cognitive model of Internet banking behavior will be developed.

In the third essay, we measure attitudes toward Internet banking from two different consumer groups: new Internet banking users and old users. The attitude measurement is based on the classical Fishbein attitude model where a person's attitude toward an object is viewed as a function of his or her beliefs about the object and the implicit evaluative responses associated with those beliefs. In other words, attitude is measured on two different seven-point scales called the belief strength scale and the belief importance scale. The attitude model we elaborate and test might also be useful in other similar Internet-related studies.

The last article concerns technology-based service delivery to mature bank customers by examining individual differences among the mature consumer segment, which is defined as citizens older than age 65. This essay discusses the barriers to the adoption of Internet banking among mature consumers as well as illuminates understanding of older consumers' perceptions of technology and service.

Finally, a deeper analysis of the results is presented in the final chapter. This chapter addresses the potential use of attitude research in electronic banking through linking the work of the previous chapters explicitly to research in the field. The discussion section also presents the results of the qualitative study in an effort to give additional and supportive information to the research questions outlined in chapter one. Chapter ten also details the limitations of the study and addresses its theoretical and practical contributions. Additionally, suggestions for future research are discussed.

Figure 1 displays graphically the structure of the study. In quantitative terms, the first section, introduction and the literature review, constitute approximately one third of the study. Chapters four, five and ten build up the other one third, and the essays are forming the last third.

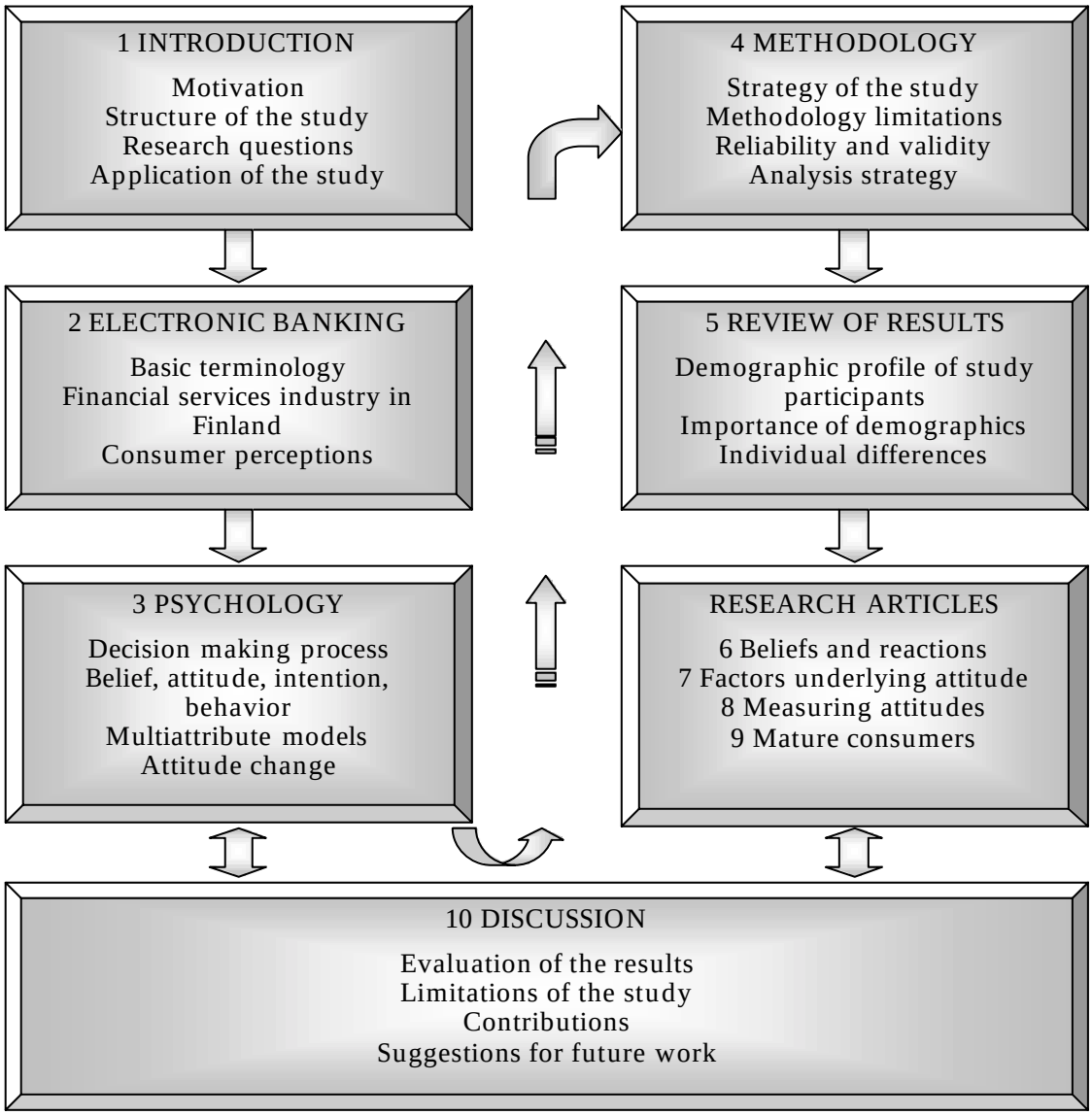


FIGURE 1 Structure of the study

1.4 Research questions

Basis of the review of the literature in chapters two and three, research questions have been developed to answer the following research questions. At the core of this study are consumer beliefs, attitudes, intentions, and behaviors. The study aims to quantify the current state of consumer beliefs and attitudes toward electronic banking in Finland, and to understand the factors that drive the development of such services. The research questions all concern, in one way or other, consumer behavior in the context of electronic banking. Also the fact that consumer behavior in electronic banking lacks thoroughgoing research

has had an impact on the planning of the study. The research questions have been thought out carefully, in an effort to prevent the possibility that the results unknowingly strengthen existing prejudices we might have had.

The primary academic question to be addressed relates to the causal type of research because it deals with the relationship between attitudes to electronic banking and actual usage of the electronic delivery channels.

- How are attitudes toward electronic banking formed and how are they related to the use of Internet banking?

In order to obtain a comprehensive response to this, sub questions had to be designed. According to the theory of attitude formation (e.g. Fishbein 1967), attitude is a function of a person's beliefs and their evaluation. Hence, we must first detect the beliefs underlying attitude formation and address a second research question.

- What are the salient beliefs consumers hold about electronic banking?

The second and third research questions are more descriptive ones. Due to the fact that the phenomenon to be studied is relatively unknown territory, descriptive style questions are well justified. The third research question to be addressed concerns the measurement of the concepts.

- What is the weight of beliefs and attitudes in explaining consumer behavior in electronic banking? Further, what are the most important beliefs and attitudes that motivate consumers to use electronic banking services?

We will use Fishbein's (1975, 29) multiattribute model to compare the attitudes of the different target groups used in this study. Also, the Theory of Reasoned Action (Fishbein 1980) will be used in explaining the importance of subjective norms in banking behavior. Additionally, the Theory of Reasoned Action forms the basis for the development of our model. Thus, one major purpose of this dissertation is to test whether the theory is valid in predicting and explicating consumer behavior. Third, once the beliefs and attitudes are known, this study will answer the following questions:

- What are the factors that affect attitude formation toward electronic banking and how are these factors related to the use of electronic banking?
- How do consumers perceive electronic banking compared to traditional branch banking?
- Are attitudes predictors of intention and/or behavior?

On the basis of knowledge of previous Internet-related studies we assume that attitude toward technology is the most significant driving force affecting

intention and behavior in relation to electronic banking. Thus, the purpose the present study is to identify the relative importance of technology attitudes in the adoption of new electronic delivery channels in private banking. These questions lead us to the final research question of this study

- What kinds of strategies should be used to change consumer attitudes toward electronic banking?

1.5 Application of the study and its results

From a theoretical perspective, the study provides new information about consumer behavior in the rapidly changing financial services industry. Consumer perceptions and reactions toward information technology and banking technology is a significant area to which this study aims to contribute. Knowing consumer behavior in the context of electronic banking will provide a relatively important theoretical background for future research in the area of electronic business. Another expected contribution is that concerning the relationship between attitude and behavior. Research on electronic banking has not previously focused much on attitude research (e.g. Daniel 1999; Sathye 1999). Thus, we attempt to develop a model that is based on previous models such as the Theory of Reasoned Action (Fishbein 1980). Not only does this study contribute to theory, it is intended to have pragmatic value as well.

From a pragmatic perspective, this study aims to present results that have the potential to be extremely useful. With the emergence of electronic commerce as a viable means to conduct business, the need to design effective new delivery channels has become imperative. First, the results of this study will show the current state of consumers' beliefs and attitudes toward electronic banking. Second, the empirical data present e.g. demographic data that will be significant and useful, for example in examining demographic factors affecting the diffusion of electronic banking. Third, the results will shed light on different customer segments, and elucidate the importance of banking at branch level. The managerial implications of segmentation will be two-fold: By knowing their customers better, banks and other financial institutions will be able to serve them better, and more importantly, via the delivery channel customers are familiar with. For example, Finnish bank customers have a variety of delivery channels to choose from. Customers have a variety of electronic delivery channels (the Internet, telephone, mobile phone and other technologies) to use, or they can keep to traditional channels such as branch banking.

Finally, the results are expected to provide a good basis for future marketing strategies concerning the development of electronic banking services. In the near future, it will be easy to access the Internet, for instance, via mobile phone, computer, or digital television. Hence, Internet banking allows new entrants relatively easy access to the financial markets. From my point of view, the winners in this field are those institutions with appropriate knowledge of

not only the technological achievements and developments but also those with a profound understanding of their customers.

As a final remark we would like to recapitulate the ideas expressed by Joseph Schumpeter (1964):

> "…understand what banking means… the banker must not only know what the transaction is… but he must also know the customer, his business, and even his private habits, and get, by frequently, *talking things over with him*, a clear picture of his situation."

2 LITERATURE REVIEW PART I: ELECTRONIC BANKING IN A WIDER PERSPECTIVE

The second chapter of this study outlines the theoretical basis of the four research articles presented in chapters 6-9. Chapter two is structured along several themes. First of all, this chapter discusses the requirements of a good electronic banking platform in terms of technological infrastructure and explains the basic terminology of electronic banking. Second, this chapter outlines the various impacts electronic banking has for the whole financial service industry. We also give some guidelines for implementing these changes on the marketing strategy. Third, the benefits of electronic banking are introduced, and security concerns analyzed. Finally, the chapter concludes by exploring consumer perceptions and reactions to Internet banking. This chapter is essential because it is impractical in the research articles themselves to outline the forces that have influenced the adoption of electronic banking and its various implications.

2.1 Technological development in Finland: A good platform for electronic banking

According to the Pan European Internet Monitor by Pro Active International (2000) Internet usage in Europe is growing rapidly, but there are large differences between the different countries in Northern, Western, and Southern Europe. A total of 34 percent of the population of aged 15 or older has access to the Internet in any location. Internet usage in Europe differs by country as shown in figure 2. The number of Internet users in Scandinavia is the highest; Sweden leads with a proportion of the population that had been online in the past two weeks of 53.3 percent. Norway and Denmark also had rates of over 40 percent. Finland was fourth in terms of Internet usage. According to the results, 41.1 percent of Finns had been online in the past 14 days. These results are not

totally reliable, but at least they are in line with other estimates made about Internet usage (see e.g. Forrester Research 2000; Computer Industry Almanac 2000; Internet Economy Indicators 2000; Morgan Stanley Dean Witter 2000). In addition, Statistics Finland (2000) provides relatively reliable figures on Internet penetration in Finland. A total of 30 percent of Finnish households had an Internet connection at home at the end of 2000.

Furthermore, in autumn 1999, around one third of Finns aged 10-74 were able to access the Internet from somewhere. Electronic shopping had not until then become popular: only 16 percent of those with access to the Internet reckoned they would start purchasing via the Internet.

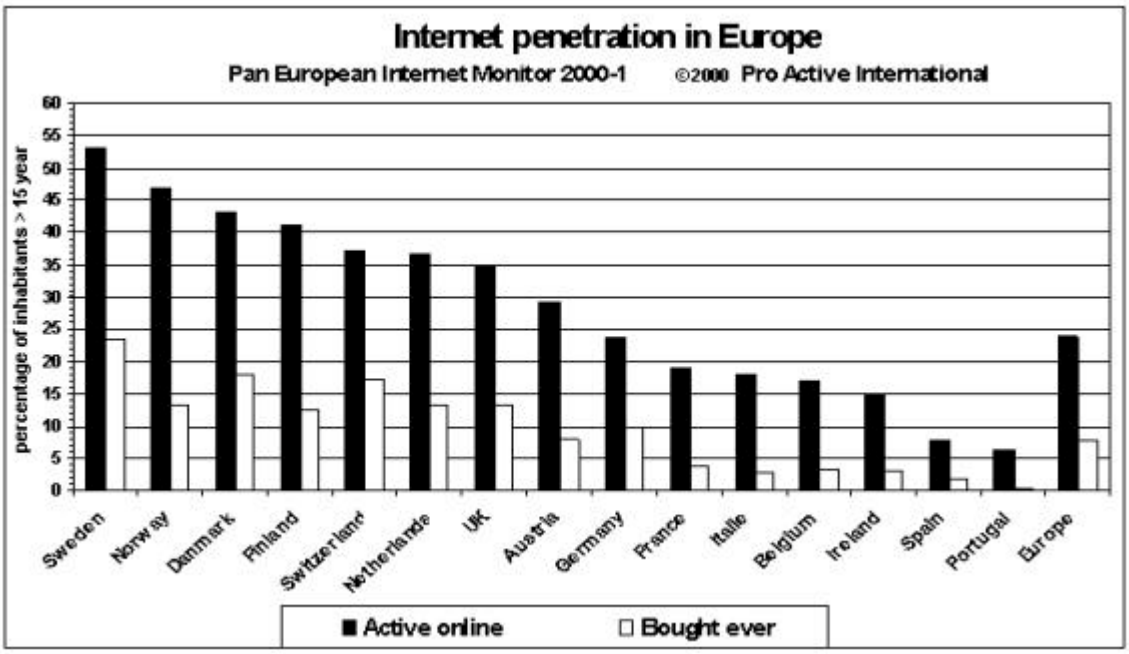


FIGURE 2 Internet penetration in Europe. Source: Pro Active International 2000.

It is a common knowledge that Finland has a good technological infrastructure. In fact, Finland is the world's most wired country. Finland also has one of the highest mobile phone subscription rates in the world. Along with Sweden, Finland has the highest Internet penetration in Europe. Table 1 shows that 14.6 percent of the Finns have Internet access at home or at work. Finland is the second country in the world in the number of PCs per capita. Further, according to several studies, Finland is in the lead with the US in the number of connected computers per capita: 110 connected computers per 100 000 inhabitants (Computer Industry Almanac 2000).

Table 1 also clearly shows that the cost of getting online is substantially below the average the Europe and the US. The low charges for telecommunication access is one of the most important factors that have led to the large number of connections in Finland. According to Forbes magazine (2000), the cost of getting online in Finland is under $20 a month, whereas telephone and ISP charges elsewhere in Europe and in the US are dramatically

higher. Thus these findings demonstrate the existence of a good platform for electronic banking in Finland.

TABLE 1 Technology infrastructure. Source: Statistics Finland 2000;Forbes 2000.

	Percent of people online	PCs per 1000	Cost to get online ($)	Annual disposable income ($)	Credit/Debit cards per 100
Finland	14.6	505	19.77	12.309	23
Europe	6	352	49.32	14.801	39.31
U.S.	16	580	34.87	21.928	148

2.2 Basics of electronic banking

Electronic banking is a high-order construct, which consists of several distribution channels. It should be noted that electronic banking is a bigger platform than just banking via the Internet. However, the most general type of electronic banking in our times is banking via the Internet, in other words Internet banking. The term electronic banking can be described in many ways. In a very simple form, it can mean the provision of information or services by a bank to its customers, via a computer, television, telephone, or mobile phone (see Daniel 1999). Burr (1996), for example, describes it as an electronic connection between bank and customer in order to prepare, manage and control financial transactions. Internet banking allows consumers to access their bank and accounts to undertake banking transactions. At an advanced level Internet banking is called *transactional* online banking, because it involves the provision of facilities such as accessing accounts, transfer of funds, and buying financial products or services online (Sathye 1999). The terms Internet banking and online banking are often used in the literature to refer the same things. Nowadays the Internet is the main channel for electronic banking.

Furthermore, electronic banking is said to have three different means of delivery: telephone, PC, and the Internet. Daniel (1999), for example, introduces four different channels for electronic banking: PC banking, Internet banking, managed network, and TV-based banking. The different delivery means for electronic banking are presented in table 2. Empirical studies conducted by the author (see Karjaluoto et al. 2002a) suggest that the main electronic delivery channel in banking is the Internet, accessed via personal computer.

Telephone banking, TV-based banking, and managed network do not play such a big role in banking today. However, in the future the delivery platform is expected to shift from wired Internet connections to wireless mobile technologies. Thus, as Wah (1999) points out, electronic banking does not necessarily have to be on a computer screen. It can, for example, be on the tiny screen of a mobile phone or any other wireless device. With these wireless applications, customers can, for example, consult their bank account balances and transaction histories, view pie charts of their holdings in a portfolio, initiate

payments or orders to buy and sell securities, and also send e-mail to their banks.

TABLE 2 Delivery platforms for electronic banking. Source: Adapted from Daniel 1999.

Type of service	*Description*
PC banking (private dial up)	Proprietary software, distributed by the bank, is installed by the customer on their PC. Access to bank via a modem linked directly to the bank
Internet banking	Access their bank via Internet
Managed network	The bank makes use of an online service provided by another party
TV based	The use of satellite or cable to deliver account information to the TV screens of customers (Also Internet based)
Telephone banking	Customers access their bank via telephone (Own personal ID and password required)
Mobile phone banking (SMS, WAP, 3rd generation)	Access with text message (SMS), Internet connection (WAP), or high speed 3d generation mobile connection (also Internet based)

One of the most significant advances in technology today is the combination of the Internet and the World Wide Web. Technology, in particular the Internet, has been a key driving force behind the changes in the banking industry. Electronic banking is the newest delivery channel in many developed countries and there is a wide agreement that the new channel will have a significant impact on the bank market (Daniel 1999; Jayawardhena and Foley 2000). According to Nehmzow (1997) Internet banking offers the traditional players in the financial services sector the opportunity to add a low cost distribution channel to their numerous different services. He continues that Internet banking also creates a threat to traditional banks' market share, because it neutralizes so many of their competitive advantages in having a traditional branch bank network.

It has been argued that electronic banking is not new to banks or their customers. In the past there have been electronic banking services to customers for years, through software programs and telephone banking. Further, in some parts of the world banks have been very reluctant to provide their customers with banking via the Internet due to the security concerns. Brogdon (1999), for instance, says that security is a huge issue for banks. This is an important point, and is considered later. However, no single misuse of e.g. Internet banking has yet been reported in Finland.

There has also been some discussion about the disappearance of traditional banks. The future of Internet banking looks very promising. As Internet banking becomes more popular, it will be interesting to see what happens to traditional banks with branches. Wah (1999), for example, argues that traditional banks will not disappear in the future. Instead, the new technology will put them on a new level in banking services. She concludes that even traditional banks will benefit from this new technology, and the will be

able to care for their customers in a more efficient, more productive and even more fun way. She also argues that Internet banking is playful for customers. However, there is relatively little evidence about the playfulness of Internet banking. Playfulness will also be considered later in the study.

2.3 Fundamental changes in the banking sector

Banking technology has changed rapidly. According to the Finnish Bankers' Association (2000) Finnish banking differs in many forms from that of Europe in general. As they put it:

> "In the EU area the banks' branch network has an important position as a significant proportion of payments is still processed in paper form in branches. Finnish payment transaction services utilise more widely technology and telecommunications. EFTPOs terminals as well as telebanking (author's note: read electronic banking) services have clearly reduced payment processing in branches. 85 % of the Finnish payment transactions are electronic. The use of bank services via the Internet and mobile phones continues to increase."

When examining the changing nature of the global banking markets, and especially the Finnish consumer banking market, many facts must be taken into consideration. Advances in information technology have caused a downsizing in traditional bank branch networks. In general, older consumers are considered as typical branch customers, whereas the younger consumer segment with high education and a profession al occupation are considered as typical users of electronic banking services (Sathye 1999; Jayawardhena and Foley 2000; Karjaluoto et al. 2002b; Mattila 2001). It has been stated that Finland is one of the leading countries in the field of banking technology in general and Internet banking in particular. Technological change has been very rapid in Finland. Finnish banking differs in many respects from that of Europe in general. In Finland most of transactions are electronic (85%). Compared to the EU area, banks' branch networks occupy a steady position as major proportions of payments are still processed in paper form in branches. Further, the use of bank services via the Internet and mobile phone is expected to continue to increase. Technological development in the financial services industry has had a heavy impact on traditional bank branch networks as well as on deposit banks' staff. Figures 3 and 4 depict the recent development in branch network and telebanking agreements, and in deposit banks' staff. During the past few years especially the number of bank staff and branches has continued to decrease.

At the end of 1999, the Finnish bank groups had a total staff of 28,245, a decrease of approximately 1,000 on the previous year. Domestic banks had 1,524 branches, a fall of approximately 50 branches on the previous year. Figure 3 shows also the correlation between the decline in the number of branches and the increase in telebanking agreements. Compared to the year 1985, the number of branches has more than halved. In the same time, the number of telebanking agreements has grown from zero to almost two million. The contraction in traditional bank branch networks has also been an ongoing trend abroad.

According to a study by Prendergast and Marr (1994) conducted in New Zealand, the bank branch networks were facing a loss of 500 branches from 1,500 to 1,000 between 1994 and 2000. They believe that one of the forces causing this reduction is the availability of electronic delivery channels. Interestingly, Greenland (1994) reported that the branch network would remain the main channel for retail banks in the foreseeable future. However, things have changed very rapidly since, and, at least in the developed counties, electronic delivery is replacing bank branch networks.

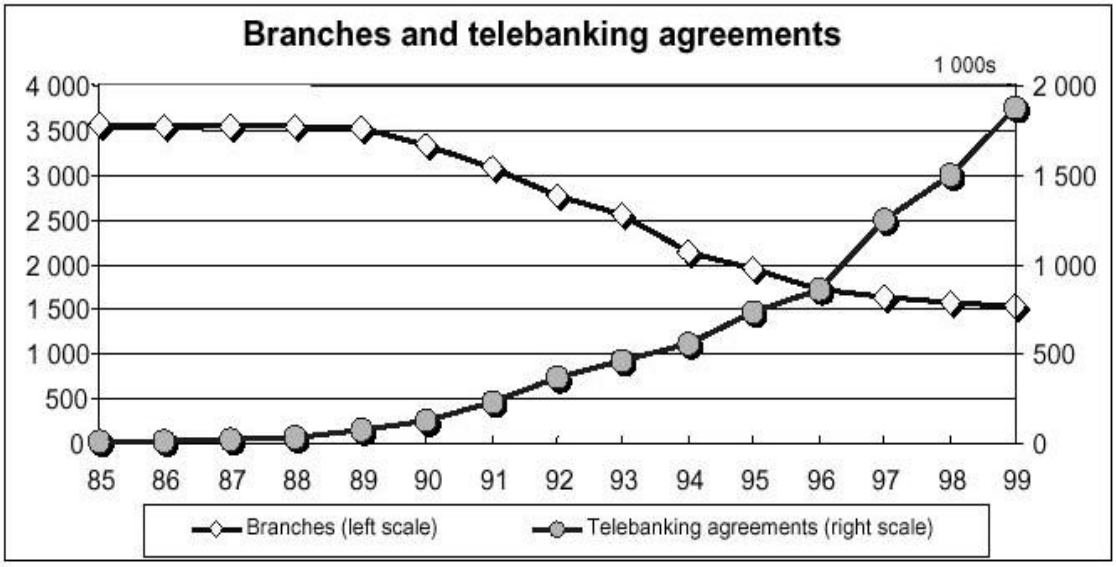


FIGURE 3 Branches and telebanking agreements. Source: The Finnish Bankers' Association, Bank of Finland (2000).

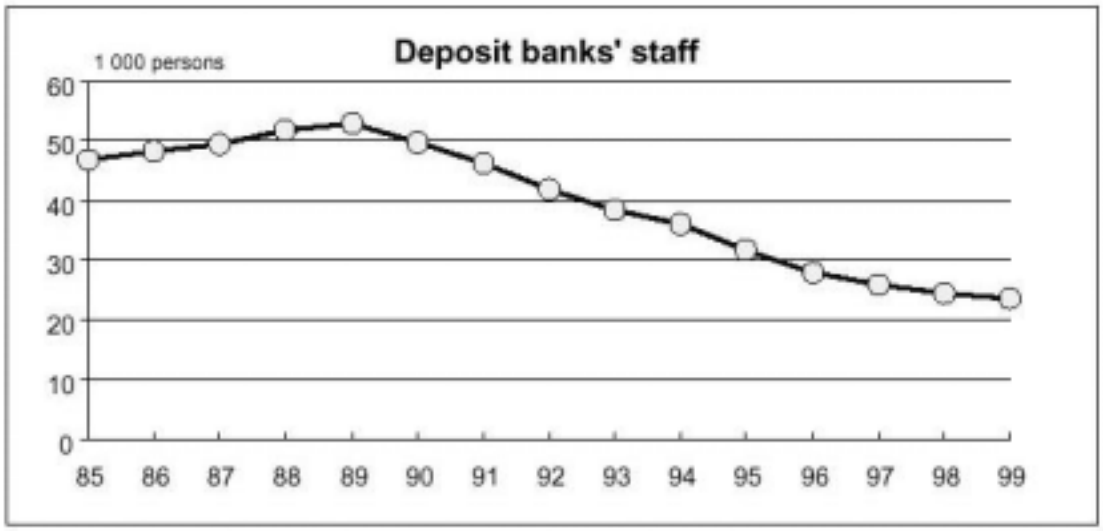


FIGURE 4 Deposit banks' staff development. Source: The Finnish Bankers' Association, Bank of Finland (2000).

Service units, data network connections and telephone banking services have rapidly replaced the traditional banking service network. Service units are also open outside normal branch opening hours. Data network connections have made banking possible at home or at work, i.e. banking is no longer bound to time or place. Clients with an Internet connection are able to carry out most of their banking services via the Internet. Many Finnish bank customers visit branches only when they need to get new payment or credit cards. Finnish banks have been world leaders in the development of Internet-based banking services.

As Seipp (2000) clearly points out in his thesis, the basic trends affecting the financial markets are globalization, deregulation, liberalization, technology, and new demographic trends. First of all, globalization is expected to *"reflect the progressive interaction of the world economics"* (World Bank 2000). Liberalization and deregulation in the banking sector mean the increasing competition among banks and other financial institutions. As a result, banks are no longer the only players in the financial service sector. It is expected that e.g. telecommunication companies will offer similar transaction services, selling financial products / services via the Internet. Technology, specifically the Internet, has had a profound impact on the financial markets. New demographic trends point to changes in the customer base. According to Seipp (2000), two primary demographic trends are influencing the financial markets: (1) the increase in the number of elderly people, and (2) the decrease in the size of the active population. In addition, enhanced mobility is having a great impact on consumer behavior.

To understand better the competitive and rapidly changing environment of electronic banking, the changing banking services sector is presented in figure 5. The figure shows that the electronic banking sector is subject to both internal and external forces. The external forces consist of four forces (changing technological environment, changing political environment, changing economic environment, and changing social environment (Nellis 1998; Jayawardhena and Foley 2000). According to the study by Jayawardhena and Foley (2000), the external forces in the banking environment will have the greatest impact on the sector.

Economic and political changes have increased power and rights of the customer, whereas legislation has increased competition in the financial services industry. Consumers are now facing a plethora of financial products and providers. The changing social environment includes the emergence of mature bank customer segments. Mature customers provide new challenges for financial service providers. Social changes have also taken place in cultural values and beliefs and in attitudes toward technology and society. Changes in technology include the rapid growth of information technology and the impact of this on the banking world is total. We currently face a revolution in technology whilst the rapid growth in the Internet is. New technologies create new markets and opportunities for the banking sector as well. Managing and satisfying the customer with different delivery channels has become a key issue for the sector's players. As a result of the high cost of developing and introducing new technologies, many firms are copying competitors' products

and making minor improvements in features and style. As a result, Internet banking services do not differ very much between different service providers.

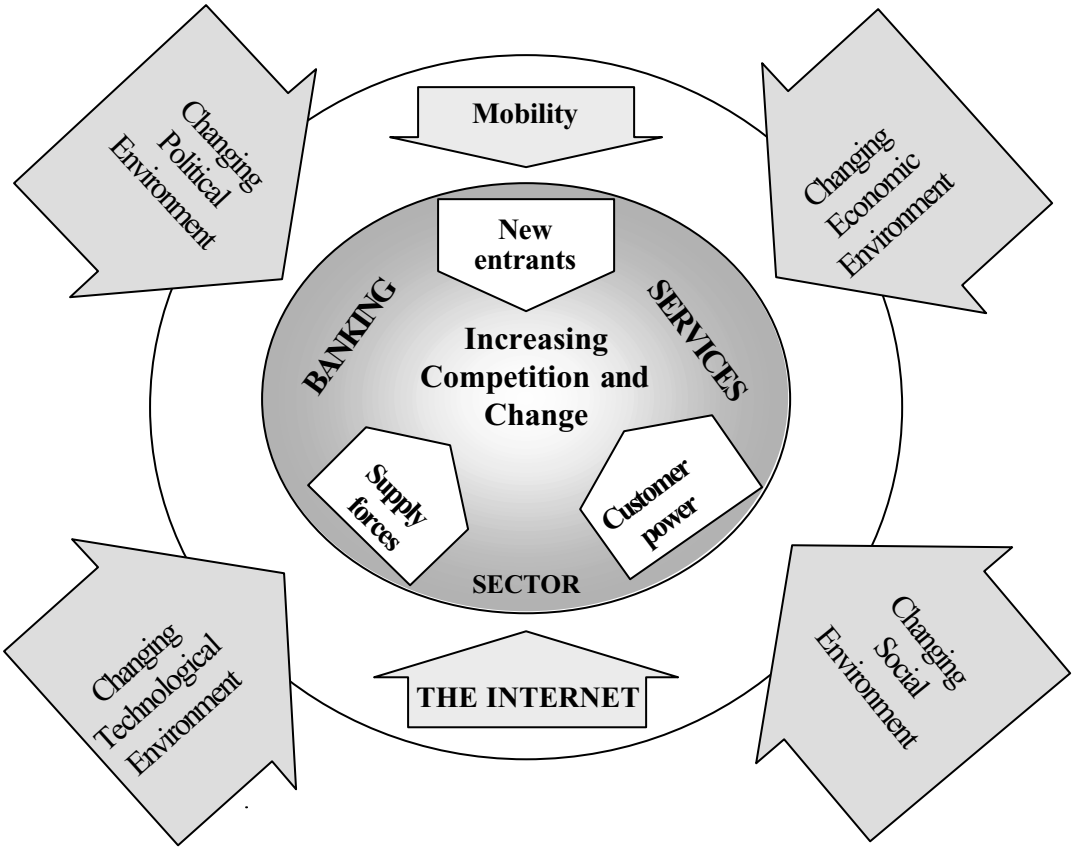


FIGURE 5 The banking services sector and interaction with forces. Source: Adapted from Jayawardhena and Foley 2000.

Jayawardhena and Foley (2000) have categorized the internal forces into three classes: threat from new entrants, increasing customer power, and volatile supply forces. One of the disadvantages for traditional banks presented by the Internet, is the threat from new entrants. The banking sector will be very competitive market in the future and the main question for banks is how they can increase their number of loyal customers. An answer to this, for example, lies in good online-services through the Internet. Increasing customer power means that the power is shifted from banks to their customers, i.e. customers are able to control almost all of their financial transactions and even loans via the Internet. With the help of the Internet, switching barriers from one bank or financial institution to another will disappear, as customers will be able to change banks at the press of a button in the comfort of their homes or offices. Similarly, Howcroft and Kiely (1995) found that electronic distribution channels, specifically Internet banking, are reducing the entry barriers into retail banking.

Volatile supply forces have an impact on the delivery chain of banks. As we saw earlier in this chapter, the reduction in the number of bank branches and deposit bank personnel have changed the banking sector. As a consequence, bank customers are in a sense constrained to use electronic delivery channels in their banking instead of having an extensive traditional branch network complete with many employees around them. Further changes can be expected with the implementation of Internet-enabled delivery mechanisms. However, banks are investing heavily in online customer services in order to provide fast and easy-to-use electronic delivery channels with personalized service.

According to Wah (1999) the success of banks operating via the Internet will lie in their ability to attract and keep customers. She believes that the buzzword for this industry in 2000 will be *portal*. Basically this means the bank's own web site. With effective portals banks will be better able to fend off competition. In the future portals will be tailored for market segments based on factors such as life cycles and lifestyles. In Finland, banks have been developing their portals since the launch of the first Internet banking service in the mid 1990s. Portals include all kind of services, such as shopping sites and news. However, there is no agreement about whether banks' portals should be designed for banking only or whether they should also contain shopping activities, chat rooms, news groups or other activities.

2.4 The benefits of Internet banking for banks and for customers

2.4.1 Benefits for banks

Internet banking offers many benefits to banks and their customers. The main benefits to banks are cost savings, reaching new segments of the population, efficiency, enhancement of the bank's reputation and better customer service and satisfaction (Brogdon 1999; Jayawardhena and Foley 2000). The more transactions can be converted online, the more money will be saved. According to Robinson (2000) the cost of an electronic transaction is dramatically less when done online compared to at a branch. He adds that online banking strengthens the relationship between the service provider (e.g. bank) and the customer, because it brings banking services directly to a customer's home or office, or in the mobile phone. This creates customer loyalty. The last point he made was that online services are a must for banks that have to compete with a growing number of services from other financial institutions, investment concerns and insurance companies. A good example of this growing competition is the invasion of foreign Internet banks in Finland. The new technology offers whole new possibilities to the banking sector. Furthermore, banking is no longer tied to time and place. As a result, global competition is expected to broaden (Helve 2000).

Sheshunoff (2000) says further that the single most important driving force behind the implementation of full service Internet banking by banks is the need

to create powerful barriers to customer exiting. He argues that once a customer moves to full-service Internet banking, the likelihood of that customer moving to another financial institution is significantly diminished. The main reasons for this behavior can be found in the consumer behavior theory: switching always requires much time and effort from the individual consumer. He concluded that the competitive advantage of Internet banking for banks is very significant.

It has been argued that electronic banking customers are more valuable to banks than other customers with similar demographics. However, there is little evidence that Internet banking alone makes them more valuable (Burns 2000). Through electronic banking banks can achieve better cross-channel productivity and performance. The move toward Internet banking increases the need for a holistic approach to channel and process management, especially when integrating new delivery channels into existing frameworks (as many traditional banks nowadays do). Burns (2000) indicates that the Internet will not replace other delivery channels, but it will offer increased flexibility and the opportunity for improved service.

Further, Internet banking customers are found to be more loyal to their bank than non-Internet banking customers (Mols 1998). He conducted a survey in Denmark and presents some interesting insights into Internet banking users. His results suggest that Internet banking customers (1) are more satisfied with their bank, (2) have higher switching barriers, (3), provide more positive word-of-mouth, (4) have higher repurchase intentions, (5) have a lower price sensitivity, and (6) have a lower propensity to exit and higher propensity to complain. However, there is not much evidence that Internet banking itself strengthens customer loyalty. This issue will also be considered later in the present study.

2.4.2 Benefits for customers

Internet banking offers also new value to customers. It makes available to customers a full range of services including some services not offered at branches. The greatest benefit of Internet banking is that it is cheap or even free to customers. However, price seemed to be one factor militating against Internet banking (e.g. Sathye 1999). Two important factors in the price debate are on the one hand geographical differences and on the other hand disparities between the costs of e.g. Internet connections and telephone call pricing.

Electronic banking in general is not tied to time or place. It has also been argued that electronic banks are more likely to change in response to customers' demands (Brogdon 1999). Internet banking has the advantage that the customer avoids travelling to and from a bank branch. In this way, Internet banking saves time and money, provides convenience and accessibility, and has a positive impact on customer satisfaction. Customers can manage their banking affairs when they want, and they can enjoy more privacy while interacting with their bank. It has been claimed that Internet banking offers the customer more benefits at lower costs (Mols 1998). To summarize, electronic banking in general and Internet banking in particular offer many benefits to both service providers

(whether they are traditional banks or other financial institutions does not make a difference) and their customers.

2.5 Importance of security in electronic banking

Security has been widely recognized as one of the main obstacles to the adoption of Internet banking. Many studies suggest that banks must first convince their customers that Internet banking and transactions are secure before customers show willing to use Internet banking. Security is a very important aspect in the debate over the challenges facing electronic banking. Further, it has been stated in numerous studies that the greatest challenge to the electronic banking sector will be winning the trust of consumer in issues of security and confidentiality (see e.g. Runge and Zimmermann 1997; Furnell and Karweni 1999; Bestavros 2000). Adam et al. (1999, 123) claim that ensuring security and confidentiality are fundamental prerequisites before any commercial activities involving sensitive information can take place. They add that security is the leading barrier to widespread electronic business on the Internet. The rapid developments in technology have made significant contributions to securing the Internet for electronic business. However, the challenges remain in this area, and security remains a substantial issue for the development of electronic businesses, especially electronic banking.

In the electronic banking sector, the banks and other financial institutions need to store sensitive data on their customers (Bestavros 2000). However, empirical studies have found that *"consumers are often reluctant to share personal information for fear that their financial life will become an open book to the Internet universe"* (Bestavros 2000; see also Bhimani 1996; Furnell and Karweni 1999). However, the security technology is already available and in use; the question to be addressed today is simply: *how to convince consumers of the security of the Internet.* For example, Gesner (1996) argues that security is becoming a non-issue as the answers to the security and confidentiality problems are found. He continues that there are three main developments taking place in the area. First, Web browsers are incorporating 128-bit RSA encryption key technology that allows customer information and requests to remain private as the data flows across the Internet. Second, the use of digital certificates has made identification easier and cheaper. Third, firewalls ensure that *"bad guys can't gain unauthorized access to both customer information and backoffice systems are improving daily."* (Gesner 1996). Regarding improvements in Web technology, Gesner (1996) argues that the Internet will soon be the most secure way of doing business. The education of customer is of key importance. Hence, nobody will benefit if customers do not trust the banks in delivering security. Some empirical evidence has been amassed on consumers' views on security and Internet banking (Karjaluoto and Mattila 2001). The main results of this study indicate that Internet banking is considered quite secure also among non-Internet banking users. A total of 18 percent regarded it as very secure while 26 percent believed it to be very

unsecure. Moreover, on the basis of the results of the study, approximately 85 % of Internet banking users considered Internet banking very secure. It seems that security is not among the greatest obstacles to the emergence of Internet banking. However, this survey-type study was conducted in Finland and was limited to Finnish bank customers only. Cultural differences, for example, might have a substantial effect on the results. In addition, various studies have found out that as security concerns arise, the likelihood of purchasing online decreases (e.g. Hoffman et al. 1998).

Security is of paramount importance to Internet users. According to a study made by Gervey and Lin (2000), Internet users are aware that cookies are placed on their computers without their permission, and that their movements on the Internet are also tracked. In addition, their survey results revealed that respondents were afraid to give their financial information to the Internet, and they were also reluctant to do their banking via the Internet. They suggest that one way to reduce this concern is to cultivate brand equity. Brand equity appears to play a major role in consumer decision making about products and services (e.g. banking services). They conclude that only by enhancing brand equity will marketers move consumers online. According to Furnell and Karweni (1999) consumers with a greater awareness of security will be more likely to use Internet-based services such as shopping and banking. Their results imply that awareness is the key in increasing consumer confidence. However, service providers in the Internet have made major developments, for example, in the methods of payment available via the Internet. Consumers can nowadays choose between many modes of payment: if one does not feel comfortable in giving his or her credit card number on the Internet he or she can choose another mode of payment. Many electronic shopping sites have made agreements with banks operating on the Internet, allowing consumers to pay for their shopping by traditional paper bills. In addition, as Karjaluoto and Mattila (2001) point out, banking via the Internet is not considered among Finnish banking customers to be as insecure as the international literature suggests. Nevertheless, security issues remain the number one challenge to electronic banking service providers. They must win the customer's trust – through education and marketing strategies.

On the limited empirical data available, the negative attitude of consumers toward the security of Internet banking seems to remain one of the most significant barriers for its adoption. In the view of some international experts, security concerns arise from the use of an open network, i.e. consumers are afraid their personal financial information will become available to others via the Internet. (Thorton Consulting 1996; Daniel 1999; Furnell and Karweni 1999; Bestavros 2000).

The need for security has already been recognized within the Internet / electronic banking community and a number of technologies have been developed to secure electronic transactions. The most common approach used to secure current online transactions is the Secure Socket Layer (SSL) protocol developed by Netscape (Frier et al. 1996), which is a general cryptographic protocol used at the transport of the TCP/IP suite for securing bi-directional communication channels. SSL consists of a two-phase handshake protocol for

server and client authentication using public key certificates. Once the connection is established, the SSL protocol can be used to transfer data in all forms. (Adam et al. 1999, 137).

An alternative to the SSL/TLS is the secure electronic transaction (SET) standard developed by the major credit card companies (e.g. VISA and MasterCard) for online e-commerce transactions. Specifically, SET addresses several security needs specific to electronic commerce (Furnell and Karweni 1999): (1) privacy of payment data and confidentiality of order information transmission, (2) authentication of a cardholder for a branded bankcard account using digital signature and cardholder certificate, (3) authentication of the merchant to accept credit card payments using digital signature and merchant certificate, (4) ensuring payment information integrity by the use of digital signature, (5) special purpose certificates, and (6) non-repudiation for dispute resolution.

The importance of trust has been a burning issue for many years in electronic commerce. Consumers see the Internet as a global public network, which means that the issue of trust is of paramount importance between customer and seller on the Internet. According to Ratnasingham (1998) the relationship between customer and seller needs to be completely trustworthy. In order to achieve this kind of relationship, at least three security requirements must be satisfied: (a) if the other party is not known directly, then there needs to be the additional involvement of someone else known to both sides (a third party), (b) data need to be secured at all stages (see table 3), and (c) common rules need to be established or, failing that, at least a known and acceptable legal environment. The security requirements of electronic commerce can be drawn together as follows:

TABLE 3 Electronic banking security requirements. Source: Adapted from Furnell and Karweni 1999.

Requirement	*Typical considerations*
Security at the user side	Physical access control to the machine User authentication and authorization
Security during transport of data	Confidentiality Data integrity
Security at the merchant side	Secure storage of user information User's privacy protection Authentication of parties involved

To conclude the discussion concerning security concerns, electronic banking via the Internet will be the most secure financial system in the banking business (Nehmzow 1997; Furnell and Karweni 1999). For example in Finland, one of the leading countries in the field of Internet banking, security problems have never arisen in Internet banking. In fact, banking via the Internet is considered more secure than banking via ATMs, for example. It is also clear that Internet banking will always have its opponents, and one frequently used way to denigrate Internet banking is to criticize its security (Karjaluoto and Mattila 2001).

2.6 Consumer perceptions and reactions to Internet banking

The last part of chapter two discusses consumer perceptions and reactions to Internet banking, and reviews the results of electronic banking-related studies. The emergence of new banking technology has created highly competitive market conditions, which have had a critical impact upon consumer behavior. Internet banking providers must, therefore, attempt to better understand their customers and their attitudes toward technology in general. If they succeed, banks will be able to influence and even determine consumer behavior, which will become a major issue in creating competitive advantage in the future. The interaction between the adoption and marketing of electronic delivery channels by the banks and the changing customer segments is creating new environments for distribution channels (Mols et al. 1999). The rapid development in banking delivery channels has had an impact on customer requirements, which will be highlighted in more detail in later sections.

2.6.1 Consumer perceptions and reactions: insights from international studies

There has been wide discussion in the literature, on the one hand, about the adoption process of Internet banking services, and on the other hand, about consumer reactions to this new delivery channel. For example, Athanassopoulos and Labrouskos (1999) studied electronic banking in Greece. They give excellent insights into the consumer adoption of electronic banking. Their research findings suggest that product-specific attributes such as price and speed are conceived differently by customers. Price seemed to be one very important criterion in the adoption of electronic banking. Moreover, speed and the bank's reputation were considered important as well. Finally, respondents placed some weight on knowledge of their bank's personnel and their willingness to serve customers.

Another study, conducted by Daniel (1999), suggested that convenience, increased choice of delivery channels, and improved personal control over the banking activities are the driving factors accelerating the adoption of electronic banking in the UK and Ireland. Additionally, this study recognized that electronic banking could reduce consumers' banking costs and offer further competitive advantage to banks. One interesting aspect of the study was that respondents stated that electronic banking is unimportant if it does not offer money transmission services. Finally, consumers valued accessibility, functionality, and low-cost service in Internet banking.

In a recent study of Internet banking, Jayawardhena and Foley (2000) demonstrate that time, privacy control, and economic issues are among the aspects that customers see important in electronic banking. This study indicates that consumers are becoming busier, and hence, seeking to carry out their banking transactions at times convenient to them.

As stated earlier, the primary objective of this dissertation is to trace consumer attitudes toward electronic banking through investigating consumers' perceptions and reactions. In theory, consumer attitudes seem to

have an impact on the adoption of electronic banking. In a recent empirical study, Sathye (1999) emphasizes several factors that have had an impact on the adoption of Internet banking in Australia. On the one hand, consumers seem to be unaware of the services and benefits Internet banking offers. Additionally, Internet banking is considered hard to use among Australian consumers. Consumers tend to have security and safety concerns about transactions via the Internet. A majority of Australian consumers perceive Internet banking as not reasonably priced; i.e. using it is considered expensive. On the other hand, Sathye (1999) points out that fundamental barriers to adoption exist (no computer/Internet access, resistance to change). In conclusion, security concerns and lack of awareness were found to be the most paramount factors against the adoption of Internet banking in Australia.

The development of Internet banking will depend strongly on the number of consumers acquiring and retaining Internet access (Kingsley and Anderson 1998). Fisher (2000), for instance, says that each individual's attitude toward technology itself impacts significantly on adoption.

Banks should pay attention to consumer perceptions and reactions, and try to educate and inform their customers. Keltner (2000) provides some interesting findings after an interview with Gordon Kent, program manager for Citibank's Business Access electronic banking product. Kent says that there is *"a direct relationship between customer use of the Internet and the Internet knowledge of our work-force."* He continues that banks first need to change the behavior and attitudes of the sales representatives themselves. Internal education in banks is one of the key forces driving customer migration. Furthermore, the vice president of Bank One, Dean Kontul, continued that *"nothing could be worse than having customers inquire about the services available on our Internet site and to have the sales representative unable to answer intelligently."* Keltner continues that Internet banking services should be clearly integrated into the sales process. He argues that the sales process should be changed so that the online service is introduced as one of the first steps in signing up for a new account. For instance in Finland for the time being, the only way to sign up a new account is to visit a branch. However, some banks have implemented a full range of online services where the customer is able to open up a new account via the Internet without having an electronic ID card or electronic signature machine.

Bruhn (1997, 829) says that the typical Internet user wants to be respected as a communication partner, and wants his/her information needs to be satisfied individually, no matter who initiated the communication process. Financial service providers should offer more than just relevant information to become an often-visited portal. Before responding to any Internet offer customers work through an intense search process in order to acquire information about products and services, and compare offers. Since pull communication is initiated by the customers' login to the banks web site, their search for various products and services has to be supported. Incomplete, difficult to understand, or difficult to find product information may annoy the customer, and cause unwillingness to proceed and complete transactions (Locarek-Junge and Schwaiger 1998).

In summary, non-Internet banking users perceive online banking as hard to use and relatively expensive. Non-users were also unaware of the services and benefits Internet banking offers. In contrast, Internet banking users appreciated accessibility, functionality and low-cost service. However, it should be noted that these reviewed studies were conducted with relatively limited data about Internet banking users. This might have an effect on the generalizability of the results.

2.6.2 Profile of a typical Internet banking user

Earlier studies suggest that a typical Internet banking user is highly educated, young, and relatively wealthy person with good knowledge of computers and, especially, the Internet. Moreover, a typical electronic banking user has also been identified as a high-involvement person belonging to the conservative or liberal-intellectual upper class or a member of the career-orientated upper middle class (Jayawardhena and Foley 2000; Roemer and Buhl 1996; Spiegel, 1996, Locarek-Junge and Swaiger 1998).

Jayawardhena and Foley (2000) suggest that such a highly educated and wealthy segment represents a profitable and less risky customer base for several reasons. First, they are more likely to deal with larger sums of money, both in borrowing and savings. The aggregate cash flow from such a group will lead to economies of scale with a large turnover and lower administrative workload for the banks, since the number of high net worth accounts is relatively low. Second, this segment represents long lasting banking relationships, because the group is quite young. Third, this segment is likely to be highly mobile, and the Internet provides the most reliable method for maintaining these banking relationships irrespective of geographical boundaries.

Locarek-Junge and Swaiger (1998) introduce three types of target groups for Internet banking services (see Spiegel 1995). These three groups have used electronic banking as an interesting alternative to traditional banking and some as an alternative to telephone banking. They name these target groups *the sovereigns*, *the cools*, and *the insouciants*. The sovereigns recommend technical progress in financial services and show great interest in electronic banking offerings due to the financial advantages resulting from lower transaction costs. The cools adopt technical innovation without any doubt, never complaining about the loss of personal contacts by using electronic banking services. The insouciants look forward to electronic banking, mainly because they expect more comfort. They do not care much about personal contacts with banking personnel either. But they are afraid of security gaps allowing manipulation and misuse by non-authorized persons. Common to these all these groups is a careful search for information, which is easy to support by Internet technologies. Only the sovereigns are real innovators, but the cools and insouciants also show interest in new products and technologies.

Mols (2000) for his part, argues that at least four clusters can be found among managers with respect to their perceptions regarding Internet banking. He names the clusters as (1) the nervous, (2) the positive, (3) the skeptics, and

(4) the reluctant. All the clusters were found to be very similar in their perceptions of Internet banking and close relationships between the bank and customer. Mols (2000) found that managers perceived Internet banking as a threat to the bank's close relationships with its customers. The first cluster, the nervous, can be so labeled because they view the Internet as a threat to relationships with customers. The second cluster, the positive, do not see the Internet as a threat to customer relationships; Internet banking is seen instead as a channel for direct marketing and as a valuable mechanism for delivering more products and services in the future. The skeptics neither see the Internet as a media with potential for strengthening customer relationships nor as a channel for delivering more individual services. The fourth cluster, the reluctants, believe that banks will not use the Internet for direct marketing and for delivering more financial products and services; they expect a slower development of Internet banking than the other clusters.

According to the latest research conducted on this topic in Finland, the typical Internet user is a well-educated, wealthy man in his thirties. It is also said that the Internet is dividing the population into two groups: over 30 percent of Internet users work in a leading position. An interesting finding in this study made by Pro Active International, was that in Finland 45% of Internet users were female. In general, in Europe the Internet is dominated by men (Sahiluoma 2000).

In conclusion, all studies indicate that a typical user of Internet banking is a relatively wealthy person with good education, and interestingly, rather young. However, this is one area that definitely requires further research in order to identify the different consumer segments and their personal characteristics.

2.6.3 Consumer behavior models in the financial services industry

From a theoretical perspective, consumer behavior models in the financial services industry are often used to better describe and understand consumer behavior. On the other hand, consumer behavior models aim to characterize different consumer types. Consumer behavior models originate from the 1950s, a decade when Thibaut and Kelly (1959) published their book *The social psychology of groups*. Since then, several models explaining consumer behavior have been developed (e.g. Nicosia 1966; Engel et al. 1968; Howard and Sheth 1969; Bettman 1979; Dwyer et al. 1987). According to Beckett et al. (2000) these models have tended to focus on the causal reasoning of information - attitude - purchase. In a recent study, Beckett et al. (2000) developed a consumer behavior matrix that attempts to link economic and psychology literature in order to articulate consumer behavior in the financial service industry.

The advantage of the consumer behavior matrix model by Beckett et al. (2000) is that it places the observed behavior within an overall context. In other words, it is based on the discipline of economics, consumer behavior, and psychology, combining these into a single framework. The model outlines four

ideal types of consumer behavior, which are repeat-passive, rational-active, no purchase, and relational-dependent. The model is depicted in figure 6.

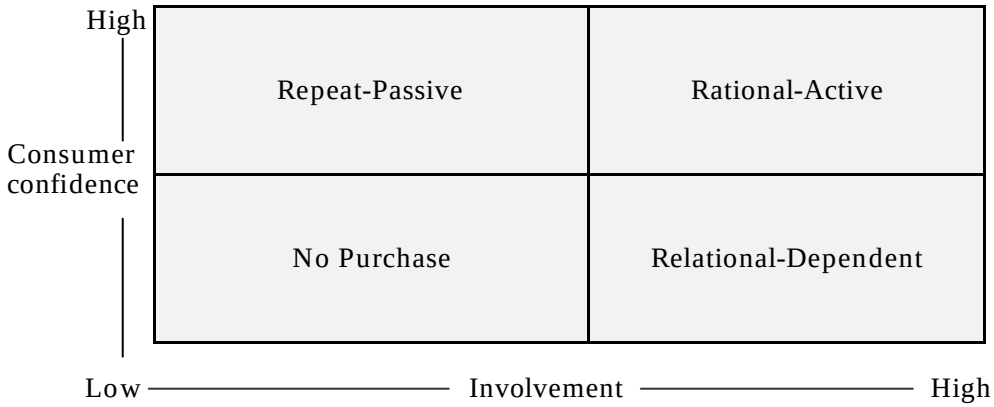


FIGURE 6 Consumer behavior matrix in the financial services industry. Source: Beckett et al. 2000.

The Repeat-Passive quadrant displays a low level of involvement in financial products, but high level of consumer confidence. These consumers can be described as *"passive in the sense that they will make repeated interactions without actively seeking alternatives"* (Beckett et al. 2000). Repeat-passive consumers chose their bank by convenience considerations such as the location of the branch in relation to where they worked and lived. Also the influence of social group, such as friends and family, appeared especially significant. Moreover, respondents denied that they were loyal to any bank. Despite this, most of the respondents had banked with the same bank for most of their lives.

The Rational-Active quadrant displays a high level of involvement and a high level of consumer confidence. Many respondents in this group appeared to regard cost as the most important criterion in bank choice. The type of delivery channel used by consumers may have an important role to play in engendering this rational-active consumer model. Typically, rational-active consumers used Internet banking services or telephone banking. According to the research findings, rational-active types tend to be less behaviorally loyal to a service provider than repeat-passive types. Furthermore, lack of loyalty was reinforced by the fact that most respondents had no communications with their banks apart from a letter or two each year.

The no-purchase quadrant describes consumers who make no purchase; in other words, they don't make any financial transactions over the Internet. They have no involvement with the financial product or institution and do not possess the ability or the confidence to make transaction decisions. However, a significant amount of marketing activity is directed at this quadrant, in an attempt to increase their awareness of products and convince them of their relative merits (Beckett et al. 2000).

The last quadrant in the model, the Relational-Dependent quadrant, displays high involvement but low consumer confidence due to the complexity of the product and uncertainty about the eventual outcome. Consumers in this

quadrant will seek advice and help from banks or third parties to reduce uncertainty and structure their pattern of purchases. The relational-dependent consumers expressed a lack of confidence and knowledge with respect to the decision-making context for financial products and services. It is clear that bankers operating with relational-dependent consumers should pay attention to the formation of relationships and holding discussions with consumers, where consumers can ask for advice. This quadrant offers banks in general a basis for the creation of differentiation.

To sum up, the consumer behavior matrix helps banks to identify their customer profiles. First, Beckett et al. (2000) suggest that consumer purchasing behavior is influenced by the type of financial product being purchased. Second, the emphasis on trust and having a relationship is also highly pertinent to the strategies of banks and other financial service providers. Third, the ability to retain customers and increase customer profitability is very important. The reason for this lies in the fact that increased competition and the development of new electronic delivery channels are changing consumer behavior by increasing consumers' propensities to switch banks. However, there is little evidence of this. In fact, many studies suggest that electronic delivery channels create loyalty, not vice versa as Beckett et al. (2000) argue (see e.g. Mols 1998).

2.7 Summary and discussion

The purpose of the present chapter was to shed light on the development of electronic banking by reviewing the literature. We began this chapter by discussing the requirements for a good electronic banking platform and defining the concept electronic banking. Generally speaking, electronic banking can be defined as *banking via an electronic device such as telephone, Internet enabled computer, mobile phone, or digital-television.* This definition is in line with Daniel (1999) and Mols et al. (1999). Second, the section describing the fundamental changes in the banking sector was undertaken to highlight the factors that have influenced the development of financial products and service delivery. The most influential forces affecting the banking world today were found to be the reduction in the number of bank branches, growth of electronic delivery, increasing competition, and changing consumer behavior. Third, we looked at the benefits Internet banking offers to both banks and customers. While cost savings were above all the main benefits for banks, freedom and speed were the benefits for customers. Fourth, we discussed in detail the security issues in Internet banking due to the fact that security has been recognized in some studies as a considerable barrier to the adoption of Internet banking (e.g. Runge and Zimmermann 1997; Furnell and Karweni 1999; Bestavros 2000). This chapter ended up with a description of a typical Internet banking user (in theory) and introduced the topic of consumer behavior models in the financial services industry by examining the model developed by Beckett et al. (2000). Because this dissertation studies consumer behaviors, we aim to develop a descriptive model of consumer behavior in the financial services

industry in the latter part of the study. It is hoped that the chapter has prepared the way for further discussion of consumer behavior in the chapters to come.

3 LITERATURE REVIEW PART II: A PSYCHOLOGICAL APPROACH TO CONSUMER BEHAVIOR

> ”Our species is referred as homo sapiens, or ’human, the intelligent.’ This term reflects the general belief that intelligence is what distinguishes us from other animals. The goal of cognitive psychology is to understand the nature of human intelligence and how it works.” (Anderson 1995, 1)

> “The purpose of a business is to create and keep a customer.”
> (Levitt 1983, 5)

Chapter 3 highlights the importance of studying consumer behavior. Several important areas of consumer behavior research will be addressed. This chapter, structured in two phases, looks at consumer behavior in general, the consumer decision making process, the formation of beliefs and attitudes, and their measurement, in an effort to construct a framework for understanding consumer behavior in electronic banking. In phase one, a cognitive psychological approach to consumer behavior is taken, comprising the dimensions of attention, perception, comprehension, and the consumer decision making process. Phase two discusses the measurement of beliefs and attitudes, the implications of multiattribute models, and outlines strategies for attitude change. The Fishbein multiattribute model (Fishbein and Ajzen 1975) and the Theory of Reasoned Action (Ajzen and Fishbein 1980) provide the theoretical foundation for this study, and hence, will be discussed in detail. In addition, we will ground our discussion in attitude formation. In other words, we analyze how attitudes are formed, and sometimes, changed by marketers. This chapter reviews the consumer behavior literature in order to acquaint the reader with the basic terminology used in the field.

3.1 Theory of consumer behavior

Consumer behavior is a fascinating topic. It is vital for marketers to understand

as much as possible about it. It has been argued that in such a competitive and constantly changing economic environment as we are living today, the survival and growth of companies necessitates precise knowledge about consumers. Therefore, modern marketing addresses the importance of knowing customers and their behavior rather than concentrating on the operations of rival firms. Consumer behavior examines people (what they purchase and why), marketing (the design of products and services), and consumer marketplace itself. Most consumers are not aware of the external influences that guide them toward purchases. For marketers, an understanding of consumer behavior is increasingly recognized as a key factor in success, and it can lead to a competitive advantage for those who can use this information in their strategic and operational marketing (e.g. Peter and Olson 1990, 10-12). There are various definitions of consumer behavior. Wilkie (1994, 14) for instance defines it as follows:

> ”The mental, emotional, and physical activities that people engage in when selecting, purchasing, using, and disposing of products and services so as to satisfy needs and desires.”

Similarly, according to the American Marketing Association (2001) consumer behavior is defined as

> “the dynamic interaction of affect and cognition, behavior, and environmental events by which human beings conduct the exchange aspects of their lives.”

Consumer behavior is often examined through two major psychological disciplines: (1) cognitive psychology, and (2) social psychology. The former refers to knowledge related to mental behaviors, i.e. attention, perception, comprehension and the decision making process. The latter refers to the manner in which personality traits, attitudes, intentions and behaviors of the consumer influence and is influenced by social groups.

Consumer behavior is also interactive between the marketer and the consumer. The central component of this interaction is consumer decision making: “*the process of perceiving and evaluating brand information, considering how brand alternatives meet the consumer’s needs, and deciding on a brand”* (Assael 1981, 10).

In addition, consumer behavior research is a behavioral science. Therefore, its application to marketing has not proceeded seamlessly. For instance, Foxall (1980, 17) states that too much reliance has been placed on psychology and insufficient attention to sociology, geography, and anthropology. Hence, explaining and predicting consumer behavior requires an understanding of all these.

In this dissertation, we ground our discussion around attitude research, attitude models, and the consumer decision making process in order to achieve the goals of the study. Other approaches to consumer behavior research are the behavioral, environmental, and affect and cognition approaches. Behavioral approaches have been used in consumer research since the 1960s; however, they had occupied an important role in psychology for many years before that.

The behavioral approach is mainly based on so-called *applied behavior analysis*. Environmental consumer behavior analysis is based on the idea that consumer behavior is controlled by the environment. The affect and cognition approach is based on psychological theories and it investigates consumer information processing (Peter and Olson 1990, 40).

Consumer behavior models have been very meaningful in academic research (Foxall 1980, 22). However, it has been argued that the majority of models produce very few implications for managers. Instead, managers want information about how their consumers act and react rather than detailed analysis of the type of framework that is considered indispensable for academic projects such as dissertations (Foxall 1974). Nevertheless, consumer behavior models are also valuable to managers as they help managers to organize their learning about consumers by, for instance, segmenting the market environment. Hence, by knowing consumers and their behavior, companies are able to acquire a better understanding of them and build stronger relationships with them. The battle for customers has never been fiercer than it is today. Therefore, companies must understand who their customers are and how they behave. It is only through this knowledge of consumer behavior that companies can satisfy the demands of consumers today and achieve a competitive edge over their competitors. In summary, consumer behavior models should be viewed as a tool with to organize and warehouse consumer data.

3.2 A cognitive processing model of consumer decision making

While this dissertation focuses in particular on the concept of the consumer decision making process (especially attitude research), identified as a key driving force in the adoption of new technology (e.g. Modahl 2000, 8-11), it also traces the concept of attitude from its earliest provenance. Let us begin this discussion by distinguishing between belief, attitude, and intention. Many of us may think that belief and attitude have the same meaning. In the academic literature, the separation of these concepts is of paramount importance. The model presented in figure 7 sheds light on two cognitive processes – interpretation and integration. This model shows the relationship between interpretation processes, integration processes, and long-term memory. In addition, environmental impacts and behavioral consequences are presented.

Cognitive processes operate constantly. In other words, cognitive processes always occur when a person is exposed to an external stimulus in the environment or feels an internal stimulus as an affective response (Peter and Olson 1990, 52). Generally speaking, a stimulus can be defined as *"any specific change in physical energy or an event (whether internal or external to the organism) which excites a nerve impulse and gives rise to a reaction"* (Oxford English Dictionary 1989). As figure 7 clearly shows, two cognitive processes can be distinguished: interpretation and integration processes. Consumers' determination of the meaning of important aspects of the environment surrounding them (both physical and social) as well as their own behavior and

internal affective stages all pertain to interpretation processes. Interpretation involves both attention and comprehension. Attention concerns how the cognitive system selects stimuli to interpret. Comprehension refers to the processes by which the cognitive system creates cognitive representations that stand for the subjective meaning of information.

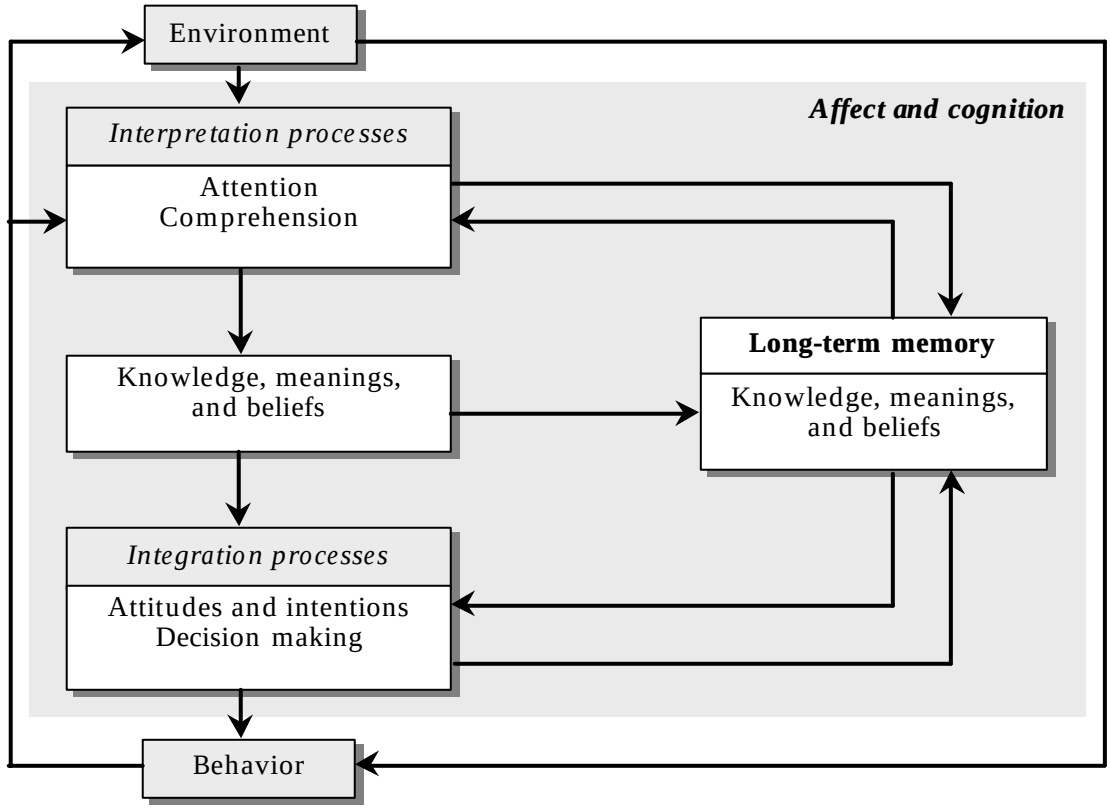


FIGURE 7 Cognitive processing model of consumer decision making. Source: Slightly adapted from Peter and Olson 1990, 106.

Consumers' knowledge, meanings and beliefs are also interrelated with the interpretation process. Peter and Olson (1990, 52) state that these three terms (knowledge, meaning, and belief) are often used more or less interchangeably. Beliefs are discussed later in more detail. For the present, we will only briefly glance at the concept. Beliefs are personal meanings produced by comprehension processes. Moreover, it is vital to note that there is a linkage between beliefs and long-term memory. Beliefs are stored in the long-term memory and when needed, portions of this knowledge may be activated.

The second cognitive process, integration, concerns how consumers combine and use information. Integration processes consist of attitudes and intentions. Attitudes may involve both cognitive and affective responses. Integration processes are used to make decisions or choices about what behavior to perform or to make other behavioral choices besides purchase decisions (Peter and Olson 1990, 52). An example of such action could be, for

instance, the choice whether to bank online or go to a traditional bank branch. Furthermore, consumers may also recommend an experience for others, or the opposite. Attitudes and intentions are also discussed in more detail later.

Another important aspect of the consumer decision making process is that it involves a choice between two or more alternative actions. Thereby, it is widely discussed in literature as a problem solving process. The outcome of this process, i.e. the selected behavior, is a choice that is represented cognitively as a behavioral intention. Generally speaking, a behavioral intention is a plan to engage in a specific behavior. Five basic stages in problem solving can be identified (see figure 8) in consumer decision making. (Assael 1981, 28; Peter and Olson 1990, 172; Schermerhorn 1993, 152).

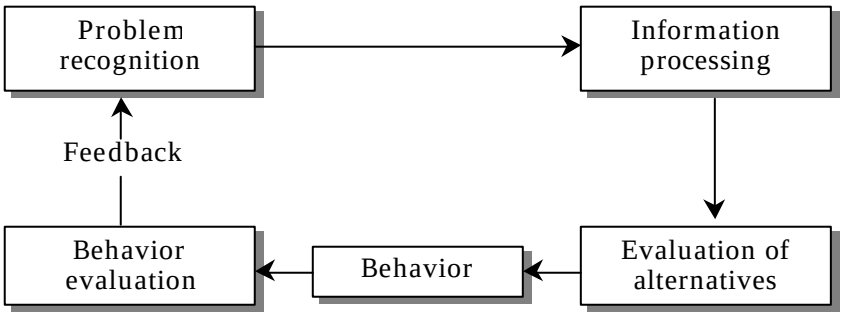


FIGURE 8 Basic model of consumer problem solving.

A variety of models have been proposed which reflect different organizations and different purchasing tasks. Most of this research has focused on the different purchasing stages and the critical decisions at each stage (e.g. Robinson and Faris 1967; Wind 1978).

The first stage is called problem recognition. Consumers become aware of the attitudes they have toward the object (e.g. banking via the Internet gives me more time and freedom). Problem recognition, also called need arousal, is thought to occur when consumers recognize that their current state of affairs is somewhat different from the ideal which they prefer. The second stage of problem solving process involves searching for alternative solutions and searching for more information about the object. This allows consumer researchers to segment consumers in terms of how much information search they do prior to purchase. While limitations on information search have been studied in terms of income, education, market experience, and innovativeness, challenged consumers are likely to face a somewhat unique set of influences regarding what is possible and effective in carrying out a search. In this case, a search is not only affected by prior product knowledge and experience but also greatly influenced by the choice sets that are available to the consumer (Kaufman 1995). The third stage, the evaluation of alternatives, comprises additional information collection; i.e. the more information about the object is collected, the closer the consumer will come to a decision. Hence, the object that comes nearest in meeting consumer's needs will be chosen. The fourth stage involves behavior, i.e. whether to purchase or not, and the fifth evaluation of that behavior, in other words, feedback from the entire process to the first stage

(problem recognition). After a purchase consumers will evaluate the object's performance (e.g. "Internet banking really works and it was a good choice to move online"). Another important aspect is that consumers often provide explanations for their decisions to others and to themselves. This reasoning can, for instance, lead to highly unconventional decisions, as has been shown with empirical data (Bettman et al. 1998; Simonson and Nowlis 2000). Furthermore, the strategic implications of consumer decision making models can be summed up in the following way: models (1) encourage a total and integrative view of consumer behavior, (2) help identify areas of information necessary for making marketing decisions, (3) encourage quantification of these variables (4) provide a basis for segmenting markets, and, finally, (5) provide a basis for developing marketing strategies (adapted from Assael 1981, 26).

To conclude, it is important to note that beliefs and attitudes influence decision making, and thus consumers' overt behavior. Hence, the following sections are essential in understanding how beliefs and attitudes are formed and how they are related to the consumer decision making process.

3.2.1 Components and functions of attention and comprehension

In order to understand the role of cognitive psychology in consumer behavior, we shall consider the relevant concepts in this field in more detail. Let us begin with the interpretation processes. Interpretation concerns the reception and interpretation of external stimuli by an individual. While attention and comprehension are central components of interpretation process, they also influence beliefs consumers have about a certain object. Additionally, in the literature attention is defined in a way very similar to that in which most of us normally think about this concept. Engel et al. (1968, 79) define it as "*the process whereby stimuli are received and interpreted by the individual and translated into a response.*" Additionally, Walters (1974, 138) states that attention is the "*process by which an individual becomes aware of his environment and interprets it so that it will fit into his own frame of reference.*" Similarly, Wilkie (1994, 217) defines attention as "*the momentary focusing of our information processing capacity on a particular stimulus.*" These definitions are helpful in understanding the nature of attention. Furthermore, the consumer behavior literature distinguishes three types of attention (see e.g.Wilkie 1994, 218): (1) planned attention, (2) spontaneous attention, and (3) involuntary attention. In the context of electronic banking, planned attention will be the type most likely to occur. Planned action, for instance, in Internet banking, stands for three types of behavior. First of all, it means locating an Internet-connected device. Second, logging in with personal user ID and password and, third, engaging in behavior, i.e. banking affairs. In other words, planned behavior means behavior planned beforehand.

Attention can also be defined as a process which varies along a continuum from a highly automatic, unconscious level, called *preconscious attention,* to a controlled, conscious level, called *focal attention.* Greater cognitive capacity is needed as interpretation processes move from preconscious attention to focal attention. In the focal attention stage, the consumer becomes more conscious of

selecting and paying attention to a stimulus (Peter and Olson 1990, 113). In the first stage of the attention process information processing is automated and very little made use of cognitive capacity. An example of such a low level of attention is that directed toward low-involvement products like soap, milk and other groceries. At the focal attention stage, consumers are able to control their attention; i.e. they can control which stimuli to attend to.

Attention is of paramount importance for marketers because attracting consumers is the whole basis of marketing. Wilkie (1994, 220) introduces two ways of attracting consumers' attention: *position* and *contrast*. This framework mainly concerns advertising: how marketers should advertise and what kinds of advertisements have the greatest influence on consumer behavior. Peter and Olson (1990, 109) define a better way of attracting attention. They say that marketers have three ways to raise the probability that consumers will be exposed to their information and products: "*facilitate intentional exposure, maximize accidental exposure, and maintain exposure*." For instance, banks could train their personnel to answer consumers' questions about electronic banking on the spot so that customers do not have to wait while the person responsible looks up the answer. Also, a company's distribution channel plays an important role in creating accidental exposures to its products. The Internet offers a new distribution channel for traditional banks and it should be also advertised in that way, for instance as a new opportunity to pay bills without travelling to a bank branch.

Comprehension is part of the interpretation process. Comprehension can be defined as *focused attention on specific stimuli*. Moreover, consumers' knowledge structures are activated from long-term memory. In other words, consumers interpret the meaning of marketing information. Simple comprehension processes are automatic. The less familiar the stimulus is, the more consumers need conscious thought and control. Comprehension is influenced by three main factors. First, it is influenced by knowledge contained in the memory. Second, it is influenced by felt involvement. For instance, consumers who feel high involvement develop deeper meanings for the marketing information, creating more elaborate knowledge structures. Finally, the environment influences comprehension. For example, many factors can affect a consumer's opportunity to comprehend marketing information such as mood, pressure of time, and distractions. (Peter and Olson 1990, 124).

In summary, marketers need to understand the attention and comprehension processes in order to design marketing information that will be interpreted appropriately. For instance, in the electronic banking world, it is vital to understand consumers' attention and comprehension processes. This information helps marketers to elaborate marketing and advertising strategies in the right way.

3.2.2 Components and functions of beliefs, attitudes, and intentions

Generally speaking, beliefs form attitudes. Hence, attitude should be considered as a high-order construct. In this view, several older studies suggest that the definition of belief should be distinct from the definition of attitude

(Krech and Crutchfield 1948; Osgood and Tannenbaum 1955; Katz and Stotland 1959; Steiner and Fishbein 1965).

One of the most noted attitude researchers of our time, Martin Fishbein, states that after many years of attitude research there is still little, if any,

> ”consistent evidence supporting the hypothesis that knowledge of an individual’s attitude toward some object will allow one to predict the way he will behave with respect to that object” (Fishbein 1967, 477).

This observation led Fishbein to create a model to predict consumer attitudes toward an object. He theorized that intentions are interposed as a mediating variable between attitudes and behavior. However, it has been recognized that attitudes are predictive of intentions only at the most global level, and not predictive of specific intentions, which Fishbein suggests are idiosyncratic. Nevertheless, in the present study an attitude research approach has been chosen. Although, attitude has over one thousand definitions, in general attitude can be defined as a relatively stable, overall evaluation of a concept. In the third essay (see chapter 8), we will discuss the most applied definition of attitude by Fishbein and Ajzen (1975). Other similar definitions have been proposed in the literature. Hughes (1971, 9), for example, defines attitude as follows:

> ”an individual’s favourable or unfavourable inclination toward an attribute of an object.”

Lutz (1981, 234) defines attitude as representing covert feelings of favourability or unfavourability toward an object, person, issue, or behavior. Further, Baron and Byrne (1984, 126) define attitude as

> “relatively lasting clusters of feelings, beliefs, and behavioral tendencies directed toward specific persons, ideas, objects or groups.”

Thus, in our definition attitude is *“an overall perception about an object.”* It has been stated (e.g. Foxall 1980, 68) that attitudes both affect and are affected by behavior (see figure 9). Attitudes are themselves influenced by past behavior; hence, the relationship between attitude and behavior is usually represented as a two-way process in which attitude and behavior affect each other. Therefore, if a person has a positive attitude toward electronic banking, he or she is more likely to become a user of electronic banking.

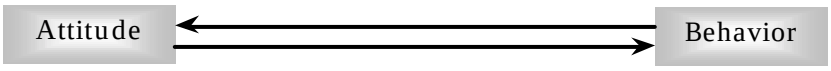


FIGURE 9 Relationship between attitude and behavior

Attitudes are often viewed as determinants of meanings, because they provide a context for the interpretation of new information, and help individuals to evaluate each other’s opinions, organize facts and select facts (Maier 1965).

In the consumer decision making process, attitudes are a central component of the integration processes. Additionally, attitudes are evaluations by consumers of the ability of products or services to satisfy their needs. While attitudes are learned, they can also be changed. For this reason, attitudes are the most often measured aspects of consumer behavior. By knowing consumer attitudes marketers are able to understand their customers better and improve their marketing mix to affect consumer attitudes (Assael 1981, 176; Wilkie 1994, 280-281).

Attitude is said to have three components (see e.g. Fishbein 1965, 107; Baron and Byrne 1984; Spooncer 1992): (1) cognitive component, (2) affective component, and (3) conative component (see figure 10). The cognitive component refers to the knowledge or beliefs a person has about the object (e.g. *"Internet banking is faster than traditional banking"*). In other words, it concerns knowing and believing. The affective (evaluative) component represents the consumers' overall feelings (denoting liking / disliking) regarding the object and evaluation of the brand (e.g.*"I like Internet banking"*). The affective component is also called brand evaluation. Overall evaluation of a product or service by consumers can be measured by rating it from poor to excellent or from prefer least to prefer most. This will be discussed in more detail later. The final component of attitude, the conative component (also called behavioral component), reflects behavioral tendencies toward the attitude object (e.g.*"I would like to have access to Internet banking"*). The behavioral component can be measured in terms of intention to buy or behave in a positive way. Attitude is often viewed as a multi-dimensional concept in the literature (see e.g. Foxall 1980, 67). However, multi-dimensional approach to attitude has not been taken by all academics scholars (see e.g. Foxall 1980, 67). Critics have stated that the various dimensions of attitude may not always correlate with each other. In addition, by measuring only the affective and cognitive elements we might run into a situation where we overlook consumers' overt behavior in the market. The components of attitude are depicted in figure 10.

Consumers form and maintain their attitudes basically for the reason that attitudes are useful to them. Katz (1960) states that attitudes serve four key functions: (1) the utilitarian / adjustment function, (2) the value-expressive function, (3) the ego-defense function, and (4) the organization of knowledge (object-appraisal) function. Understanding the functions of attitudes means comprehending how they serve the consumer. In the utilitarian role, attitudes will direct consumers to products / services that fulfil their needs. In other words, individuals assess the utility of objects for the attainment of their goals (see Foxall 1980, 68). On the contrary, attitudes will direct consumers away from products / services unlikely to fulfil their needs. In value-expressive cases, consumer attitudes allow strongly held personal values to be expressed in consumer behavior. Therefore, attitudes express a self-concept and value system. For example, if a person has a strong need to appear wealthy, he may, for example, purchase an expensive car, and by doing so, express the values the person has (e.g. richness, power). The ego-defense function consists of attitudes that help the ego from anxieties and threats. Many products are purchased to

avoid anxiety-producing situations. Advertising appeals to the nature of ego-defensive attitudes by demonstrating the benefits of usage and risks of non-usage. For instance, to express masculinity consumers smoke Marlboro cigarettes. Marlboro adds may appeal to those who value masculinity and wish to demonstrate it. The last function is called object-appraisal function. In this function, attitudes help consumers to organize the mass of information they are exposed to, and add a structure to their perceptions of the external world. For example, if you see a beautiful house, your attitude toward the house, as well as some things you know about the house (i.e. experience), will quickly help you to remind you that you most probably like it (Assael 1981, 181-183; Wilkie 1994, 283). In summary, attitudes have four different functions, and it is essential for marketers to understand that the function served will affect the individual's overall evaluation of an object. For instance, two consumers having equally favorable attitudes toward beer will vary markedly in the nature of these attitudes depending on whether they reflect a utilitarian function (beer freshens my mood) or an ego-defense function (beer avoids headache) (Adapted from Assael 1981, 183).

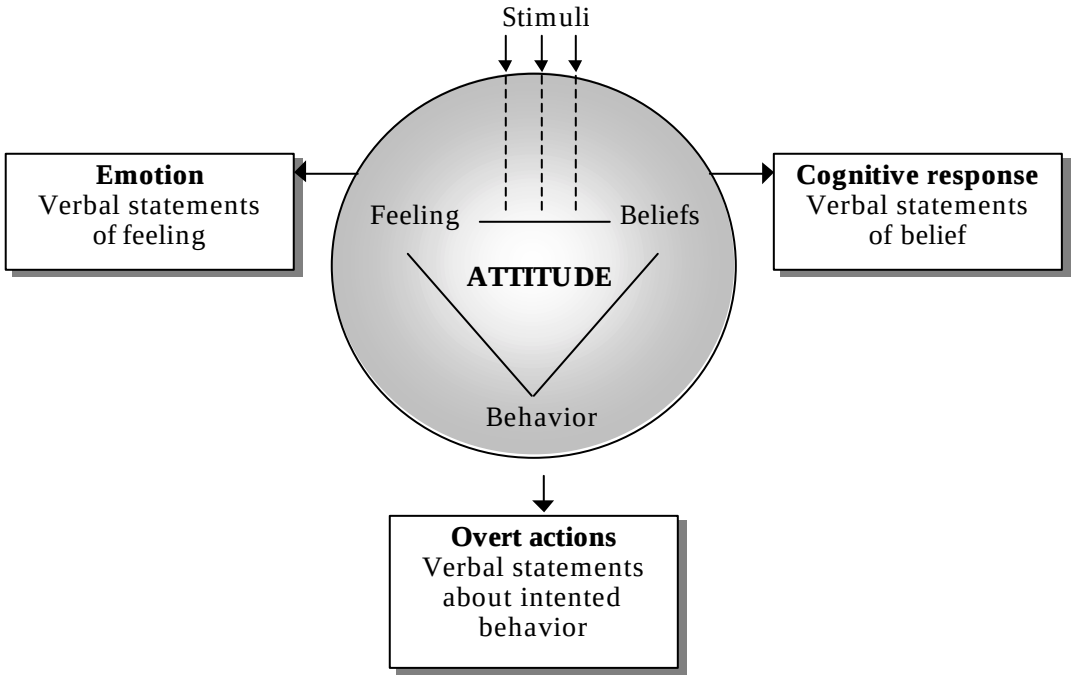


FIGURE 10 Three components of attitude. Source: Adapted from Spooncer 1992.

It has also been argued in the literature that it is important to distinguish between two different attitudes toward an object, that is, two ways of reacting in given situations. First, consumers may be extrovert (can be defined as social/spontaneous). Therefore, they have a tendency to react quickly in a situation. Likewise, extroverts are more inclined toward action than consideration and reflection. Second, consumers may be introvert (withdrawn): they are more inclined to slower reactions to events that occur and to demands

from other people. Likewise, they need more time to incorporate, integrate and absorb impressions from outside. (e.g. Fordham 1959, 27; Jung 1964, 60).

According to Jung (1977, 20) extroversion and introversion indicate in which direction the human energy flows. An extrovert person is oriented toward the outer environment while the introvert is driven by an inner world of conviction, memories, and thoughts. He adds that for both attitudes the case is the same, the outer and inner worlds are linked together, but the flow of energy is the opposite. However, distinguishing between extrovert and introvert consumers may be quite difficult for marketers.

According to the attitude literature, attitudes eventually lead to intentions. In general, intention is viewed as being related to the corresponding behavior. Intentions are a function of certain beliefs. Fishbein and Ajzen (1975, 16) argue that the relevant beliefs are concerned with the behavior itself, and that some of these beliefs influence the person's attitude toward behavior. They state further that attitude toward performing a given behavior is related to beliefs that performing behavior will lead to certain consequences and to a person's evaluation of those consequences. This type of attitude is viewed as a major determinant of the person's intention to perform the behavior. Other beliefs relevant to a behavioral intention are beliefs of a normative nature, which means that a person's behavior is affected by other people. The normative nature is discussed in more depth later in the context of the Theory of Reasoned Action.

3.3 Scales for measuring beliefs and attitudes

It has been widely argued that it is essential to identify the component being measured: beliefs, evaluation, or intention (see e.g. Assael 1981, 187; Wirtz 1999, 82). Issues to be addressed in measuring consumer beliefs, evaluations, and intentions about an object are presented in table 4. There are at least three different ways to measure beliefs and attitudes. These are discussed in more detail in the methodology section (see chapter 4). In brief, the scales to measure beliefs and attitudes are the Likert scale (Likert 1932), the semantic differential (Osgood, Suci, and Tannenbaum 1957), and the accuracy scale.

In addition, tendency to act, i.e. intention, is generally measured on a five-point scale from *definitely will* (perform certain behavior) to *definitely will not*. The first position *definitely will buy* is called top box and marketers pay especial attention to the percentage of consumers who say they will definitely buy, because several studies have shown a close relationship between this percentage rating and the subsequent trial of new products. Single-response measures often place a concept along some bipolar dimension. Whenever this bipolar dimension can be shown to be affective in nature, the judgement can be viewed as indicative of attitude (Assael 1981, 191).

TABLE 4 Measures of attitude. Source: Adapted from Assael 1981.

Brand Beliefs
How likely is it that Brand A has the following characteristics?
Brand A is a highly carbonated cola
Improbable __ __ __ __ __ __ __ Probable
Brand A is a sweet cola
Improbable __ __ __ __ __ __ __ Probable

Overall Evaluation
Rate brand A as follows:
Very favorable __ __ __ __ __ __ __ Very unfavorable
I like it very much __ __ __ __ __ __ __ I don't like it at all

Intention to buy
What is the likelihood you will next time buy this brand A?
Definitely will buy__ __ __ __ __ __ __ Definitely not will buy

3.3.1 Multiattribute models of attitude

There has been wide discussion in the literature about the importance of multiattribute models in attitude measurement. Multiattribute models predict attitudes produced in the integration process. Multiattribute attitude models focus on consumer beliefs about several product or brand attributes (Meyer 1981; Green and Srinivasan 1990). According to Wilkie (1994, 287), multiattribute attitude models view an attitude object as possessing various attributes that provide the basis on which consumer attitudes will depend. In addition, attitudes rest on attribute importance and beliefs about how intensively a brand exhibits each attribute. The main advantage of multiattribute models is that they provide a better understanding of attitudinal structure. The various multiattribute attitude models applied to marketing have one thing in common: they view attitude as a function of consumer beliefs about the attributes of an object. Additionally, multiattribute models weight beliefs by the importance or value of the attributes to the consumer. These models can enable decision makers to discover opportunities for a certain product or service category by providing an intensive representation of consumer perceptions and reactions toward products or services in that category. Finally, multiattribute models of attitude can assist marketers to test the ability of a certain product or service to fulfil those opportunities (Urban et al. 1997; Ozer 1999). However, multiattribute models also make several assumptions that can be considered weaknesses of the models (Ozer 1999). These assumptions are as follows (Wilton and Pessemier 1981 in Ozer 1999):

> "(1) concepts have a finite and stable set of attributes that influence choice and differ for at least some of the concepts; (2) people evaluate concepts based on the attributes; (3) the attributes are correlated to the extent that a reduced space representation is possible; (4) people have a preferred level for concepts along each attribute; and (5) the attributes jointly determine an individual's preference for each concept."

Kahn and Meyer (1991) (in Ozer 1999) find that multiattribute models encounter serious problems with new products or services in at least three sets of circumstances: consumers can be uncertain (1) about the features of the object at the time of purchase, (2) about each feature of the object (i.e. whether the feature is desirable or not), and (3) about the absolute significance of each feature.

3.3.2 The Fishbein model

The most commonly applied multiattribute attitude model in marketing has been the model presented by Martin Fishbein (1975, 29). Several economic and psychological studies have since used the model. Notably, attitude is viewed as a function of two or more beliefs and their evaluation. The model is presented in detail in chapter 8.

Let us consider, for example, a person's attitude toward Internet banking. Assume that he holds the following beliefs about Internet banking (This example is modified from Fishbein and Ajzen 1975, 29-30): (1) Internet banking is faster than ordinary banking, (2) Internet banking gives more freedom (3) Internet banking is not secure (4) Internet banking is easy to use. The strength of this person's beliefs are taken here only as an example and the result is not drawn from any real world situation:

TABLE 5 Hypothetical attitude toward Internet banking**.** Source: Adapted from Fishbein and Ajzen 1975.

Belief	*b*	*e*	*be*
Faster	.90	+2	1.80
Freedom	.80	+2	1.60
Not secure	.60	–1	–0.60
Easy	.50	+3	1.50

Notes: $A_o = \sum b_i e_i = 4.30$

According to the model, a person's attitude toward Internet banking is a function of the strength with which he/she holds these beliefs (i.e. the subjective probability that Internet banking is related to particular attributes), and of a person's evaluations of each attribute. Table 5 presents the subjective probabilities and evaluations that might have been obtained.

As can be seen, a person's overall attitude toward the particular object is 4.30. This person is predicted to hold a positive attitude toward Internet banking. In fact, marketers do not have very much to gain from the general attitude score for a single product. If researchers are calculating overall attitude (A_o) with only one product, it is more useful to measure simply belief strength (b_i) and evaluation of this belief (e_i) than calculate overall attitude A_o. In this dissertation we will utilize this model to calculate attitudes between different user types of Internet banking.

Runyon and Stewart (1987, 462) propose four differences between the Fishbein model and traditional models of attitude. First, traditional models consider attitude to have three components (cognition, affect and behavior)

whereas the Fishbein model conceptualizes attitude as having only one component: affect. Second, the Fishbein model recognizes, and hence, allows that the attitude object may have many attributes that may differ in importance (from this derives the name multiattribute model). Third, the Fishbein model distinguishes intentions and overt behavior. Finally, the Fishbein model does not assume that consumers' overt behavior can be predicted from attitudes. Instead, overt behavior is determined by the individual's intentions.

Thus, the Fishbein model has its limitations. Specifically, the model defines only the relationship between beliefs and attitude; it does not cover intentions or behavior. Another limitation of the model is that the relationship between attitude and intention must be determined empirically, because a consumer with same general attitudes may have different intentions toward an attitude object (e.g. attitude toward religion). It has also been argued that the real value of the Fishbein model for marketing is uncertain. The model assumes a more complex cognitive decision process than is used in many consumer purchase decisions. Moreover, it has been claimed that the model predicts marketing behavior no better than the less complex models. Some criticism has been addressed to the choice of attributes and the importance rating of the selected attributes. For example, a belief rating can be very high for a brand, but the attitude score can be low, because the importance rating for the attribute can be low (Runyon and Stewart 1987, 464-465; Wilkie 1994, 290).

3.3.3 Implications of the Fishbein model

The Fishbein model has been used since the late 1960s. The success of the model is mainly based on its ease of use. The model has intuitive appeal to researchers and managers. The fundamental purpose of the Fishbein model is to provide an insight into the structure of consumer attitudes. Real-life solutions about the Fishbein model can be found in the field of advertising and segmenting. Furthermore, knowledge of the beliefs underlying attitudes can suggest alternative persuasion strategies aimed at change attitudes (Peter and Olson 1990, 147; Wilkie 1994, 290). As a result, the strategic implications of multiattribute models can be drawn together as follows. Specifically, multiattribute models allow marketers to: (a) identify the strengths and weaknesses of a company's brand in relation to the competition, (b) identify the needs of segments of the market on the basis of the value component, (c) determine the need for product repositioning, (d) identify the determinant attributes for strategic purposes, (e) identify new product opportunities. (Assael 1981, 201).

Now we have outlined the attitude formation and measurement. To develop more insights into how effective attitudes are as predictors of overt behavior, we will ground our next discussion in the development of the Fishbein model. A considerable body of research has been done in the relationship between attitudes and behavior. Attitudes toward an object are usually expected to relate to behaviors toward the object. It has been argued that consumer attitudes can be irrelevant to their behaviors. Moreover, overall attitude toward an object may not always have a direct relationship with any

single behavior. For instance, many consumers probably have positive attitudes toward Ferrari cars or Rolex watches, but most do not purchase these products. Because favorable attitudes toward these products can be expressed in many different behaviors, it is difficult to predict which specific behavior will be performed. As a result of this limitation of the previous model, Ajzen and Fishbein (1980) developed a model that identifies the attitudinal factor affecting specific behaviors. This model, called the Theory of Reasoned Action, will be discussed in detail in the following sections.

3.4 The Theory of Reasoned Action

The Theory of Reasoned Action (TRA) is a well-developed and tested behavioral prediction model that has been used successfully since mid 1970s to predict consumer behavior. The TRA, developed in 1967, was revised and expanded during the early 1970s by Ajzen and Fishbein (1980). The theory suggests that in order to understand attitudes and their relation to intentions, it is important to understand consumers' subjective norms, i.e. reference group influences on consumer decision making, regarding a particular action. (Fishbein and Ajzen 1975, 301; see also DeBono 1993).

A subjective norm can simply be defined as *what the consumer believes other people would think of the behavior being performed*. For instance, in a typical purchasing situation in a department store, a consumer may think about what his/her family or friends would think about such product. The Theory of Reasoned Action is a more detailed model than the multiattribute model presented earlier. Thus, Fishbein and Ajzen (1975) recognized that consumer attitudes toward an object might not always be systematically related to their behavior. In addition, they modified and extended the multiattribute attitude model to better relate consumers' beliefs and attitudes to their behavioral intentions.

Moreover, the theory assumes that consumers consciously consider the consequences of the alternative behaviors under consideration and choose the one that leads to the most desirable consequences. The outcome of this selection process is an intention to engage in the selected behavior. In particular, the theory proposes that voluntary behavior is determined by the intention to perform the behavior.

According to Runyon and Stewart (1987, 487) the TRA is one attempt to integrate attitude theory with research on reference groups and group influence. The theory also makes clear the complexity of consumer behavior and the danger of isolating one aspect of behavior for use in predicting consumers' actions. Moreover, a positive attitude toward an object does not always lead to a purchase. For marketers, this means that it may not be enough to change the attitude of the individual consumer. Rather, the influence of significant others must also be dealt with, and for this reason Runyon and Stewart consider the TRA very useful. In addition, they argue that the TRA takes into account all the factors influencing a consumer rather than isolating

one single component for use when predicting behavior. The entire model of the Theory of Reasoned Action is presented in figure 11.

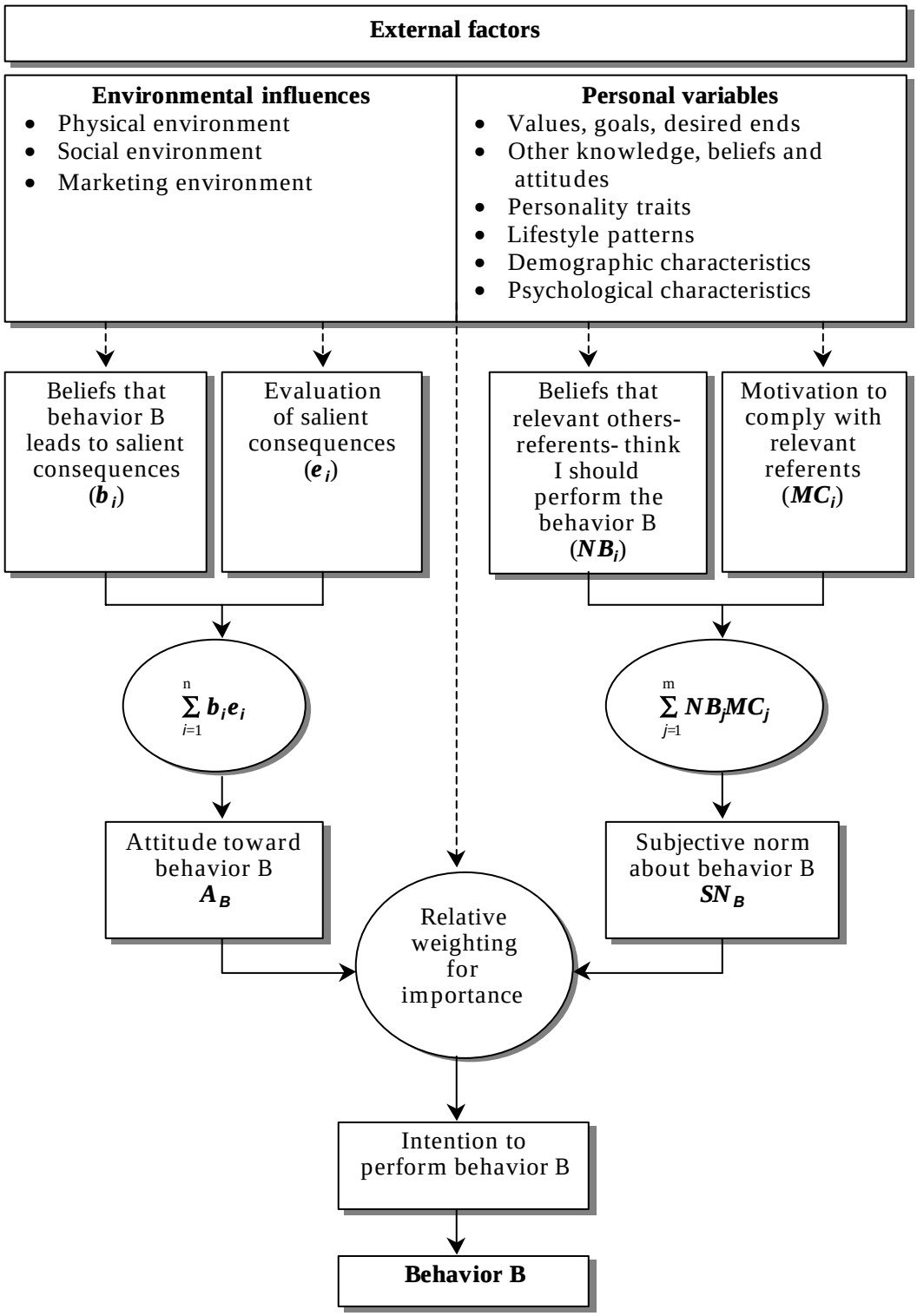


FIGURE 11 The Theory of Reasoned Action. Source: Adapted from Fishbein 1980.

Formally, the Theory of Reasoned Action can be presented as follows (Fishbein and Ajzen 1975, 301):

$$B \sim BI = (A_B)\, W_1 + (SN)\, W_2$$

where B = a specific behavior, I = consumer's intention to perform behavior B, A_B = consumer's attitude toward performing behavior B, SN = subjective norm regarding whether other people want the consumer to engage in that behavior, and W_1 *and* W_2 = empirically determined weights that reflect the relative influence of the A_B and SN and components on BI.

As stated, the TRA has been used in various behavioral science disciplines in order to predict and understand consumer behavior. Riemenschneider and McKinney (2000) reviewed some of the applications of the TRA. They state that the TRA has been used to study behavior and attitudes toward computer privacy issues (Loch and Conger 1996), to examine user acceptance of computer technology (Davis et al. 1989), and to predict intention to learn to use a PC (Yeaman 1988). The TRA has proven its merits in similar research disciplines, and thus, its use as background for the present study should be well justified.

3.4.1 Components of the Theory of Reasoned Action

This section discusses the components of the Theory of Reasoned Action. The theory consists of two major factors: a personal or *attitudinal* factor, A_B, and a social or *normative* factor, *SN*, which are given empirical weights. Let us start the discussion with the former, attitudinal factor, A_B. This factor refers to the consumer's attitude toward performing the behavior in question under given circumstances. As we saw in chapter 3.2, a consumer's attitude toward a specific behavior is proposed to be a *"function of the perceived consequences of performing that behavior and of the person's evaluation of those consequences"* (Fishbein and Ajzen 1975, 301). The latter factor, the normative component, *SN*, deals with the influence of the social environment on behavior. As we saw earlier, the normative component reflects consumers' perceptions of what they think other people want them to do. In other words, the subjective norm is determined by the perceived expectations of specific referent individuals or groups, and by the person's motivation to comply with those expectations. Fishbein and Ajzen (1975, 302) introduce the formulation of subjective / social norm symbolically as follows:

$$SN = \sum_{i=1}^{n} b_i\, m_i$$

where b_i is the normative belief, regarding *doing what other people want me to do*, $m_{i\,the}$ motivation to comply with different i, and n is the number of relevant referents. Measuring the strength of normative beliefs (b_i) is similar to the belief-strength measures discussed earlier. For example, the questions to be addressed could be of these kinds (see e.g. Ajzen 1991):

The example of other people influences me to bank online
extremely unlikely 1 2 3 4 5 6 7 extremely likely

or
My family thinks that
I should 1 2 3 4 5 6 7 I should not
use Internet banking services

Furthermore, the motivation to comply (m_i) should be measured by asking consumers to rate how much they want to conform to other people's desires (Ajzen 1991; Peter and Olson (1990, 156-157). The questions to be asked here could be formulated as follows:

Generally, how much do you want to do what other people want you to do?
not at all -3 -2 -1 0 1 2 3 very much
or
Generally speaking, how much do you want to do what your family thinks you should do?
not at all -3 -2 -1 0 1 2 3 very much

Ajzen (1991) states that measures of normative belief strength (b_i) and motivation to comply (m_i) *"with respect to each accessible referent offer a 'snap shot' of perceived normative pressures in a given population."*

Moreover, the TRA proposes that attitude (A_B) and subjective norm (*SN*) combine to affect behavioral intentions (*BI*), and that their relative influence varies from situation to situation. Some behaviors will be primarily affected by the *SN* factor. (Peter and Olson 1990, 157). They gave an example of this situation:

> "For instance, intentions to wear a certain style of clothing to a party or to work are likely to be influenced more strongly by the normative beliefs underlying *SN* than beliefs about the general consequences wearing those clothes (A_B). For other behaviors, normative influences are minimal, and consumers' intentions are largely determined by A_B. For instance, consumer's intentions to purchase Contac cold remedy are more likely to be affected by their salient beliefs about the functional consequences of using Contac and the resulting attitude toward buying it than by what other people expect them to do."

We have now discussed two of the major factors of the Theory of Reasoned Action. The component *B* is specific behavior in a target situation. In general, behaviors are specific actions directed at a target object. Furthermore, marketers need to be aware of the behavior of interest, because the components of the Theory of Reasoned Action must be defined and measured in terms of these specific features. Peter and Olson (1990, 153) argue that behavioral intention, *BI*, is a proposition connecting self and future action. Behavioral intentions are created through the consumer decision making process, in which beliefs about two types of consequences, A_B and *SN*, are integrated to evaluate alternative behaviors and select among them. Behavioral intentions can be defined as a plan to engage in specific behavior. In other words, behavioral intentions are the likelihood of doing something, like purchasing. Thus, an intention is a type of judgement about how, in the present context, an individual will behave toward a particular service offered. Generally speaking, behavioral intentions can be measured by asking consumers to rate the probability that they will perform the behavior of interest:

"How likely are you to use the Internet when paying bills next time?"
extremely unlikely 1 2 3 4 5 6 7 extremely likely

Specifically, Ajzen (1991) proposes that several intention items should be used to assess behavioral intentions, as shown in the following examples. It should be noted, according to Ajzen (1991) that the set of items used must be shown to correlate highly with each other to ensure high internal consistency (adapted from Ajzen 1991):

"I intent to pay my bills via the Internet for at least three times in the forthcoming month"
extremely unlikely 1 2 3 4 5 6 7 extremely likely

"I will try to pay my bills via the Internet for at least three times in the forthcoming month"
definitely true 1 2 3 4 5 6 7 definitely false

"I plan to pay my bills via the Internet for at least three times in the forthcoming month"
strongly disagree 1 2 3 4 5 6 7 strongly agree

To sum it up, the TRA suggests that a consumer's intention to perform any behavior is determined by the attitude toward performing the behavior (A_B) and by the subjective norm (*SN*).

3.4.2 Other factors influencing the Theory of Reasoned Action

To develop further insights into how the TRA has been criticized, and hence, developed, we outline and analyze the limitations of the model. The theory suggests that *"additional variables external to the model can influence intentions only indirectly by influencing either of the two components or their relative weights"* (Fishbein and Ajzen 1975, 307). Thus, a given variable can have an effect on intentions if it meets one or more of the following conditions: (1) it influences the attitudinal component (A_B), (2) it influences the normative component (*SN*), or (3) it influences the relative weights of the two components.

As seen above, the TRA distinguishes three possible approaches to changing consumers' behavior. These are changing the consumer's attitude, changing the consumer's subjective norm, or changing the relative weight of one or both of these. Furthermore, these changes will only take place when the component that is changed is closely connected with intention (Ajzen 1971; McCarty 1981).

Intention is the best predictor of behavior. Attitudes and subjective norms influence intention. Fishbein and Ajzen (1975, 301) have claimed that variables not explicitly included in the TRA (e.g. demographic variables, attitudes toward the target object, and personality traits) can affect intention and behavior only if they influence the relevant attitudinal or normative considerations or their relative weights. Bagozzi et al. (1992), for instance, studied coupon usage in the frame of the TRA. They found that an individual's prior experience of using coupons has an effect on intention but not directly on future behavior.

The TRA has been criticized in the literature. The main weakness of the model concerns the relationship between behavioral intention and overt behavior. It has been claimed that behavioral intention and behavior are not

always closely related. In the TRA, there are three conditions in which the intention of an individual can accurately predict a person's behavior. First, intention and behavior measures correspond in specificity of action, target, context, and time frame. Second, intention and behavior do not change in the interval between the assessment of intention and the assessment of behavior. Finally, the behavior in question is under the individual's volitional control, i.e., a person can decide whether to perform or not perform the behavior. If these three conditions do not exist, the prediction of behavior will be poor. (Fishbein and Ajzen 1975; 302-303; Ajzen and Fishbein 1974; Fishbein and Ajzen 1976; Godin and Kok 1996; Sarver 1983). If these conditions are met, the TRA will have considerable validity. We assume in conducting the present study that these three conditions are present.

However, under circumstances in which volitional control of the behavior might be hindered by internal and external factors, the TRA is a relatively poor predictor of behavior. Hence, the developers of the TRA, i.e. Fishbein and Ajzen, realizing the limitations of the theory, added a third component to the theory: the concept of perceived behavioral control (PCB). PCB refers to a person's *"beliefs about the presence of factors that may facilitate or impede performance of the behavior and the perceived power of these factors"* (Ajzen 1991). This new theory is known as the Theory of Planned Behavior (TPB). According to this theory, behavior is guided by behavioral beliefs, normative beliefs and the controlling of beliefs (Ajzen 1991; Ajzen and Madden 1986). These then lead respectively to *attitude toward the object* (A_B), *subjective norm* (A_B), and *perceived behavioral control* (*PBC*). In combination, the three factors then lead to the formation of a behavioral intention. The TPB has been used in many studies and variety of situations. Riemenschneider and McKinney (2000) present an interesting review of these studies. They say that the TPB has been used to predict weight loss behavior (Schifter and Ajzen 1985), a person's intention to use an information system (Mathieson 1991), student usage of a computer resource center (Taylor and Todd 1995), and to study the emergence of new business (Krueger and Carsrud 1993). However, given the primary objective of the present dissertation stipulated in chapter one, we do not propose to discuss this theory in detail here. We assume that the results of our study will not heavily depend on whether we base the development of our model on either the TRA or the TBP.

In addition, many empirical studies have shown how the subjective norm impacts on consumer behavior (e.g. Snyder and Fromkin 1977; Fromkin and Snyder 1980; Baumeister 1982; Guerin 1986; Snyder 1992; Simonson and Nowlis 2000). Similarly, as Bagozzi (2000) has shown with empirical data, social factors and forces (i.e. subjective norm) are strong determinants of consumer behavior. Likewise, many other studies have addressed the importance of social phenomena in consumer decision making (e.g. Shaw 1981; Gilbert 1992; Searle 1995; and Tuomela 1995; in Bagozzi 2000).

To conclude, the TRA has proved its merits in being a standard against which other researchers can test their own theories and models. It is also the only theory on the determinants of behavior that has undergone extensive empirical examination. Because of this, no other theory of behavioral intention

has been as influential. Furthermore, the TRA identifies the factors that underlie consumers' intentions to perform a specific behavior. The theory is helpful in predicting consumer behavior and understanding attitudes. In addition, the TRA looks at intentions rather than attitudes as the most important predictors of overt behavior. However, as stated above, the measures of consumers' intentions may not always be perfect indicators of the intentions that actually determine their behavior.

3.5 Marketing applications: strategies for attitude change

3.5.1 Traditional attitude change strategies

It has been argued that attitudes can be changed over time. Attitude change is the primary goal of marketing strategy (Runyon and Stewart 1987, 477). As stated earlier, consumer attitude toward an object is determined by a person's salient beliefs that the object possesses certain attributes and by consumers' evaluations of those attributes. Thus, traditional attitude change strategies include the following options (Fishbein and Ajzen 1975, 396): (1) add a new salient belief about the attitude object (new b_i), (2) increase the strength of an existing positive belief (b_i), and (3) increase the evaluation of a strongly held belief (increase e_i).

Adding a new salient belief to the existing beliefs that consumers have about an object is probably the most common attitude change strategy (Lutz 1975; Mitchell 1985). This strategy usually requires an actual change in the product or service. A good example of this can be found in the banking sector, where new salient beliefs are added to the service through the provision of electronic distribution channels. Further, the second way of changing consumer attitudes toward an object is to increase the strength of existing beliefs about the object. In other words, changing the strength of one or more of the existing salient beliefs changes attitudes. From a practical perspective, marketers can, for example, attempt to increase the strength of beliefs about positive attributes and consequences or decrease the strength of beliefs about negative attributes and consequences. Let us consider electronic banking again: the aim of today's bank marketing is to ensure that the new delivery channels are perceived as an easy, fast and convenient way to access bank accounts. The third traditional attitude change strategy, increasing the evaluation of a strongly held belief refers to the extent to which consumer attitudes can be changed by changing the evaluative aspect of an existing, strongly held belief. Worth noticing that a person's evaluation of an attribute represents his/her attitude toward the attribute. For example, Kellogg's have tried to enhance consumer attitudes by linking the food attribute fiber to cancer prevention (see Peter and Olson 1990, 150).

The major problem underlying attitude change is in identifying the primary beliefs responsible for a given attitude. Fishbein and Ajzen (1975, 396) have resolved this problem quite easily. They argue that

> "any belief that associates the attitude object with some other object, concept, or property and that is part of the person's salient belief hierarchy constitutes a primary belief. It is important to note that the object of the primary beliefs is expected the same as the object of the attitude which is to be changed."

However, this theory has some limitations. Fishbein and Ajzen (1975, 397) gave an example about an attempt to change attitudes toward communism. Salient beliefs link communism to such attributes as totalitarian government, socialism, and lack of freedom. These salient beliefs are primary beliefs about communism and would therefore constitute appropriate target beliefs. If the above attributes are associated with a particular communist country, however, e.g. the former USSR, they no longer serve as primary beliefs with respect to attitudes toward communism. Indeed, the set of attributes might be completely unrelated to the individual's primary beliefs about communism. It is noteworthy that even appropriate target beliefs may represent only part of the primary beliefs determining a given attitude.

3.5.2 Four theories of attitude change

In addition to the strategies described above, other attitude change strategies are available in the consumer behavior literature. For example, Runyon and Stewart (1987, 478) introduced four theories of attitude change: (a) cognitive consistency theory, (b) information processing theory, (c) cognitive response theory, and (d) the Theory of Reasoned Action.

First, the cognitive consistency theory suggests that creating an imbalance among the cognitive, affective, and behavioral components of attitude change attitudes. Basically, the idea underlying this theory is that consumers tend to be consistent in their beliefs, attitudes, and behavior. Thus, any inconsistency acts as a stimulus to change the balance. Second, information processing theory suggests that attitude change occurs via the provision of information This theory is both widely used and relatively effective. In an interesting paper, Ariely (2000) examines how information processing affects consumers' decision making and preferences. He argues that new technological developments in computers and networks have not only caused significant changes in consumer information processing, but also allowed marketers to integrate marketing and communication processes via the Internet. For a deeper analysis of information processing theory see e.g. Wilkie 1975; Weitz 1978; Alba et al. 1979; Bettman 1979; Hoffman and Novak 1996; in Ariely 2000. Third, cognitive response theory is related to information-processing theory, but differs in one respect: it emphasizes the active response to information. As Biel (1996) put it: "*the cognitive response concept centers on the way in which messages evoke self-oriented thoughts.*" The elaboration likelihood model, which explains the different ways of persuasion, is used in cognitive response theory. The model suggests that active information processing will only occur when consumers have both the ability and motivation to process information. Conversely, without the ability or motivation to process information, a person is more likely to engage in little information processing and to use simple decision making

rules. Finally, as already stated earlier, the TRA suggests that both attitude and subjective norm are determinants of intention and behavior.

3.5.3 Adaptive attitude change strategies

Adaptive attitude change strategies can be divided into four categories as figure 12 reveals. In each of these strategies, the marketer seeks to reinforce positive attitudes and appeal to consumer needs without making any attempt to change those needs or attitudes. This fourfold table consists of two dimensions: the user dimension and the product dimension (Assael 1981, 213).

	Existing products	*New products*
Existing users	Reinforcing existing users	Positioning new products to existing users
New users	Attracting new users	Positioning new products to new users

FIGURE 12 Adaptive marketing strategies. Source: Assael 1981, 213.

Advertisers seek to reinforce existing users in order to maintain positive attitudes toward the object. In this way, the advertiser aims to ensure the loyalty of its core users. New users are attracted to existing products or services by the demonstration of benefits that satisfy their unmet needs. Companies have, for example, attracted new users by extending their appeal to new segments of the market. Positioning new products to existing users involves products that meet the defined needs of existing users of a particular product category. Moreover, these products represent line extensions of existing products or services (e.g. electronic retail banking). In the lower right-hand quarter, positioning new products to new users, marketers seek opportunities to meet the needs of new and emerging markets. The core of this quarter lies in technological development, which enables companies to develop new products. To sum up, the principles of attitude change can be outlined as follows: (a) attitudes are easier to change than needs; (b) the cognitive component of attitude (beliefs, b_i) is easier to change than the affective component (evaluation, e_i); (c) weak attitudes are easier to change than strong ones; (d) attitudes held by consumers with less confidence in their brand evaluations are easier to change; (e) attitudes are easier to change when information is ambiguous; (f) attitudes are easier to change when there is a low level of ego involvement; and (g) attitudes are easier to change when they conflict with each other. (Assael 1981, 218-219).

3.5.4 Resistance to attitude change

Although attitudes can be changed in various ways, there are at least two fundamental factors that create resistance to attitude change. First, attitudes are likely to have arisen at an early age, and thus, can be said to be virtually personality traits. Second, attitudes correlate with each other, and hence, are difficult to change piecemeal. In a recent paper, Ahluwalia (2000) pointed out that people with stronger attitudes are less likely to change their attitudes than consumers with weaker attitudes. She also suggests that studying resistance to attitude change is not only approved in theory, but it also has a pragmatic value as well (see also Petty and Cacioppo 1986; Kunda 1990; Haugtvedt and Petty 1992; Eagly and Chaiken 1995; in Ahluwalia 2000). For instance, understanding resistance is essential in evaluating how strong an attitude to a brand is. Furthermore, the value of loyalty (i.e. the dimension of attitude strength) can be measured in terms of the resistance it generates in response to the attitudinal information. (Ahluwalia et al. 2000).

3.6 Review of the literature: summary and conclusion

The literature review was done in two phases. In phase one, i.e. chapter two, we highlighted the basic terminology of electronic banking, and outlined the current trends in the financial markets. Chapter two ended up with a discussion of consumer perceptions and reactions toward Internet banking. In phase two, i.e. chapter three, the primary objective was to review two areas of the consumer behavior literature: (1) cognitive psychology and (2) social psychology. The cognitive model of consumer decision making showed how beliefs, attitudes, and intentions are related to overall consumer decision making. We then outlined the components and functions of attention and comprehension. Next we presented the components and functions of belief, attitude, and intention. We saw that beliefs are descriptive thoughts that a person has about something. Further, attitude was initially defined as learned predispositions to respond to an object in a favourable or unfavourable way. We then defined attitude in a more general way as a person's overall perception of an object. Intention was described as a function of certain beliefs that influence a given behavior. We also discussed the different techniques for the measurement of beliefs and attitudes. Moreover, we discussed consumer attitudes toward objects, A_0, and described Fishbein's multiattribute model that measures a person's attitude toward an object. Further, we saw how beliefs and attitudes are related to the consumer decision making process, and discussed the Theory of Reasoned Action (TRA) which identifies consumer attitudes toward performing behaviors (A_B) and social influences (SN) as the basis for behavioral intentions (BI). We saw that many factors influence the TRA. Finally, we discussed different attitude change strategies. We concluded the discussion of attitude change by outlining some basic principles relating to attitude change. The primary goal of chapter three was to identify consumers' activated

knowledge, in the form of beliefs, as the basic factor underlying their attitudes, subjective norms, and intentions, and finally, their behaviors. Moreover, we showed that these beliefs, and the resulting attitudes and intentions, are very sensitive to situational factors in the environment, including marketing strategies.

4 METHODOLOGICAL STANDPOINTS

This chapter, structured in three phases, discusses the research methodology of the dissertation. In phase one, the strategy of the study and sampling methods are presented. Both quantitative and qualitative research methods were used, as suggested in the literature (e.g. Sieber 1982; Strauss 1987). Phase two addresses the study methodology and its limitations. Methodologically this study follows an abductive research approach, together with causal modeling, accepted as usable in behavioral research (Glaser 1992, 18). Additionally, the second part outlines the reliability and validity of the study. Finally, the empirical measures and analytical strategy used are discussed.

4.1 Strategy of the study and sampling methods

While this dissertation mainly focuses on analyzing quantitative data, it also utilizes qualitative data. It has been argued that the linking or integration of these provides a deeper insight into survey results (Sieber 1982; Strauss 1987; Bryman 1988, 1992; Mason 1994). In order to achieve the aims of the study, we used both quantitative and qualitative methods, built into a two-stage research design. The first stage was a large-scale survey (1167 respondents). The sample was statistically significant and representative of the population of Finnish private bank customers, achieved through MeritaNordbanken's customer database. In the second, qualitative, stage of the study 30 in-depth, semi-structured, tape-recorded interviews with private bank customers were conducted. The survey method was used to provide a broad picture of the phenomenon, and the qualitative method to cover the same ground in greater depth, and to confirm the survey results.

4.1.1 Quantitative study

The data were collected by means of a questionnaire that was mailed in the

summer 2000 to 3000 individual consumers in Finland and by personal interviews with some of the respondents. The quantitative data, which consisted of the 3000 questionnaires, was first divided into three different groups. The first group, nonusers, were not using electronic banking in 1997 and were not using it in July 2000. The second group was made up of new users of electronic banking (new users). They began using electronic banking after 1997. The last group consisted of long-standing users of electronic banking, named in our study old users. They were using electronic banking services in 1997, or before, and have used them since. A total of 1000 questionnaires were mailed to each group. Almost all the respondents were customers of MeritaNordbanken. While the data forms the basis of the research papers, the concern of this chapter is to highlight some of the issues concerning the data and its collection.

Responses were received after a follow-up overall 1167 of the total 3000 questionnaires mailed. This response rate (38.9%) was well above our expectations and also a little above the 20-30 percent rate considered acceptable in economics research. Of the 1190 responses received, 23 were discarded as they were either blank, inappropriately filled, or gave answers to only one or two questions. Questionnaires were first posted at the end of May 2000, and then remailed in early July 2000.

The questionnaire was designed and developed in a close cooperation with experts from different research fields. After the questionnaire was constructed, it was pre-tested with a reference group who did not participate in the survey, but were chosen to match the composition of the true sample. The pre-test served mainly as a check on the layout and comprehensibility of the questionnaire. In the pre-test, each question was discussed, evaluated and analyzed in order to make the questionnaire as clear and easy to complete as possible. Finally, the questionnaire was slightly modified, translated into Swedish by a professional translator, and mailed to the respondents. Swedish is the second official language in Finland besides Finnish, and we assumed that presenting the questionnaire in the respondent's mother language would have a positive impact on the response rate. Thus, we took several other measures in order to increase the response rate and detect nonresponse bias. However, as these are already discussed in one of the research papers by the author, they will not be discussed again here (see Armstrong and Overton 1977; Morton-Williams and Young 1987; Bergmann et al. 1990; Churchill 1995; Dorsch et al. 1998 in Karjaluoto et al. 2002b).

4.1.2 Qualitative study

In this phase of the study our purpose was to investigate further the true implications of the survey responses. We conducted a total of 30 in-depth interviews with MeritaNordbanken customers all over Finland. The interviewees were chosen on the basis of their electronic banking experience and geographical location. Thus, interviews were conducted in a geographically very diverse area; i.e. all regions of Finland were presented. We conducted interviews for instance in Helsinki, Tampere, Uusikaupunki, Kuopio, Seinäjoki,

Porvoo, and Rovaniemi. The interview request was sent to a total of 270 survey respondents, of whom 90 were nonusers, 90 new users, and 90 old users. A total of 30 people were then chosen for interview, ten from each group. The list of interviewees is presented in Appendix A.

The personal interviews were conducted in July 2000. The empirical method used was the subject interview, in which we discussed issues concerning attitudes towards computers, technology, and the environment. We also discussed the influence of social groups and playfulness in the context of banking. Final area of conversation was the future of banking. One important area we discussed was loyalty. We made interesting findings about customer loyalty in the banking sector. The results of the in-depth interviews are presented in the final chapter. Basically, three issues held the key to the design of the interview: (1) consumer attitudes toward technology, (2) reference group influence, including social aspects, and (3) electronic banking vs. branch banking

A semi-structured subject interview format was chosen since it is not bound to direct questions, and is also the preferred approach in the social sciences (see e.g. Pomeroy 1999; Scott 2000). An open framework of this kind, which allows better for two-way communication, is guided only by some form of interview guide such as our matrix (see Appendix B). While the questions are not all prepared forehand, the conversation allows both the interviewer and the person being interviewed the flexibility also to discuss related issues and probe for details. Nearly all the interviews were conducted at the participant's residence, and lasted between 60 and 90 minutes.

4.2 Methodology and its limitations

In theory, a researcher has three alternatives in selecting a methodology. Three options are inductive reasoning, deductive reasoning, and a combination of both known as abductive reasoning (see e.g. Cohen and Manion 1994, 3). We chose to ground our study on abductive reasoning, which we shall now describe in more detail.

Deductive reasoning can be defined as reasoning of the form *if A then B* (Trochim 2000). In other words, deductive reasoning means working from the more general to the more specific. Thus, the starting point for deductive reasoning is a *theory* that the researcher narrows the focus to increasingly specific hypotheses and observations, which address those hypotheses. Finally, the researcher tests the final hypotheses with specific empirical data in order to confirm or reject the original theory. Deductive reasoning has often been used in the social sciences (e.g. philosophy and politics).

Inductive reasoning can be thought of as the opposite of deductive reasoning. Inductive reasoning works from specific observations to broader generalizations and theories, and ends with a conclusion that goes beyond any of the observations researcher made in the beginning of his/her study.

Inductive reasoning is broader in nature than deductive reasoning (Anttila 1999). Figure 13 displays the differences between the two types of reasoning:

FIGURE 13 Deductive and inductive reasoning. Source: Trochim 2000.

However, these two methodologies rarely occur in isolation. In fact, most research involves both methods, inductive and deductive reasoning, at the same time (see e.g. Glaser 1992, 18). This mixed approach is the third option for a researcher, and is known as abductive reasoning. It can be defined as reasoning in which explanatory hypotheses are formed and evaluated (e.g. Thagard and Shelley 1997). The starting point for abductive reasoning is a *guiding principle* that the researcher has found in the previous academic literature. Grönfors (1982, 35) has claimed that this guiding principle can be either a fuzzy intuitive concept or a developed theoretical model.

What then are the reasons for choosing abductive reasoning as the theoretical basis of this thesis? First of all, as stated earlier, most social research uses both deductive and inductive reasoning, at the same time. Second, our research area is a little studied territory, and no generally accepted theory or framework is available in electronic banking literature. Because of the nature of the research, abductive reasoning seems the most suitable methodology. Moreover, abductive reasoning allows the researcher to found and add new elements of interest into the theory.

Moreover, Three basic types of research design besides inductive, deductive, and abductive reasoning are distinguished in the methodology literature. Churchill (1995) and Aaker et al. (1995), for instance, separate three research approaches: exploratory, descriptive, and causal research. Methodologically this dissertation follows the causal research approach in positing a clear relationship between beliefs, attitudes, intentions, and behaviors. Typical causal models such as the Theory of Reasoned Action (TRA) and the Theory of Planned Behavior (TPB) have been applied and validated in a large number of causal-type studies (see Chang 1998). Specifically the TRA and TPB are said to symbolize the causal modeling approach (e.g. Songer-Nocks 1976; Bentler and Speckart 1979). Therefore, the implementation of these models in the present study lends support to the causal research methodology. We have rather substantial theoretical backing in specifying our models and defining the study as causal research. However, this study has also descriptive elements as the phenomenon to be studied, electronic banking, is comparatively new in the field of academic research.

Causality refers to the strength to which two or more variables measured associate together (Bagozzi 1980, 33). In general terms, causality means that a

change in variable A will cause a change in variable B. Similarly, as Ekström (1992) argues, the most widely accepted definition of causality is the empiricist theory formulated by David Hume (1966) where causality is regarded as a matter of empirical regularities. Ekström (1992) writes:

> ”causal conclusions are assumed to be based on the observation of how a certain event is followed again and again by a certain other event, not on knowledge of causal mechanisms and the generative properties of things. To the empiricist view the relation between cause and effect is an external one. Cause and effect are regarded as separate and independent objects, i.e. objects that do not depend on one another for their constitution. This relation of independence becomes a central criterion of causality.”

In the present study, the primary research question, *how are attitudes toward electronic banking formed and how are they related to the use of Internet banking?* addresses a typical causal research problem: identifying relationships between different variables and factors. Causality is at issue in the model displaying the relations between different factors, such as attitude and actual Internet banking usage. Thus, a change in one, for example in attitude, will cause a change in another, e.g. in usage.

Causal modeling has various limitations. First of all, the concrete import and effects of causal modeling are related to the context. Thus, the reconstruction of the relevant social, temporal and spatial context becomes of primary importance. Second, the study of causality should be guided by concepts and theories. It should be borne in mind that empirical generalizations through causal modeling are always conditional. (Ekström 1992).

Keat and Urry (1975, 97) for example, suggest that causality should be studied through regression models, structural equations, and comparative methods. Additionally, Sayer (1984) indicates that through correlation techniques researchers are able to acquire a deeper understanding of the significance of the causal explanations of social actions. Therefore, in this dissertation, statistical tools such as correlation and regression techniques as well as structural equation modeling are used. The statistical program used to perform the structural equation modeling analysis was LISREL 8.30 (Jöreskog and Sörbom 1996). Structural equation modeling (SEM) is a confirmatory approach to data analysis used in causal research (e.g. Byrne 1994). Figure 14 illustrates a hypothetical model of causal modeling including most of the elements of LISREL type modeling.

This hypothetical model displays the observed and latent variables needed in causal modeling. The variables can be classified as follows (Jöreskog and Sörbom 1993, 136):

- the dependent Eta (η)-variables. All latent variables appearing on the left side of the equal sign in the relationships are Eta-variables. In the diagram above, the Eta-variables are those in circles or ellipses that have one-way arrows pointing to them
- the Ksi (ξ)-variables are the remaining latent variables in the model recognized as those in circles or ellipses without one-way arrows
- the observed Y-variables depending on Eta-variables

- the observed X-variables depending on Ksi-variables
- the Zeta (ζ)-variables which are the error terms in the structural equations
- the Epsilon (ε)-variables which are the measurement errors in the Y-variables. They are represented by one-way arrows on the right side
- the Delta (δ)-variables which are the measurement errors in the X-variables. They are represented by one-way arrows on the left side

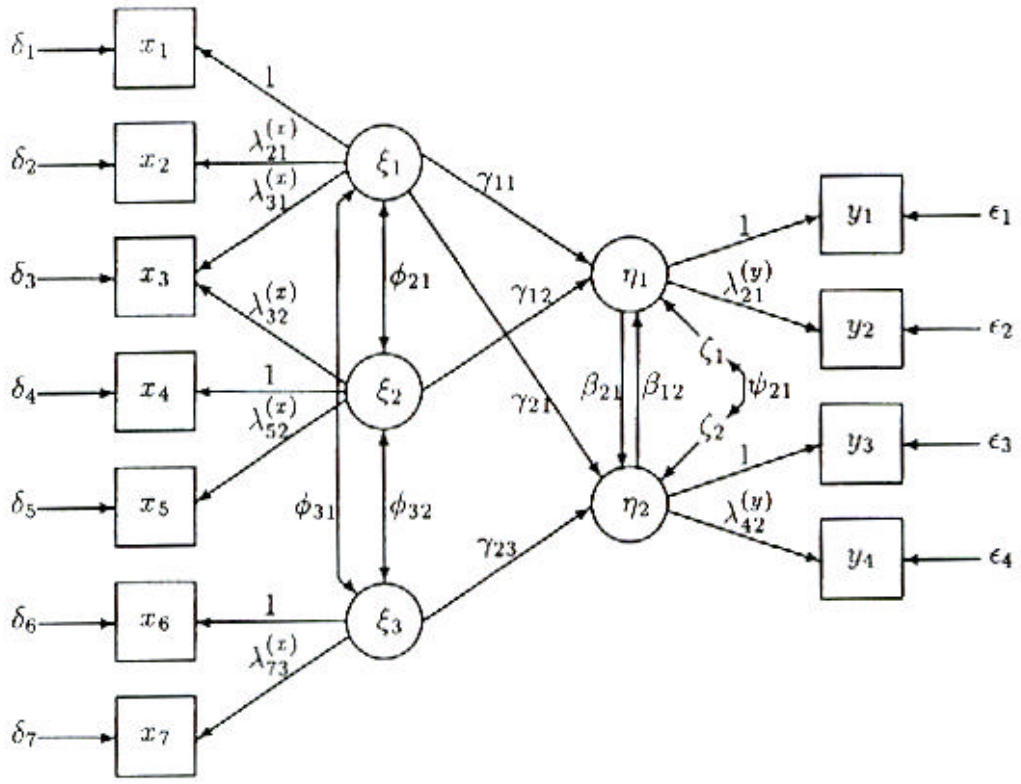


FIGURE 14 Causal modeling: path diagram in Greek notation. Source: Jöreskog and Sörbom 1993, 139.

According to Jöreskog and Sörbom (1993, 137-140) each one-way arrow in the diagram represents a parameter or coefficient, each with a different name corresponding to a Greek letter. This model presents the basic idea of causal modeling by studying the relationships between different variables. For more in-depth information about causal modeling, path analysis and structural equation modeling with LISREL, AMOS, EQS or similar programs see e.g. Bielby and Hauser (1977); Martin (1987); Kuusinen and Leskinen (1988); Klem (1995); Leskinen and Liukkonen (1999); Feldt et al. (2000).

Structural equation modeling in this particular study has been planned to use with the LISREL program. We attempt to develop a model revealing the relevant factors / variables that affect consumer attitudes toward electronic banking as well as the variables that underlie the formation of attitudes. Basis of the proposed process of attitude formation (see e.g. Fishbein and Ajzen 1975), a preliminary attitude path diagram is shown in figure 15:

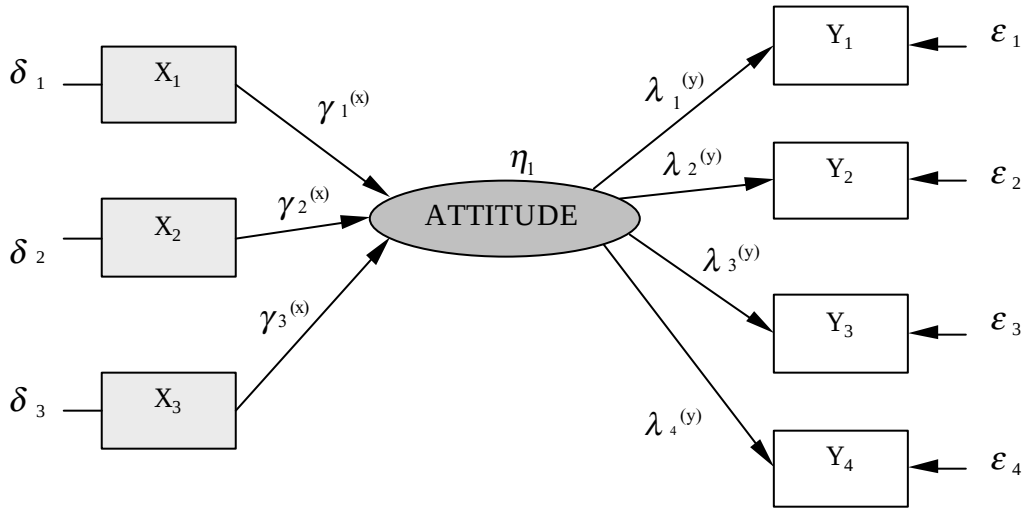


FIGURE 15 Attitude path diagram in Greek notation.

The variables in this model can be classified similarly to those of the previous model (see figure 14). The attitude factor is viewed here as a function of the Y-variables. Attitude is the dependent Eta (η)-variable. The observed Y-variables depend on Eta-variable and defined as a function of consumer beliefs about electronic banking and the implicit evaluative responses associated with those beliefs. Following Fishbein and Ajzen, we will use the Fishbein model in defining and constructing the concept of attitude. The observed X-variables are those which appear on the left-hand side in the diagram. In this model, these variables are actually factors that are the outcomes of a factor analysis comprising different single variables. Thus, the observed X-variables could also be named latent Ksi (ξ)-variables with minor restrictions. The paths from the attitude (Eta-variable) to the Y-variables are called LAMBDA-Y($\lambda^{(y)}$)-parameters, and the paths from the X-variables to attitude are called GAMMA-X($\gamma^{(x)}$)-parameters. Specifically, the LAMBDA-Y($\lambda^{(y)}$)-parameters are estimates of attitude and the GAMMA-X($\gamma^{(x)}$)-parameters regression estimates. In the empirical part of the study, we attempt to test and revise the model in order to develop a valid model of attitude formation.

4.3 Reliability and validity of the study

We have discussed in previous chapters how beliefs, attitudes, and intentions can be empirically distinguished, and that a reliable and valid technique for measuring these concepts is available. The concepts reliability (precision) and validity (accuracy), concern the degree to which the measuring instrument is free of measurement error. Reliability and validity are essential criteria for developing trustworthy information about consumers and their behavior. It has been argued that most marketers fail to ascertain either the reliability or the

validity of the measuring instruments they use. They assume that their findings are sufficiently reliable and valid for their purposes. Literature also suggest that the best resolution to the problem of reliability and validity is to verify research findings by quantitative methods whenever possible (Runyon and Stewart 1987, 44).

4.3.1 Reliability

Reliability is the *"accuracy or precision of a measuring instrument"* (Kerlinger 1980, 443). Reliability refers to the degree to which a measure is free of variable error. In other words, the less error the greater reliability. Reliability refers to the accuracy, consistency, stability over time, and reproducibility of a measurement instrument. According to Runyon and Stewart (1987, 475), situational factors influence consumers to behave in a way that is not predictable from attitudes. An example of factors influencing the research instrument is given by Fishbein and Ajzen (1975, 107). They state that

> "variable factor, such as the person's mood, the temperature or other weather factors, the testing situation, etc., may have different effects on responses on different occasions, thereby reducing the instrument's reliability."

Let us consider, for example, the situation that a preferred product is out of stock. This situation may lead a consumer to choose a less attractive alternative as a substitute. Because most attitude measurement techniques only measure attitudes toward an object, it has been recognized that it is also worth to studying the attitudes toward the purchasing situation. However, situational factors are hard to measure. There are two reasons for this. First, there is no wide agreement as to how situations should be defined. Second, there is no acceptable taxonomy of situations.

Previous research suggests that the seven-point bipolar scales used in the semantic differential have relatively high reliabilities. Thus, responses to probability scales of the semantic differential type, such as probable-improbable, likely-unlikely tend to yield highly reliable measures of the strength of beliefs or intentions. The question of reliability does not pose a major problem for the measurement of beliefs, attitudes, and intentions when appropriate research instruments are employed (Fishbein and Ajzen 1975, 108). In addition, it has been claimed that the reliability and validity of verbal instruments are largely dependent on the design and construction of the scales used (Thurstone 1928).

Reliability has been identified as a necessary but not a sufficient condition for validity (Cronbach 1975; Nunnally 1978; Glass and Hopkins 1984; Pedhazur and Schmelkin 1991). The question of the measurement of reliability becomes important. The most common type of reliability measurement evaluates the internal consistency of items in a scale. Two types of internal consistency can be measured: (1) average inter-item correlation, and (2) Cronbach's alpha, which measures the internal consistency of items in a scale (Garson 1982). Internal consistency is the degree of homogeneity among the items that constitute a measure, i.e. the degree to which the items are interrelated and measure a single

trait or entity (Brown 1970). Internal consistency is determined by statistical examination of the results obtained, typically equated with Cronbach's (1951) coefficient alpha. In this dissertation, Cronbach's alpha is used to determine the reliability of the scales and results. In its basic equation form, Cronbach's alpha can be expressed as follows:

$$\text{Cronbach's } \alpha = \frac{k}{k-1}\left(1 - \frac{\sum_{i-1}^{k} S_i^{\,2}}{S_p^{\,2}}\right)$$

k = number of items in scale
$S_i^{\,2}$ = variance of item i
$S_p^{\,2}$ = variance of total score

The formula clearly shows that Cronbach's alpha measures true variance over total variance. According to Nunnally (1978) the alpha of a scale should be greater than 0.70 for the items to be used together as a scale. The alpha for the total scale is also computed on the assumption that the item under examination is deleted. Nunnally (1978) gives a common guideline for the alpha standards of reliability: (a) early stage of research, alpha = 0.5-0.6, (b) basic research, alpha = 0.7-0.8, and (c) applied settings, alpha = 0.8-0.9.

While one objective of scientific work is to discover and determine the relations between variables, reliability becomes a necessary condition of the value of research results and interpretation. There are several strategies available to improve the reliability of the results. The primary principle underlying improvement in reliability is the *"maximization of the variance of the individual differences and minimization of the error variance"* Kerlinger (1980, 454). He proposes three general procedures for doing this: (1) measuring instruments should be written unambiguously, (2) adding more items of equal kind and quality, usually decreases the change error while more items increase the probability of accurate measurement, and (3) providing clear and standard instructions for questions. Ambiguous instructions are said to increase the error variance. These standards were taken into account in planning the questionnaire.

4.3.2 Validity

Validity refers to the extent to which an instrument measures what it purports to or is intended to measure, i.e. the true score it was designed to measure. Validity cannot be proven on the basis of a single piece of evidence. Two types of validity are distinguished in the literature: internal validity, which refers to the extent whether there are factors other than the independent variables that could cause an observed change in the dependent variable, and external validity, which concerns with the generalizability and applicability of the results to the general population. (e.g. Campbell and Stanley 1966; Carmines

and Zeller 1979; Lukka and Kasanen 1993). In other words, external validity refers to the extent to which the research results can be generalized to other settings, occasions, and populations. The external validity of this study can be considered relatively high on account of the large size of the survey sample, which in turn can be considered representative of the whole Finnish adult population (see e.g. Aleamoni 1973).

However, the internal and external validity definitions are not in themselves detailed definitions of validity. The most common classification of types of validity discerns three types of validity: content, criterion-related, and construct (American Psychological Association 1966). The last of these is considered the most important from the consumer research point of view (Kerlinger 1980, 457).

Content validity refers to the degree to which a specific set of items are a representative and appropriate sample of the content (subject matter) contained in the instructional objectives the attainment of which the test is intended to measure. The theory of content validity suggests that a measurement (scale) has a content validity when its items are a randomly chosen subset of the universe of appropriate items. (see e.g. Cronbach and Meehl 1955). In the present study, content validity was increased by planning the questions accurately. For instance, negative questions were avoided, questions were kept relatively short and clear, each question or item was planned to represent an aspect of the variable being measured, and biased questions, including derogatory statements, slang terms, and prejudicial or leading questions, were avoided.

Criterion-related validity refers to the extent to which scores on a test correspond to a certain criterion. Criterion validity is studied by comparing scores with one or more external variables, or criteria, known or believed to measure the attribute in the study. Criterion-related validity used to be called predictive validity or empirical validity, because validity is primarily evaluated statistically. For example, if the measurement scale can predict some future event, then predictive validity is established. (see e.g. Kerlinger 1980; Ghiselli et al. 1981)

Construct validity, as stated, is the most important form of validity. Construct validity refers to the degree to which a test measures the target construct, or psychological concept or variable, inferred from all of the logical arguments and empirical evidence available. Construct validity is thus directly concerned with the relationship of a variable to other variables. (see e.g. Cronbach and Meehl 1955; Gage 1991). One significant contribution to testing construct validity is Campell and Fiske's (1959) procedure, called the multitrait-multimethod matrix, that uses ideas of convergence and discriminability and correlation matrixes to bring evidence to bear on validity. In a multitrait-multimethod analysis, more than one construct and more than one method is used in the validation process thereby obtaining a method-by-measure matrix. Another method of construct validation is factor analysis, which is a method for reducing a large number of measures to a smaller number called factors by discovering which measures measure the same thing (Kerlinger 1980, 468). However, using factor analysis as a method of measuring construct validation is very complicated (see e.g. Cronbach 1971).

4.3.3 Reliability and validity measures in the present study

In this dissertation, two models are developed and two types of reliability and validity measures are used. The first model, depicting the overall causal relationships between different factors, attitude, and actual behavior is presented in chapter 7. In the relevant papers, the reliability was measured with alphas presented along with the research results. The factors in the first model representing the overall Internet banking phenomenon had alphas ranging from 0.61 to 0.88. However, two alphas were little below the level of the acceptability of 0.70. Thus, the model is not 100% reliable. The second model we developed was constructed using structural equation modeling with LISREL-program. This model of attitude showed high reliability and validity. These were measured with goodness-of-fit statistics that confirmed that the model fit was extremely good. In addition, the LISREL results displayed various reliability and validity indicators that were all acceptable. To borrowing some ideas from Yli-Renko (1999, 123-124), the goodness-of-fit of a structural equation model is more a subjective task specific to each research setting than a purely objective one. It has been argued that it is better to use several measures of the statistics than a single one alone. The goodness-of-fit statistics are discussed in more detail in chapter 7. To summarize, the reliability and validity criteria used in this study are shown in table 6:

TABLE 6 Goodness-of-fit criteria. Source: Yli-Renko 1999.

Criterion	Description	Interpretation
Chi-Square	Calculation of difference between observed and estimated covariance matrices: not adjusted for degrees of freedom	p>.05 for model to be acceptable; sensitively to sample size, tendency to indicate significant probability levels with samples larger than 200.
Goodness-of-fit index GFI	Compares predicted squared residuals with obtained residuals; not adjusted for degrees of freedom	Ranges from 0 (no fit) to 1.0 (perfect fit); recommendation above 0.90
Adjusted goodness-of-fit index AGFI	Modification of GFI, adjusted for degrees of freedom	Ranges from 0 (no fit) to 1.0 (perfect fit); recommendation above 0.90
Normed fit index NFI	Compares proposed model against a null model, not adjusted for degrees of freedom	Ranges from 0 (no fit) to 1.0 (perfect fit); recommendation above 0.80
Normed Chi-square	Chi-square for degrees of freedom	Recommendation between 1.0-2.0

According to Uusitalo (1997), each study attempting to contribute to the theoretical development of a particular field of academic research must demonstrate sufficient reliability, validity, and generalizability. Although they have been discussed in this section, they will be further examined later in the study. To summarize, this study has relatively high external validity as the sample represents the whole Finnish adult population.

4.4 Empirical measures and analysis strategy

The social scientific nature of survey research is revealed by the nature of its variables. Variables can be classified into two types: (1) sociological facts, and (2) opinions and attitudes (Kerlinger 1980, 411). The former refers to attributes of individuals that reflect their social status or their membership of social groups (e.g. sex, income, education, age). The latter type of variable is psychological and includes opinions and attitudes, and their relation to consumer behavior.

Sociological facts were measured with nominal and ordinal scales. The former is defined as the lowest level of measurement as the numbers assigned to objects are numerical without having a hierarchical meaning; i.e. they cannot be ordered. The latter assign numerals to subjects or objects, which are rank ordered with respect to some characteristic. Statistical analyses with nominal and ordinal variables are quite limited. For instance, in this dissertation we determined the relationship between demographic variables and attitudinal variables by using non-parametric tests, such as Spearman rank order correlation. (see e.g. Kerlinger 1980). Of the total 40 questions, ten were related to demographic characteristics, and the remaining thirty addressed the various constructs of the study. Demographic questions inquired about respondents' (1) sex, (2) age, (3) marital status, (4) household size, (5) education level, (6) household income, (7) profession, and (8) line of business. These demographic variables are recognized as important in Internet research (see e.g. Hoffman & Novak 1996; Cyperatlas 2001; eMarketer 2001; GVU 2001; Iconocast 2001).

The study constructs (i.e. beliefs, opinions, attitudes, intentions and behavior) were measured on five- to seven-point ordinal and interval scales. Ordinal measures indicate, as we stated, rank order and nothing more, because they are not interval scales and have no absolute zero points. Interval scales yield more information than nominal or ordinal scales, because the equal intervals between the numbers on the scale reflect equal differences in magnitude. Most of the behavioral research scales developed to measure beliefs and attitudes are basically ordinal; however, as Kerlinger (1980, 440) put it, *"we can with considerable assurance often assume equality of interval scale."* (see e.g. Anderson 1961; Ghiselli et al. 1981).

The scales used to measure each of the beliefs were developed on the basis of the literature and existing scales (see Järvenpää and Todd 1997; Crisp et al. 1997). Measures of beliefs and attitudes were based on the suggestions of Fishbein and Ajzen (1975), introduced in the review of the literature. In measuring opinions, beliefs, and attitudes two types of scales were used: (1) the Likert scale (agree-disagree, approve-disapprove, true-false, or the like) (Likert 1932), and (2) the semantic differential scale (favorable-unfavorable, satisfied-dissatisfied, pleased-unpleased, or the like) (Osgood, Suci & Tannenbaum 1957). Comparative scales (e.g. good-bad) were little used, on account of the unclear reference point of the scale, i.e. different respondents may use different reference points as standards (Aaker et al. 1995, 260). The questionnaire was developed so that each question was focused directly or indirectly on a specific

issue. Multiple choice questions were used in order to diminish instrumentation bias.

Respondents were asked to complete the five-point or seven-point scale on each question or proposition, thereby indicating its importance in defining their beliefs, attitudes, and intentions toward electronic banking. However, some of the seven-point scales were reduced to five-point scales in the statistical analyses in order to yield greater insights into how different variables are related together.

As already stated, three types of questionnaires were prepared and sent. Although most of the questions addressed were the same, they varied somewhat in content, such as personal experience of using banking services, expectations about service, and other related issues. All three questionnaires contained questions about consumers' demographics, environmental questions about their banking in general (e.g. the distance from home to bank branch), bill payment questions, and bill payment mode (mobile phone, PC, ATM) etc. Respondents were also asked detailed questions about the use of the Internet in banking, the factors affecting their choice of the banking delivery channel, and their attitudes toward technology, the Internet, and Internet banking. Each question on the questionnaire focused directly or indirectly on a specific issue and the questions were made as brief and as clear as possible. Below, we briefly describe the questionnaire.

The two first pages of each questionnaire together with the demographic section were the same. The first page had twelve questions asking about the name of the respondents' bank, mode of paying bills, distance to nearest branch, use of mobile phone in banking, and computer access. The second page of the questionnaire consisted of questions 13 to 17. Questions 13 and 14 were about Internet access and the place of access. Question 14 asked about Internet usage. A five-item scale was used. The next question concerned e-commerce. Question 16 aimed to determining the characteristics, according to the respondents, of a good mode of bill payment. Respondents could choose as many adjectives as they wanted. Question 17 used a seven-point scale to find out the importance of each factor affecting the choice of a given payment mode. The questionnaires differed from each other concerning pages three, four and five. These pages were all concerned with consumer beliefs and attitudes toward computers, technology, and electronic banking. Subjective norms were measured by three questions inquiring about the reference group influence on banking: (1) The example of others is important to me in the choice of a mode of payment", (2) "It is important to me to see other people at a branch", (3) "Relatives or friends suggestions concerning Internet banking are important to me". The subjective norm was rated on a seven-point scale ranging from not at all important to extremely important.

Beliefs were measured by several questions about the attributes of Internet banking rated on a seven-point scale ranging from strongly disagree to strongly agree. Examples of the attributes associated with Internet banking were fast, cheap, standard level of service, and ease of use.

Attitude was then measured according to the salient beliefs consumers hold about Internet banking and the implicit evaluative responses associated

with those beliefs, as suggested in the literature (Fishbein and Ajzen 1975). The attitude measurement is presented in chapter 8 (see Karjaluoto 2001).

Nonusers' and new users' intentions to use Internet banking were measured on several seven-point questions inquiring about desired Internet banking attributes. For instance: "I would use Internet banking if Internet banking (a) was faster than traditional banking, (b) was cheaper than traditional banking, (c) provided full loan services, (d) provided clear instructions. The scales for these questions ranged from extremely probable to extremely improbable.

Respondents answered questions concerning prior usage of technology and perceptions of the different technologies available on seven-point scales ranging from strongly dislike to strongly like. Questions inquired about respondents' liking / disliking of (a) mobile phone, (b) computer, (c) payment cards, (d) automates, (e) e-mail, (f) Internet, (g) personal service, (h) teletext, and (i) electronic ID.

Respondents were asked about their Internet banking behavior on a five-point scale ranging from never to always by one simple question: "How often you use the Internet for banking?"

The quantitative data was analyzed and the results incorporated into tables and figures. Results are presented in simple terms that focus on the effects of individual differences in beliefs and attitudes toward electronic banking. Furthermore, the three sample groups are then compared in terms of demographics, beliefs, and attitudes. The statistical methods used in this dissertation are many. For instance, we conducted factor analyses, chi-square, ANOVA and t-tests, and correlation as well as regression analyses, as suggested in the literature (see e.g. Singer 1978; Swan et al. 1984; Pahkinen and Lehtonen 1989; Brennan 1992; Nummenmaa et al. 1997). In addition, chapter seven presents a structural equation model of the factors underlying attitude formation. The next chapter of the present study discusses the results of the mail survey.

5 OVERVIEW OF THE RESULTS

This chapter describes the demographic profile of the survey respondents, which is also highlighted separately in each research paper. First, we show the distribution of age and sex. Second, marital status and education are presented. Third, household income, profession, and field of employment are shown. We have used tables and some figures to illustrate the differences we found between the three target groups. This chapter concludes by summing up the demographic factors affecting the use and adoption of Internet banking. While this chapter focuses in particular on the describing the survey participants, it also traces differences in electronic banking, especially Internet banking, between nonusers, new users, and old users. Hence, the central aim of this chapter is to identify the demographic factors that have an effect on beliefs, attitudes, intentions, and behavior toward electronic banking.

5.1 Demographic profile of the study participants

As already stated, questionnaires were sent to three different target groups that differ in terms of Internet banking knowledge and usage. The first group was labeled nonusers; this group did not use electronic banking services. We received 349 answers, which gives us a response rate of 34.9 percent of the original sample of the nonusers. The second target group consisted of new Solo-users: these individuals had had the Solo user ID and password for less than three years. However, most of the respondents in this group were still not using the Internet or phone services for banking (July 2000). Responses were received from 344 members of this group, yielding a response rate of 34.4 percent. The third group consisted of long standing Solo-users and, as we expected, this group showed the most eagerness in answering the questionnaire. Responses were received from 474 participants (response rate 47.4%). This chapter introduces the demographic profile of the participants. First, the three groups

are introduced together in terms of their demographics. Second, we introduce some important demographic findings in the different target groups separately.

TABLE 7 Sex and age distribution (n=1167)

Sex (s.d.0.50)	566 female (48.5%); 601 male (51.5%); s.d. 0,4998		
Age (s.d. 0.93)	Under 18	1	0.09 %
	Between 18-24	9	0.7 %
	Between 25-34	118	10.1 %
	Between 35-49	459	39.3 %
	Between 50-64	369	31.6 %
	Over 65-	211	18.1 %

Table 7 shows that 48.5 percent of the study participants were female and 51.5 percent male. The largest age group consisted of those aged 35-49 (39.3%). A total of 31.6 percent of the respondents were aged between 50-64, and 18.1 percent were over 65. Approximately 11 percent were 34 or younger. Thus, the demographic age profile of the study participants shows the middle-aged to be the dominant group.

Figure 16 depicts the age distribution between the three different groups. As can be seen, nonusers were relatively old, (77% aged fifty or more). New users were a little bit younger: near by 40 percent of the respondents was aged 35-49. Old Internet banking users were relatively young, as has been suggested in Internet research (e.g. Jayawardhena and Foley 2000; Mattila 2001). However, we would argue that a typical Internet banking user is not as young as the literature suggests. The age group 50-64 accounted for 24 % of the old users, which is relatively high proportion. To sum up, the present data analysis suggests that age has an impact on the use of Internet banking. Additionally, the results imply that the typical Internet banking user is middle-aged.

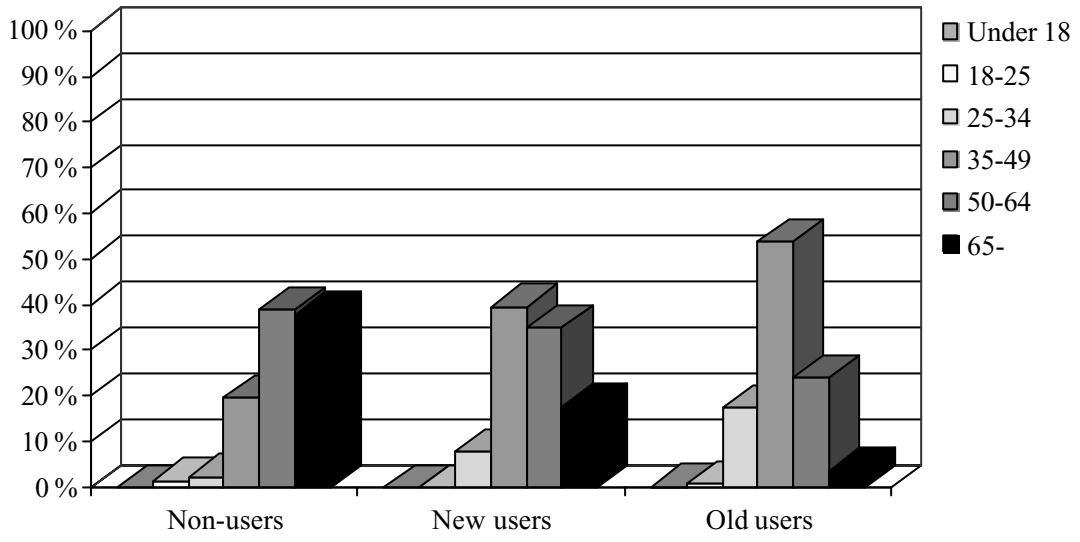


FIGURE 16 Age distribution between target groups

Furthermore, with regard to the sex of the respondents, we made also some interesting findings. Research in the area of electronic banking has found that typical users are male (e.g. Jayawardhena and Foley 2000). The sex distribution in our target groups, however, was not exactly in line with this. The findings of this study indicate women as well as are using Internet banking. This result can partly be explained in geographical terms: the study was conducted in Finland, a country where women are also highly educated and have professional occupations. Previous studies have mainly been conducted in southern Europe, Australia, and the US, where the position of women differs from that in Scandinavia. The sex distribution is shown in figure 17.

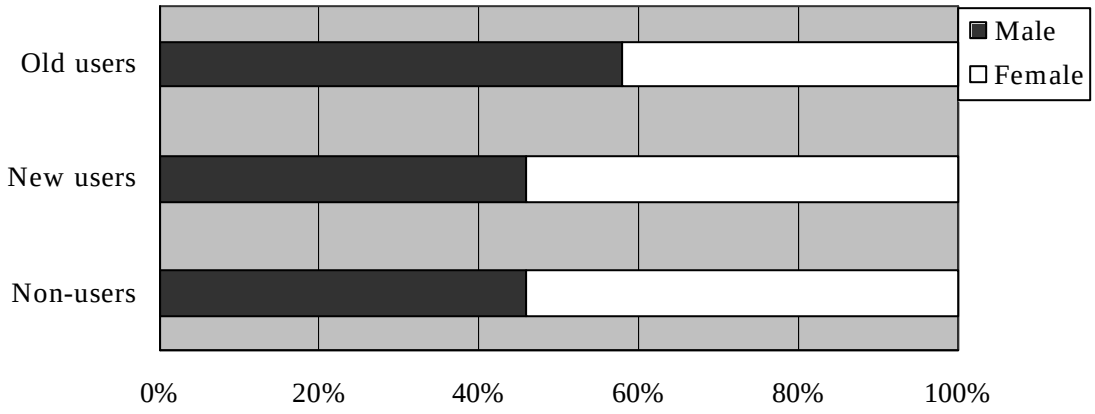


FIGURE 17 Sex distribution between groups

Other central issues in tracing the demographic characteristics of nonusers and current users are marital status and educational level. Table 8 shows that both marital status and education level varied between the groups. In total, most of the respondents (58.3%) were married. A total of 11.9 percent lived in cohabitation, and 11.7 percent were single. More specifically, a total of 49.4 percent of the nonusers were married, whereas 55.2 percent of the new users and 67.7 percent of the old users were married. The proportion of divorced and widowed persons was the highest among nonusers (29.1%), while of the old users only 1.3 percent were widows and 8.5 percent were divorced. This is partly explained by the age factor: nonusers were older than users. The frequency results given in table 8 suggest that marital status and education influence the use of Internet banking.

The education level of the participants varied heavily. A total of 23.6 percent had secondary education, 9.3 percent had technical education, 15.3 percent had business school education, 14.6 percent had vocational school education, 6.5 percent of the respondents were students, 24.3 percent had a university degree, and 6.4 percent had other education. Education seems to impinge on Internet banking usage; 40.7 percent of the old users had university degree while only 8.4 percent of the nonusers had it. Moreover, close to 50 percent of the nonusers had only basic secondary education, which is compulsory in Finland. New users were also higher educated than nonusers;

18.3 percent had a university degree. Standard deviation for education was relatively high in all three groups.

TABLE 8 Marital status and education

	Nonusers		*New users*		*Old users*		*Total*	
Marital Status	*No*	*%*	*No*	*%*	*No*	*%*	*No*	*%*
Married	170	49.4	190	55.2	320	67.7	680	58.3
Cohabitation	23	7.0	52	15.4	63	13.3	139	11.9
Single	52	15.1	40	11.6	44	9.3	136	11.7
Widow	42	12.2	22	6.4	6	1.3	70	6.0
Divorced	57	16.6	40	11.6	40	8.5	137	11.7
No answer	3	0.9	0	0	2	0.4	5	0.4
s.d.	1.48		1.40		1.22		1.42	
Education								
Secondary	163	47.4	82	23.8	30	6.4	275	23.6
Technical	17	4.9	27	7.8	65	13.8	109	9.3
Business school	35	10.2	56	16.3	87	18.4	178	15.3
Vocational	61	17.7	71	20.6	38	8.1	170	14.6
Student	15	4.4	26	7.6	35	7.4	76	6.5
University degree	29	8.4	63	18.3	192	40.7	284	24.3
Other	24	7.0	19	5.5	25	5.3	75	6.4
No answer	3	0.9	0	0	2	0.4	5	0.4
s.d.	2.14		2.00		1.68		2.09	

Table 9 displays the household income, profession, and field of employment of the respondents. Household income per year was asked in Finnish marks (FIM 1 = ~ 5.9e).

TABLE 9 Household income, profession and field of employment

Household Income per year	*Nonusers*		*New users*		*Old users*		*Total*	
	No	%	No	%	No	%	No	%
Less than FIM50,000	54	15.5	26	7.6	2	0.4	82	7.0
50,001 – 75,000	54	15.5	20	5.8	4	0.8	79	6.8
75,001 – 100,000	29	8.3	14	4.1	3	0.6	46	3.9
100,001 – 125,000	52	14.9	46	13.3	12	2.5	110	9.4
125,001-150,000	31	8.9	36	10.5	24	5.1	91	7.8
150,001 – 175,000	20	5.7	13	3.8	19	4.0	52	4.5
175,001 – 225,000	45	12.9	65	18.9	69	14.6	179	15.3
225,001 – 275,000	21	6.0	40	11.6	92	19.4	153	13.1
More than 275,001	22	6.3	71	20.6	245	51.7	338	30.0
No answer	21	6.0	13	3.8	4	0.8	37	3.2
s.d.	2.59		2.61		2.28		2.81	
Profession								
Executive	8	2.3	20	5.8	98	20.7	126	10.8
Entrepreneur	15	4.3	41	11.9	48	10.1	104	8.9
Pensioner	182	52.1	74	21.5	29	6.1	285	24.4
Official	29	8.3	57	16.6	198	41.8	284	24.3
Worker	58	16.6	97	28.2	38	8.0	193	16.5

(continues)

TABLE 9 (continues)

Not in work	35	10.0	28	8.1	13	2.7	76	6.5
Farmer	3	0.9	2	0.6	0	0	3	
Undergraduate	3	0.9	4	1.2	12	2.5	18	1.5
Public servant	10	2.9	15	4.4	26	5.5	51	4.3
Other	4	1.1	5	1.5	11	2.3	24	1.7
No answer	2	0.6	1	0.3	1	0.2	4	0.3
s.d.	1.55		1.49		2.26		2.01	
Field of employment								
Industry	31	8.9	52	15.1	85	17.9	168	14.4
Trade	10	2.9	29	8.4	38	8.0	77	6.6
Information technology	2	0.6	9	2.6	78	16.5	89	7.6
Logistics	10	2.9	13	3.8	16	3.4	39	3.3
Administration	17	4.9	34	9.9	70	14.8	121	10.4
Primary production	8	2.3	3	0.9	2	0.4	13	1.1
Banking / Assurance	1	0.3	2	0.6	13	2.7	16	1.4
Services	27	7.7	53	15.4	67	14.1	147	12.6
Other	31	8.9	45	13.1	56	11.8	132	11.3
No answer	212	60.8	104	30.2	49	10.3	365	31.2
s.d.	3.42		3.15		2.97		3.01	

Table 9 shows that household income seems to be a major factor affecting the use of Internet banking. Most of the respondents were quite wealthy, 30.0 percent of the respondents earned more than FIM275,001 per year, and 13.1 percent earned FIM225,001 – 275,000. The income categories below FIM175,000 accounted for 31.6 percent of the total respondents. It is also worth noting that the household size affects overall household income per year. As can be seen, a total of 51.7 percent of the old users had a household income of more than FIM275,000 per year. Another interesting implication of the table is that over 40 percent of the nonusers had a household income of less than FIM100,000. Figure 18 clarifies the distribution of household income between the groups.

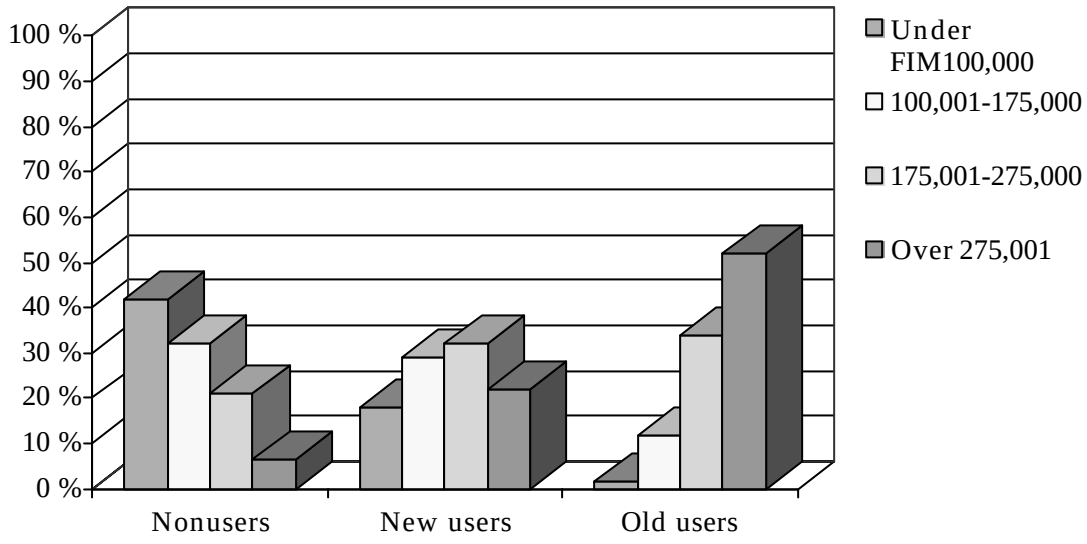


FIGURE 18 Household income per year

The occupational distribution of the respondents varied widely. The largest proportion of the respondents was pensioners (24.4%). The second largest group was the official employees (24.3%) followed by blue-collar workers (16.5%) and managers (10.8%). It is worth noting that only 1.5 percent were undergraduates. This is in line with the age of the respondents, as the total sample consisted mainly of older people. As we have discussed earlier, nonusers were the oldest group, and contained 52.1 percent pensioners. Blue-collar workers formed the second largest occupational group (16.6 %), followed by the unemployed (10.0 %). Only 2.3 percent of the nonusers were in leading position. As can be seen, 28.2 percent of the new users were blue-collar workers, 21.5 percent pensioners, and 16.6 percent officials. Executives accounted for 5.8 percent. Table 9 also illustrates that the most common occupation for old users was that of officials (41.8 %), followed by executives (20.7%), and entrepreneurs (10.1%). To sum up, occupation seems to have an impact on Internet banking. Current users are more educated and have higher occupations than nonusers. This finding is in line with the past literature (see e.g. Jayawardhena and Foley 2000).

Most of the respondents worked in industry (14.4%) followed by services (12.6%) and administration (10.4%). The largest proportion of nonusers worked in manufacturing industry (8.9%), whereas the most common category for new users was services (15.4%) and for old users industry (17.9%), followed by information technology (16.5%). In total, respondents appeared reluctant to answer this question concerning their economic sector they worked in (no answer 31.2%). Individual differences between each group concerning these demographic variables are discussed later in more detail.

5.1.1 Summary of the demographic factors affecting the adoption of Internet banking

We have now described the demographics of the survey participants, which showed that demographics have an impact on the use of Internet banking. First, we saw that a typical Internet banking user is aged 35-49, which is relatively high compared to previous studies. We also found that marital status seems to have an impact on the use of Internet banking. Our results imply that a large proportion of Internet banking users was married. Further, we saw that education is one of the key driving force toward the adoption of Internet banking: 40.7 percent of the old users had university degree against only 8.4 percent of nonusers. Next we discussed respondents' household income, profession, and field of employment. We saw that household income has a major effect in the adoption of Internet banking. Old users had much higher household income per year than nonusers did. This partly explains the fact that profession had a great impact. We saw that nonusers were mainly blue-collar workers or pensioners while users worked mostly as executives, officials, or entrepreneurs. Finally, we saw that the field of employment also had an impact. To sum up, demographic factors seem to have relatively high impact on the use of Internet banking.

5.2 Individual differences in electronic banking

This chapter outlines other findings from the survey. First, we discuss the distribution of the respondents' personal banks and their mode of payment. Second, we show computer and Internet access among the respondents. We will also discuss how these influence the use of Internet banking. We also discuss mobile phone banking. Further, an analysis of Internet usage is presented followed by a summary of the findings.

5.2.1 Personal disparities in banking habits

As the survey sample was chosen from MeritaNordbanken's customer database, most of the respondents were customers of MeritaNordbanken. Our sample also consisted of customers of other Finnish bank groups. However, their overall proportion was slight (in total 4.6%). Table 10 shows that 95.4 percent of the respondents were customers of MeritaNordbanken, followed by Osuuspankki (1.3%), Säästöpankki (1.0%), Leonia (0.9%), Paikallisosuuspankki (0.3%), and other banks (1.1%). The standard deviation for this particular question was very low as expected (0.67).

TABLE 10 Respondents' personal bank

Bank's name	*No*	*%*
MeritaNordbanken	1113	95.4
Osuuspankki	15	1.3
Leonia	11	0.9
Säästöpankki	12	1.0
Paikallisosuuspankki	3	0.3
Other	13	1.1

Respondents were asked about their bill payment frequency in question 8. The results are shown in figure 19. As can be seen, nonusers paid on average 2.2 times bills per month, whereas new users paid on average 2.4 times bills and old users paid on average 2.6 times per month.

More specifically, a total of 11.1 percent of nonusers paid bills four or more times per month. Of the new users, 12.1 percent paid bills four times or more per month. Standard deviation for new users was 1.45. Old users seemed to be most active in bill payments. A total of 13.3 percent of old users paid bills four times or more per month, which was the highest percentage of the groups. From our perspective, this particular question tends to highlight individual differences in banking. While new users and old users are more active in bill payment frequency, nonusers can be considered, not passive, but less active. As we already stated in the discussion on the demographics, users are wealthier than nonusers, and hence, are expected to spend more money. Figures 19a, 19b, and 19c are histograms with normal curve displaying the bill payment frequency (y-axis) and the number of bill payment operations per month (x-axis).

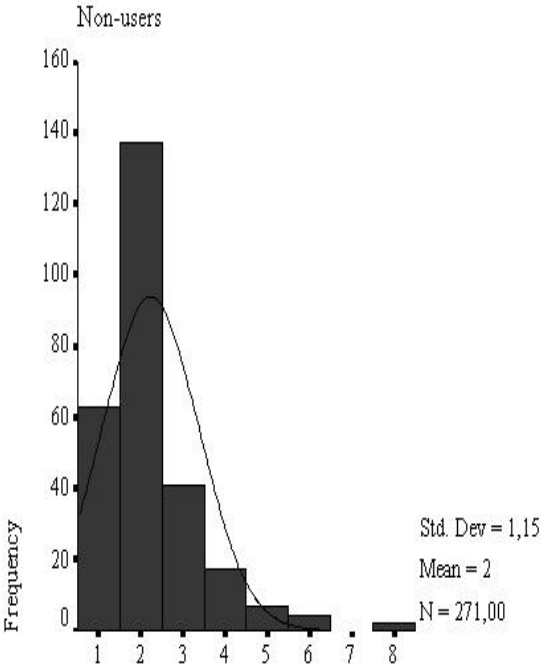


FIGURE 19a Nonusers' bill payment frequency

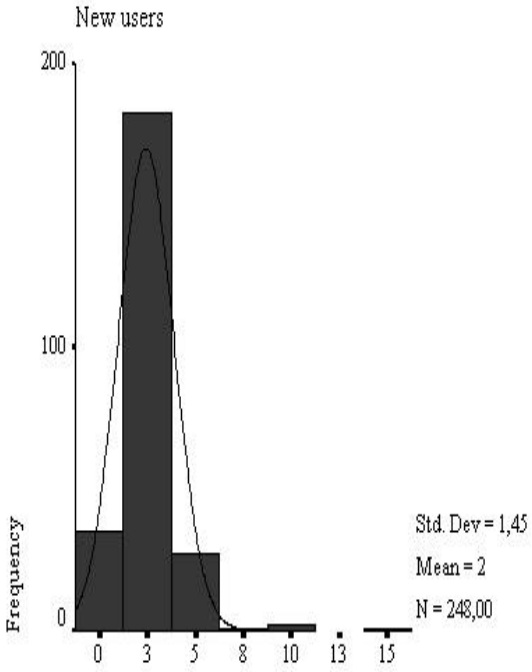
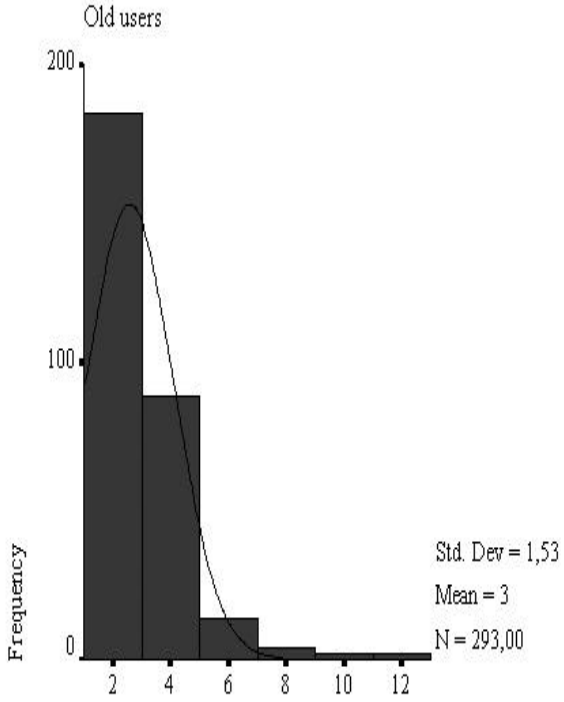


FIGURE 19b New users' bill payment frequency



Notes: Histogram with normal curve. Y-axis displays frequency, X-axis number of bill payment operations

FIGURE 19c Old users' bill payment frequency

Furthermore, the number of bill payments per month does not tell the whole truth about personal banking habits. To develop more insights into personal banking habits, we analyzed the number of bills paid at one time. By analyzing the number of bills paid at one time additional information can be observed,

and hence, more information about individual differences can be obtained. The results of the analysis are displayed in figure 20. As can be seen, old users paid more bills at one time than the two other groups. A total of 54.6 percent of old users paid three to five bills at once, whereas 50.9 percent of new users and 38.8 percent of nonusers paid three to five bills at once. In addition, 18.1 percent of the old users paid more than five bills at one time while only 6.4 percent of the nonusers paid more than five bills at one time. It seems obvious that current users of electronic banking services are more active in bill payments than nonusers. Therefore, it could be argued that current users are also more valuable to financial institutions due to the fact that they handle more transactions.

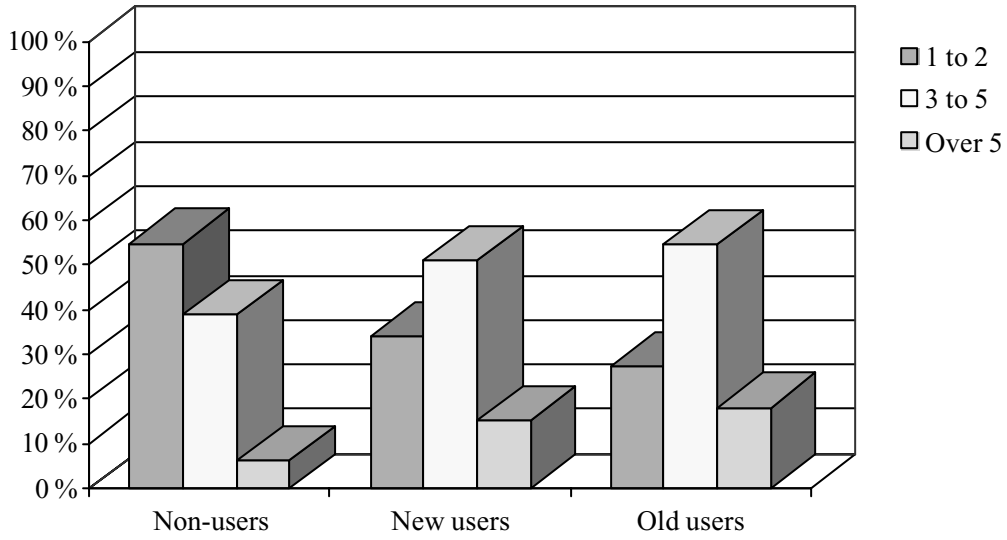


FIGURE 20 Number of bills paid at once

Respondents were also asked their primary mode of bill payment in the next question. This question is also highlighted in one of the research papers; hence, we will only briefly present the results here. As can be seen in figure 21, most of the respondents (39.8%) used the Internet for bill payments. Interestingly, only 3.1 percent used telephone-banking services such as a call-center, WAP or SMS.

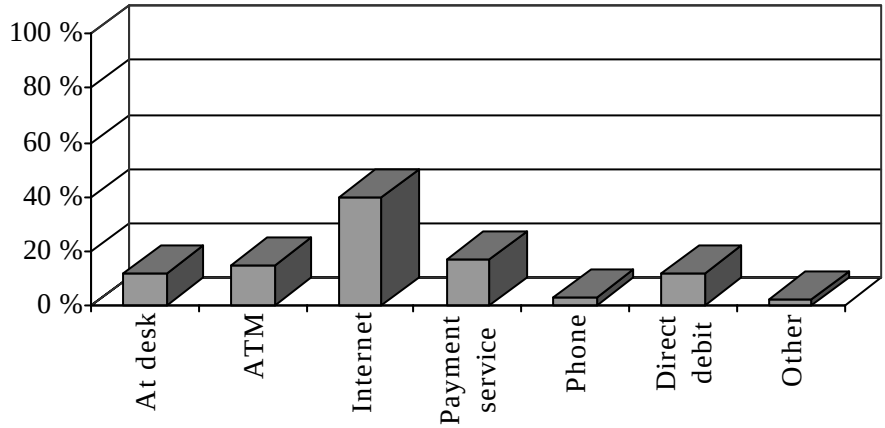


FIGURE 21 Bill payment mode

5.2.2 Computer and Internet access among study participants

A total of 63.5 percent of the respondents had a computer: 83 percent at home and 41 percent at the workplace. The proportion with Internet access was 57.8 percent. Respondents' computer and Internet access are discussed in chapter 7 in more detail. Thus, here we focus on the Internet usage of the survey participants. The Internet was used greatly for banking. As can be seen from figure 22, over 80 percent of the Internet users used online banking services often or always. Only ten percent of those with Internet access used it for banking rarely or never and seven percent with Internet access had never tried Internet banking.

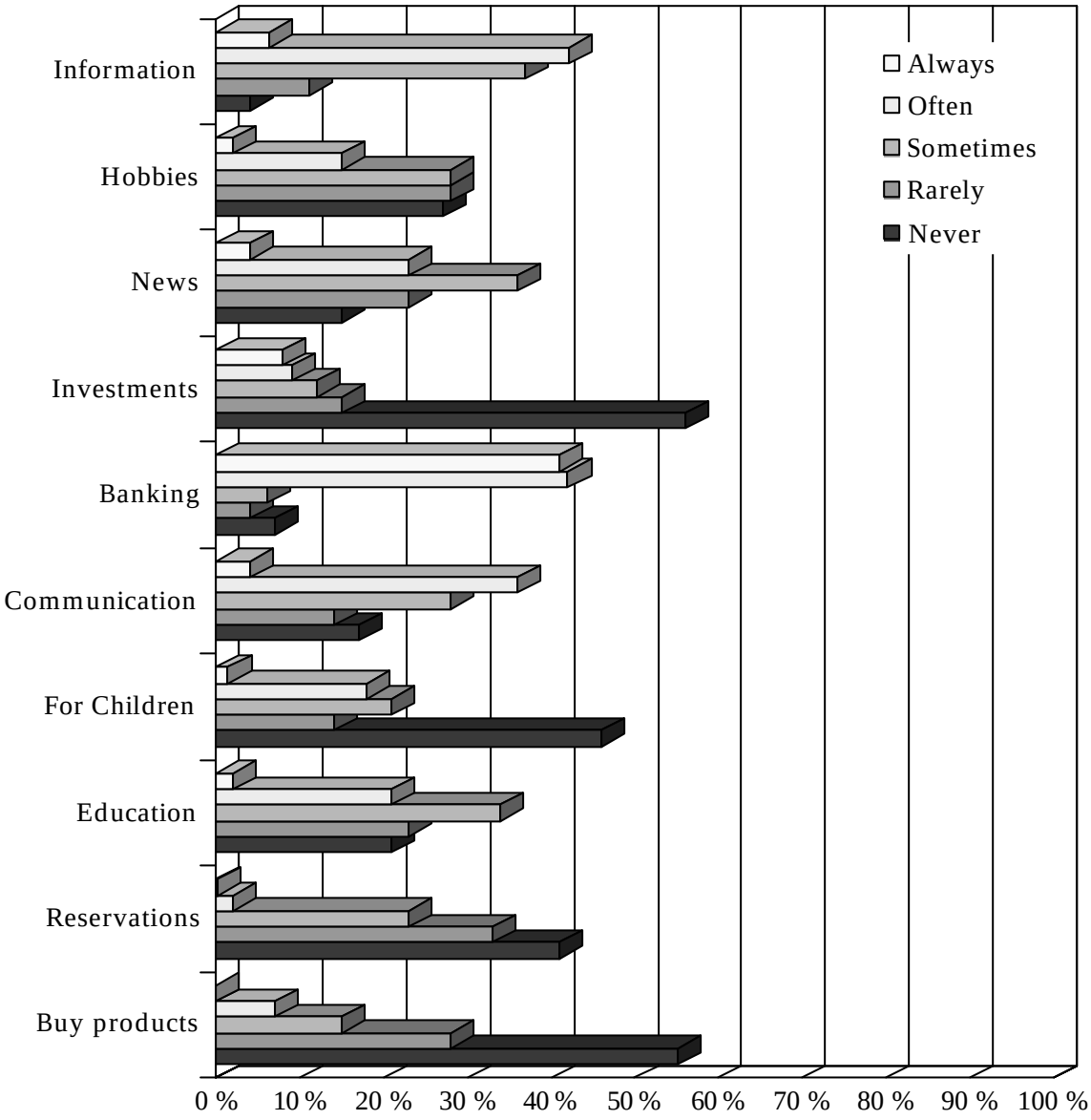


FIGURE 22 Internet utilization among study participants

The Internet is to date not greatly used for investment transactions: 56 percent had never used investment services via the Internet. However, 17 percent used investment services often or always. These results suggest that there is a real need for Internet-based financial service delivery.

Electronic commerce at present was used very slightly. Approximately 55 percent of the respondents with Internet access had never bought products or services via the Internet, 28 percent had done so once or twice, and 15 percent sometimes. According to the responses, the products most commonly bought via the Web were CD's, books, clothes, food, and electronics. Only one percent used the Internet often for purchasing. The Internet was neither used much for booking of flights, hotels, or tickets. A total of 74 percent used it rarely or never for these purposes. The Internet was used more frequently for information seeking and for personal education: 80 percent used the Internet for information seeking, and 57 percent for education. E-mail was also used considerably; close to 30 percent used the Internet sometimes for communication, 36 percent often, and four percent always. In summary, the Internet is mainly used for banking, information seeking and for communication with other people.

5.2.2.1 ANOVA results on Internet usage

To develop more insights on Internet usage, ANOVA by age was conducted. The results yielded some statistically significant differences in means between the age groups. In total, the younger consumer groups seem to use Internet services more than the elderly group. However, for banking $F(3,627)=0.404$, $p=.750$, and investments $F(3,573)=2.114$, $p=.097$, the results were not statistically significant. That is, age seems to have no impact on Internet banking and investments among current Internet users.

TABLE 11 ANOVA by age

Purpose of use	*N*	*Means*	*Mean square between groups*	*F value*	*Sig.*
Information seeking			9.765	12.943	.000
34 years and under	104	2.81			
35-49 years	326	2.33			
50-64 years	151	2.19			
65 years and above	32	2.03			
Investments			3.635	2.114	.097
34 years and under	101	1.24			
35-49 years	311	0.87			
50-64 years	138	1.01			
65 years and above	27	0.93			
Banking			.524	.404	.750
34 years and under	104	3.10			
35-49 years	336	3.05			
50-64 years	157	3.06			
65 years and above	34	2.85			

(continues)

TABLE 11 (continues)

Communication			18.237	14.211	.000
34 years and under	102	2.61			
35-49 years	317	1.87			
50-64 years	137	1.71			
65 years and above	28	1.79			
E-commerce			5.400	8.791	.000
34 years and under	101	0.95			
35-49 years	311	0.63			
50-64 years	133	0.43			
65 years and above	26	0.50			
Reservations			1.920	2.620	.050
34 years and under	101	1.06			
35-49 years	311	0.84			
50-64 years	134	0.84			
65 years and above	26	0.62			

Notes: Scale ranging from 0 never to 4 always

While the F test does not reveal where in the age groups the differences appear, we conducted an LSD test to examine differences between the age groups. The results of the LSD test indicate that in most cases, the differences between the age groups are statistically significant at the 5 percent level.

5.2.3 Importance of different factors in choosing the mode of payment

The importance of different factors affecting choice of the mode of payment is highlighted in table 12. The respondents were asked to rate each factor on a scale ranging from –3 (not at all important) to 3 (very important), as suggested in the literature for this kind of research question (see e.g. Fishbein and Ajzen 1975).

First, the bank's name was found to be more important for nonusers than for current users. The standard deviation for nonusers was 2.32, for new users 2.23, and for old users 2.12. Second, the security and trustworthiness of making payments was considered important to all groups. It is vital to note that old users rated this highest with a mean score of 2.75. On the basis of this finding, it can be argued that they trust their current mode of payment, the Internet. The security question had low standard deviations: 1.06 for nonusers, 0.97 for new users, and 0.73 for old users. Third, old users, with a mean score of 2.50 appreciated the importance of speed mostly. However, nonusers and new users also considered speed of a payment important. Standard deviations for the speed question were low for all groups. Fourth, the example of other people was considered not important in all the groups, and no big differences were found between the groups. Fifth, while nonusers attached most weight to social contacts with the bank's personnel with a mean score of 1.14, current users did not find social contacts with the staff important (mean=-1.51). Standard deviations varied from 1.74 (old users) to 2.28 (new users). This may be explained as follows. New users are not all accustomed to banking via the Internet, and continue to long for personal contacts with the bank's personnel.

TABLE 12 Factors affecting the choice of mode of payment

Importance of factors	*Nonusers*	*New users*	*Old users*	*Total*		
	Mean	*Mean*	*Mean*	*Mean*	*No*	*s.d.*
Bank's name	0.82	0.15	-0.62	-0.02	1011	2.28
Security of the MOP*	2.57	2.65	2.75	2.67	1090	0.90
Speed of the MOP*	1.96	2.27	2.50	2.28	1057	1.18
Example of others	-2	-2.18	-2.34	-2.21	936	1.29
Social contacts	1.14	0.04	-1.51	-0.36	1032	2.29
Ease-of-use	2.31	2.43	2.44	2.40	1075	1.08
Distance	2.02	1.43	1.09	1.44	1010	1.98
Price	2.34	2.25	2.21	2.26	1037	1.22
Free from time and place	1.16	2.02	2.51	2.05	1000	1.54

Notes: *MOP = mode of payment
Scale ranging from not at all important –3 to 3 very important

Sixth, ease-of-use was important for all the groups. The mean scores for all were over 2.3, and the overall standard deviation was 1.08. Seventh, distance to a bank was considered most important for nonusers with a mean score of 2.02. Furthermore, for new users distance was not considered so important (mean score 1.43). Similarly, old users did not find the distance as important as did nonusers (mean score 1.09). This finding can be explained by the fact that nonusers have to travel to a bank branch, as users of electronic delivery channels can do their banking affairs at home or at work. Moreover, table 12 shows that all groups considered price important with mean scores over 2.2 in all cases. Freedom from time and place was very important for old users (mean score 2.51), which can be considered an extremely high score. New users also find it important (mean score 2.02), whereas nonusers disagreed a little with users as to its importance (mean score 1.16). To sum up, differences between the groups were found to questions concerning the categories *social contacts*, *bank's name*, and *free from time and place*. No other significant differences were found among the responses.

5.2.3.1 Independent samples t-test

In order to develop more insights into the factors affecting the choice of the mode of payment, we conducted independent samples t-test. This test compares the means for two groups of cases, and is used to test whether the difference in means of one variable in two groups of respondents is significantly different from zero. Here we consider a series of t-tests to compare the mean ratings, outlined in the previous chapter, of Internet banking users and nonusers on a series of importance ratings (variables same as in the table 12). The grouping variable is Internet banking usage, divided into classes 0=no and 1=yes.

The Levene's test for equality of variances in the nonuser and user samples is in most cases significantly different (p=.000, <0.01). Thus, in nine cases out of ten we used unequal variance t-test instead equal variance t-test. However, the results between the equal and unequal variance t-tests are, practically speaking, exactly the same.

TABLE 13 Independent samples test

	Levene's test		t-test for equality of means						
	F	*Sig.*	*t*	*df*	*Sig (2-tailed)*	*Mean difference*	*S.E. difference*	95% confidence level	
								lower	upper
Bank	4.29	.039	-8.35	961	.000	-1.169	.140	-1.44	-.89
Security	21.22	.000	2.46	926	.014	-.137	.005	.00	.25
Speed	70.97	.000	5.19	746	.000	.391	.007	.24	.54
Example	51.66	.000	-3.30	630	.001	-.299	.008	-.48	-.12
Social	33.36	.000	-17.62	929	.000	-2.234	.127	-2.48	-1.98
Easy	14.66	.000	1.42	894	.156	.002	.007	-.00	-.23
Distance	46.01	.000	-6.17	1002	.000	-.745	.121	-.98	-.58
Price	1.38	.240	-1.38	1035	.173	-.105	.008	-.25	.00
Freedom	228.42	.000	9.18	604	.000	.934	.102	.73	1.13

Table 13 shows that the means of the importance of the bank's name in the choice of a mode of payment were significantly different from each other ($p<0.01$). Similarly, the means for categories *speed*, *example of others*, *social contacts*, *distance to a bank*, and *free from time and place*, are all significantly different from each other ($p<0.01$).

The Kolmogorov-Swirnow test was used to evaluate whether the variables differ in the overall shape of the size-frequency distribution. The Kolmogorov-Smirnov test is a test of goodness-of-fit while it concerns with the degree of agreement between the distribution of a set of sample values and a specified theoretical distribution. Thus, it determines whether the scores in the sample can be thought to have come from a theoretical population (Siegel 1956, 46-48). The results of the Kolmogorov-Smirnow test confirmed that in most cases the tested variable was normally distributed. However, in some cases, it was not. Thus, we conducted the Mann-Whitney test to confirm whether there is a statistical difference between the data sets. The Wilcoxon-Mann-Whitney test is a non-parametric test that is used in situations where the data are not normally distributed (Powell 1996, 49-50). The Mann-Whitney test was in line with the t-test. As a result, no significant differences were found between the t-test and the Mann-Whitney. That is, the results can be thought to have come from a theoretical population.

5.3 Conclusion

This chapter investigated individual differences in electronic banking by analyzing different aspects of customers' personal banking. In phase one, the demographic profile of the respondents was described. As stated in the conclusion section 5.1.1, nonusers differ in demographic terms relatively much from current electronic banking users. Table 14 summarizes the demographic differences on the basis of the overview of the survey results between nonusers, new users, and old users:

TABLE 14 Summary of the demographic differences in electronic banking

Group	*Characteristics*
Nonusers	Relatively old (77% older than 50 years) Not high educated (47% had only basic school education) Low household income per annum (39% less than FIM100,000) Pensioners (52%)
New users	Mixture of nonusers and old users Secondary education Relatively wealthy (32% had a household income more than FIM225,001) Blue-collar workers (28%)
Old users	40 percent belonged to age group 35-49 Men dominated (almost 60% were men) Married (58%) University degree (41%) Wealthy (52% had a household income more than FIM275,000) White-collar workers (42%)

In conclusion, age, education, income, and profession are the most influential demographic variables affecting Internet banking usage. In addition, we discussed questions concerning respondents' personal bank and mode of payment. Interestingly, the Internet was the most popular mode of payment among the respondents (39.8%). We then looked at the computer and Internet access of the participants. Whereas the Internet was mainly used for banking, communication, and information seeking, it was not much used for investments or purchasing. Finally, we discussed the different factors affecting the choice of mode of payment. It was found that the importance of the different factors varied between the three target groups. *Social contacts, ease-of-use, price, speed,* and *security* seemed to be important for nonusers. Both new and old users valued *security, speed, ease-of-use, price,* and *free from time and place*. Most of the differences between the groups were found in the importance rating of the categories *social contacts, free from time and place, and bank's name*. The interpretation of the results is obvious: while nonusers seem to value *social contacts,* users tend to appreciate *free from time and place* and *speed*. In other words, users do not hunger for traditional branch banking. Usually, visiting bank branches is considered time-consuming due to long queues. Therefore, electronic banking users are not eager to queue at branches. The question of loyalty still remains. On the basis of these results, we might claim that nonusers' are more loyal to their bank than users, because nonusers placed more weight on the bank's name and contacts with the banking personnel than users did. However, more evidence on this issue is needed. Our results also suggest that electronic banking users are not as price sensitive as nonusers are (see table 11). Cost of the mode of payment was most important for nonusers. This is contrary to what e.g. Jayawardhena and Foley (2000) argue. However, their study was limited to the UK where the costs of getting online are much higher than in Finland.

These results contribute to our previous understanding of Internet banking users as well as nonusers. In particular, nonusers' appreciation of the social aspects of banking was an interesting discovery.

YHTEENVETO (FINNISH SUMMARY)

Elektroninen pankkitoiminta Suomessa: Kuluttajien uskomukset, asenteet, aikomukset ja käyttäytyminen

Kuluttajakäyttäytymisen tutkiminen pankkialalla on yhä enenevissä määrin saanut huomiota ja sen kaipaamaa arvostusta. Finanssialan turbulentti markkinaympäristö on luonut useita uusia liiketoimintamalleja suomalaisille pankeille, joista tärkeimpänä elektronisten jakelukanavien kehitys osana liiketoimintakonseptia. Tässä tutkimuksessa analysoitiin suomalaisia pankkiasiakkaita heidän käyttämiensä pankkijakelukanavien perusteella. Työn perimmäinen tavoite oli tarkastella kuluttajien asenteita elektronisia jakelukanavia kohtaan, erityisesti internet-pankkitoimintaa kohtaan, selvittämällä yhtäältä miten asenteet verkkopankkitoimintaa kohtaan muodostuvat ja toisaalta, onko näillä asenteilla mitään vaikutusta kuluttajien käyttäytymiseen.

Kuluttajakäyttäytymisen teoriassa luodaan selvä linkki uskomusten, asenteiden, aikomusten ja käyttäytymisen välille. Tässä väitöskirjassa kehitettiin teoreettinen malli, joka kuvaa näiden komponenttien suhteita, käyttäen kausaalisia menetelmiä kuten korrelaatio- ja regressioanalyysejä. Tutkimustulosten valossa voidaan väittää, että asenne elektronista pankkitoimintaa kohtaan muodostuu seuraavista uskomuksista ja niiden tärkeyden arvioinnista: palvelun nopeus, hinta, laatu ja helppokäyttöisyys. Asenteiden muodostumiseen vaikuttavat lisäksi monet ulkoiset tekijät kuten fyysinen- ja sosiaalinen ympäristö ja sisäiset tekijät kuten kuluttajan omat arvot, kokemus, persoonallisuus ja elämäntyyli. Mallimme mukaan edellä mainituista tärkeimmiksi osoittautuivat aikaisempi kokemus tietokoneista, tekniikasta ja pankkiasioinnista. Asenne elektronista pankkitoimintaa kohtaan paljastui selittäväksi tekijäksi verkkopankkikäyttäytymiselle. Erityisesti kuluttajien asenne tietokoneita kohtaan huomattiin merkittäväksi selitettäväksi muuttujaksi. Toisin sanoen, mitä positiivisempi asenne verkkopankkitoimintaa kohtaan, erityisesti tietokoneita kohtaan, sitä enemmän elektronisia jakelukanavia käytetään.

Tutkimuksen päätuloksen valossa voidaankin todeta, että asenteita muuttamalla pankeilla on mahdollisuus saada sekä lisää verkkopankkiasiakkaita että parantaa nykyisten asiakastyytyväisyyttä. Asenteiden muuttamisen strategioista mainittakoon ei-käyttäjien kohdalla verkkopankin tunnettavuuden parantaminen seuraavilla tavoilla: 1) pankin henkilöstön tärkeä rooli opastuksessa ja neuvonnassa, ja 2) mainostamalla helppokäyttöisyyttä, edullisuutta, turvallisuutta ja saman tasoista palvelua ajasta ja paikasta riippumatta.

Kuten jo lyhyesti todettiin, teoreettisesti työ liittyy sekä kuluttajakäyttäytymisen tutkimiseen että internet-tutkimukseen tarkastelemalla asenteiden muodostumista ja muuttamista. Teoreettisena kontribuutiona työ tarjoaa näköalapaikan ymmärtämään nykyajan pankkiasiakkaiden mielipiteitä ja teknologiasenteita. Asenteiden selvittämisellä pyritään luomaan edellytykset onnistuneelle asiakassegmentoinnille ja mainonnan suunnittelulle. Pankkien kannalta tutkimustulokset ovat merkittävät, koska verkkopankkiasiakkaista tiedetään verraten vähän.

Tässä tutkimuksessa käytetään ainutlaatuista empiiristä aineistoa, joka on kerätty kesän 2000 aikana ympäri Suomea koostuen yksityisistä pankkiasiakkaista. Otos saatiin Nordean asiakasrekisteristä. Kaikkiaan lähetettiin 3000 kyselylomaketta, joista 1167 otettiin mukaan tilastolliseen analyysiin. Lopulliseksi vastausprosentiksi muodostui täten 38.9%, mitä voidaan pitää varsin hyvänä akateemisessa perustutkimuksessa. Kvantitatiivisen aineiston lisäksi suoritimme 30 syvähaastattelua eri puolilla valtakuntaa. Teemahaastattelujen avulla pyrimme sekä tarkastamaan kvantitatiivisen tutkimuksen tuloksia että lisäämään ymmärtämystämme kuluttajien asennoitumisesta uusia jakelukanavia kohtaan. Aineistoa voitaneen pitää varsin laajana ja edustavana otoksena suomalaisista pankkiasiakkaista sekä teoreettiselta että pragmaattiselta kannalta.

Tutkimustulosten mukaan 39% vastaajista käyttää verkkopankkia säännöllisesti laskujen maksamiseen, saldojen katseluun ja tilisiirtojen tekemiseen. Verkkopankkia käytettiin verraten vähän sijoitustoimintaan tai vakuutuksien ostoon. Verkon kautta käytävää pankkiasiointia pidettiin nykyisten käyttäjien keskuudessa nopeana, helppona ja edullisena tapana hoitaa päivittäisiä/viikoittaisia pankkiasioita. Kuten tutkimuksen päätuloksen esittelyn yhteydessä jo todettiin, asenteen muodostumiseen vaikuttavat eniten kuluttajien aikaisempi kokemus internet -teknologiasta, suhtautuminen teknologiaan yleensä sekä nopeuden ja helppouden arvostus. Elektronisia jakelukanavia ei kuitenkaan käytetä jokaisessa Suomen kotitaloudessa. Ei-käyttäjiä olikin aineistossamme suurin osa. Heidän keskuudessaan suurimmiksi käytön esteiksi nousivat negatiivinen asenne teknologiaa kohtaan, erityisesti tietokoneita kohtaan sekä henkilökohtaisen, kasvotusten tapahtuvan palvelun arvostaminen korkealle. Taustamuuttujilla kuten alhaisella tulotasolla ja koulutuksella oli selvä yhteys negatiiviseen asennoitumiseen elektronisia jakelukanavia kohtaan.

Miten ei-käyttäjät sitten muuten eroavat elektronisten jakelukanavien käyttäjistä? Taustamuuttujista ei iällä eikä sukupuolella huomattu olevan tilastollisesti merkitsevää vaikutusta, kun taas tulotaso ja koulutus osoittautuivat merkitseviksi. Tarkasteltaessa pelkästään nykyisiä verkkopankkiasiakkaita, taustamuuttujilla näyttäisi olevan erittäin suuri vaikutus käytön frekvenssiin. Verkkopankkien suurkäyttäjiä voidaan luonnehtia taustatiedoiltaan seuraavasti: miespuolinen, suhteellisen nuori, varakas ja korkeasti koulutettu, naimisissa/avoliitossa ja usein perheellinen. Psykograafisilta ominaisuuksiltaan suurkäyttäjät ovat teknologiamyönteisiä, pitävät nykyistä pankkiasiointiaan verkon kautta nopeana, helppona ja kaikin puolin myönteisenä tapana hoitaa pankkiasiat välttäen samalla konttorien hälinän, jonot ja joissakin tapauksissa epäystävällisen palvelukokemuksen. Näistä niin sanotuista *heavy-usereista* onkin muodostunut täysin uusi asiakassegmentti pankeille. Kyseiset kuluttajat eivät piittaa konttoreista, toisin sanoen heidän ainoa syynsä ylipäänsä vierailla pankkikonttorissa on uusien pankki/luottokorttien hakeminen. Tutkimuksen tulokset antavat selvästi osviittaa *täydellisen* elektronisen jakelukanavan luomisen suuntaan. Ja täydellisellä tässä yhteydessä tarkoitetaan sitä, että verkon kautta tarjotaan täsmälleen samat tuotteet/palvelut kuin fyysisillä, traditionaalisilla jakelukanavilla. Tarkoituksena onkin saattaa kaikkien pankkituotteiden elinkaaret verkkoon: tilin avaamisesta aina asuntolainan ottoon asti. Onko tämä kaikki tällä hetkellä teknisesti mahdollista ei ole prioriteetti vaan se mitä asiak-

kaat tarvitsevat ja mihin suuntaan pankkiasiakkaiden käyttäytyminen on muuttumassa. Vastoin yleistä luuloa voidaan väittää että verkossa piilee mahdollisuus hallita pankkiasiakkaita paremmin kuin konttoreiden kautta. Konttoreiden merkitys näiden suurkäyttäjien keskuudessa on minimaalinen.

Paljon keskustelua on käyty palvelusta, pankeista ja verkkopalveludilemmasta. Luomalla palvelu-ulottuvuus verkkoon pankit saavat hoidettua tämänkin asian kerralla kuntoon. Lisäämällä henkilökohtaisen palvelun funktio verkkoon saavutetaan samat edut kuin konttoriverkolla usein väitetään olevan eli asiakkaiden hallinta, uskollisuuden vahvistaminen ja asiakastyytyväisyyden parantaminen. Aikaisempi teoreettinen keskustelu väittää verkkopankkien vahvistavan asiakasuskollisuutta. Tämän tutkimuksen perusteella väitettä ei voida vahvistaa eikä täysin kumotakaan. Voidaan ainoastaan todeta, että uskollisuuden vahvistamiseen nykyinen verkkopankkikonsepti saattaa olla liian yksinkertainen, koska palvelusta puuttuu tärkeä uskollisuuden vahvistamiseen liittyvä tekijä: henkilökohtainen palvelu.

Tämän väitöskirjatutkimuksen tulokset antoivat aihetta moniin jatkopohdiskeluihin asiakkaiden hallinnasta nyt ja tulevaisuudessa. Uusia tutkimuskysymyksiä on, ainakin työn tekijälle, tässä vaiheessa avautunut suuri joukko. Tässä tutkimuksessa käytetty viitekehys ja teoreettinen malli on mahdollista testata uusilla otoksilla niin meillä kotimaassa kuin ulkomaillakin. Finanssialan yritykset ovat ladanneet suuria odotuksia mobiili pankkitoimintaan, ja usein kuuleekin puhuttavan mobiilin pankkitoiminnan vallankumouksesta. Tämän tutkimuksen valossa kännyköitä ei käytetä juurikaan laskujen maksamiseen, ja nykyhetkellä vallankumouksen merkitys kuluttajien perspektiivistä näyttääkin vähäiseltä. Kuluttajia tutkimalla ei kuitenkaan voida päätellä tulevaisuuden trendeistä paljoakaan, mielipiteet kun tuppaavat usein mielivaltaisesti muuttumaan. Kaikesta huolimatta tie jatkotutkimusaiheille on raivattu. Tässä esitettiinkin jo eräs varteenotettava vaihtoehto, mobiili pankkitoiminta. Tietääkseni tähän onkin jo jokunen tohtoriopiskelija tarttunut.

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Appendix A List of Interviewed

TABLE A1 List of interviewed

Sex	*User type*	*Age group*	*Location*
Man	Old user (Internet)	Middle-aged	Saarenkylä
Man	Old user (Internet)	Middle-aged	Helsinki
Man	Old user (Internet)	Elderly	Iisalmi
Woman	Old user (Kermit)	Middle-aged	Kajaani
Man	Old user (Internet)	Elderly	Helsinki
Man	Old user (Internet)	Middle-aged	Seinäjoki
Man	Old user (Internet)	Elderly	Joensuu
Woman	Old user (Internet)	Middle-aged	Jyväskylä
Woman	Old user (Internet)	Youngish	Helsinki
Man	Old user (Internet)	Youngish	Järvenpää
Man	Active new user (Internet)	Elderly	Tampere
Woman	Active new user (Internet)	Middle-aged	Lahti
Woman	Active new user (Internet)	Middle-aged	Kuopio
Man	Active new user (Internet)	Youngish	Ähtäri
Woman	Passive[1] new user	Middle-aged	Helsinki
Woman	Passive new user	Elderly	Turku
Woman	Passive new user	Elderly	Porvoo
Man	Passive new user	Elderly	Helsinki
Woman	Passive new user	Elderly	Pori
Woman	Passive new user	Middle-aged	Sipoo
Man	Non-user	Elderly	Uusikaupunki
Woman	Non-user	Elderly	Hyvinkää
Woman	Non-user	Elderly	Helsinki
Woman	Non-user	Elderly	Orimattila
Man	Non-user	Elderly	Ikaalinen
Woman	Non-user	Elderly	Helsinki
Woman	Non-user	Elderly	Tampere
Woman	Non-user	Middle-aged	Rauma
Man	Non-user	Elderly	Helsinki
Man	Non-user	Middle-aged	Vaasa

[1] Passive new user defined as a person with required user ID for electronic banking but not in use

Appendix B Semi-structured interview tool description

TABLE A2 Discussion points

<table>
<tr><td colspan="2">Name:
User type:
Age group:
Date:
Residence:</td></tr>
<tr><td colspan="2">-awareness of electronic delivery channels</td></tr>
<tr><td>Technology attitudes

-use of computer and / or Internet
-use of mobile phone, teletext, and other technologies as well
-technology perceptions, beliefs, reactions
-evaluation of different technological developments
-technology adoption phase
-security issues
-in Internet banking
-credit card usage via the Internet
-evaluation of security issues in everyday life in general and in banking in particular</td><td>Social aspects of banking

-relative weight of subjective norm regarding what other people want me to do
-referents example
-importance of family in the choice of banking delivery channel
-social contacts with the banking personnel
-personal service
-bank branches
-loyalty</td></tr>
<tr><td>Playfulness

-liking / disliking of banking affairs in general
-importance of own control
-liking / disliking of electronic banking
-problems with electronic delivery channels</td><td>Future of banking

-good / bad directions
-future of cash
-use of technologies
-suggestions / improvements for banks / other financial institutions</td></tr>
</table>

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