BoF Online

2007 • No. 11

A qualitative study to identify factors that influence Finnish consumers to change their payment behaviour

Eerika Keinonen
Helsinki School of Economics

Bank of Finland
Financial Markets and Statistics
18.9.2007

Contents

Editor-in-Chief

Jouko Marttila

ISSN

1796-9123 (online)

Postal address
PO Box 160
FI-00101 HELSINKI, FINLAND

Street address Snellmaninaukio
Phone +358 10 8311
Fax +358 9 174 872

Email
first name.surname@bof.fi
www.bof.fi

Swift SPFB FI HH
Business ID 0202248-1
Domicile Helsinki

List of figures

Postal address
PO Box 160
FI-00101 HELSINKI, FINLAND

Street address Snellmaninaukio
Phone +358 10 8311
Fax +358 9 174 872

Email
first name.surname@bof.fi
www.bof.fi

Swift SPFB FI HH
Business ID 0202248-1
Domicile Helsinki

Abstract

Research goals

The research goal for this study was to identify factors that influence Finnish consumers' payment behaviour. Behavioural change to debit cards and online banking that has already occurred was studied in order to identify influencing factors. These are studied to achieve a better understanding of what kind of new payment instruments are likely to become diffused through Finnish society. Understanding consumer behaviour is vital in situations where payment instrument issuers wish to successfully change payment behaviour.

Research methodology

This is a qualitative research study that is part of a larger study by the Bank of Finland into Finnish payment methods. Focus group interviews were selected as the method for the collection of qualitative data because of the exploratory nature of the study. In conjunction with this qualitative study, a quantitative study has been conducted by Tomi Dahlberg and Anssi Öörni in which a survey was sent to 2000 persons.

Background theories

The Theory of Reasoned Action and the Theory of Planned Behaviour expounded by Icek Ajzen and Martin Fishbein are used as background theories in the study of individual behaviour. The background theory used in studying the adoption of new innovations is the Diffusion of Innovations theory formalized by Everett M. Rogers.

Findings

Based on the data collected during the focus group interviews, we identified four clusters of influencing factors. The clusters are a combination of two to three factors. We found that, without a combination of several factors, changes in payment behaviour do not occur. The factors include three innovation attributes from Diffusion of Innovations theory (relative advantage, compatibility, complexity), a push factor and force factors. Push factors are

factors that are especially designed to influence a consumer's behaviour, such as forceful marketing or pricing, but do not force the consumer. The first identified cluster is a combination of relative advantage and compatibility. The second is a combination of relative advantage, complexity and a push factor. The third cluster is a combination of compatibility, complexity and a push factor. The fourth cluster is a special cluster that includes force factors that are out of the consumer's control, such as the lack of other options or wealth.

Keywords

Payment, payment instrument, payment behaviour, pricing of payments, account number, relative advantage, compatibility, complexity, focus group interview

This paper was produced in a joint project between the Helsinki School of Economics and the Bank of Finland.

Tiivistelmä

Tutkimuksen tavoitteet

Tämän tutkielman tavoite oli tunnistaa tekijöitä, jotka vaikuttavat suomalaisten kuluttajien maksukäyttäytymiseen. Tekijöitä pyrittiin tunnistamaan tutkimalla jo tapahtunutta maksukäyttäytymisen muutosta pankkikortteihin ja verkkopankin käyttöön. Vaikuttavia tekijöitä tutkittiin, jotta pystyttäisiin paremmin ymmärtämään minkälaisia uusia maksuvälineitä suomalaiset kuluttajat todennäköisesti omaksuisivat tulevaisuudessa. Maksuvälineiden tarjoajat hyötyvät siitä, että ymmärtävät miten kuluttajien käyttäytymiseen pystyy vaikuttamaan ja täten todennäköisyys onnistuneesti muuttaa kuluttajien maksukäyttäytymistä haluttaessa kasvaa.

Tutkimusmenetelmä

Tutkimus on laadullinen haastattelututkimus, joka on osa Suomen Pankin 'Suomalaiset maksutavat 2010' projektia. Aineiston keruumenetelmänä käytettiin fokusryhmähaastatteluja. Fokusryhmähaastattelu-menetelmä valittiin johtuen tutkimuksen tutkivasta luonteesta. Samanaikaisesti tämän kvalitatiivisen tutkimuksen kanssa Tomi Dahlberg ja Anssi Öörni toteuttivat kvantitatiivisen kyselytutkimuksen, jonka otoskoko oli 2000 henkeä.

Viitekehys

Kuluttajakäyttäytymisen teoriapohjana käytettiin Icek Ajzenin ja Martin Fishbeinin asenneteorioita (Theory of Reasoned Action, Theory of Planned Behaviour). Uusien innovaatioiden omaksumisen tutkimisen teoriapohjana käytettiin Everett M. Rogersin Innovaatioiden diffuusio –teoriaa. (Diffusion of Innovations theory).

Tutkimuksen tulokset

Perustuen aineistoon, joka kerättiin fokusryhmähaastatteluista neljä vaikuttavien tekijöiden luokkaa pystyttiin tunnistamaan. Jokainen luokka on yhdistelmä kahdesta tai kolmesta erillisestä tekijästä. Kerätyn aineiston perustella totesin, että ilman usean tekijän vaikutusta

maksukäyttäytymisen muutoksia ei esiinny. Tunnistetut tekijät sisältävät kolme innovaatio ominaisuutta teknologian hyväksymismalliteoriasta (hyöty, yhteensopivuus, helppous), suostuttelutekijän ja pakkotekijän. Suostuttelutekijät ovat tekijöitä, jotka ovat erityisesti suunniteltu vaikuttamaan kuluttajan käyttäytymiseen, kuten markkinointi tai hinnoittelu, kuitenkaan pakottomatta kuluttajaa. Ensimmäinen tunnistettu tekijäluokka sisältää hyöty- ja yhteensopivuustekijän. Toinen tunnistettu luokka sisältää hyöty, helppous- ja suostuttelutekijän. Kolmas tunnistettu luokka sisältää yhteensopivuus-, helppous- ja suostuttelutekijän. Neljäs tunnistettu tekijäluokka on erityisluokka, joka sisältää pakkotekijöitä, joihin kuluttaja ei voi vaikuttaa, kuten muiden vaihtoehtojen puute tai varallisuus.

Avainsanat

Maksaminen, maksuväline, maksukäyttäytyminen, maksamisen hinnoittelu, tilinumero, hyöty, yhteensopivuus, yksinkertaisuus, fokusryhmähaastattelu

1 Introduction

A payment is the transfer of a commonly agreed value from payer to receiver. The need to transfer value between two parties arises every time products or services are hired or purchased. Finnish consumers are able to select from a large variety of ways to settle payments, including cash, debit cards, credit cards and online banking. The integration and standardization of European payment systems, technological innovations and changes in pricing of payments will all affect Finnish consumers' current payment habits. For example, the integration of the European payment system may mean the end of national debit cards, which are currently very popular in Finland. Technological innovations in the near future, which will enable and also necessitate payment innovations, will most likely be related to mobile devices and digital goods. The pricing of payments in a way that reflects the actual costs of producing the payment service might result in consumers choosing more effective payment instruments. To better understand how these changes will affect Finnish consumers it is necessary to study factors that influence changes in payment behaviour. The main research question addressed by this study is the issue of what influences a consumer to adopt a new payment instrument.

The research question can be divided into two parts: 1) change in behaviour and 2) adoption of a new innovation. The Theory of Reasoned Action and the Theory of Planned Behaviour by Icek Ajzen and Martin Fishbein are used as background theories to study behaviour. The Theory of Reasoned Action suggests a person's beliefs affect their attitudes towards behaviour, which in turn affects their intentions to behave, which can then result in specific behaviour (Ajzen & Fishbein 1980, 6–8). The background theory used to study the adoption of new innovations is the Diffusion of Innovations theory of Everett M. Rogers. Diffusion of Innovations theory has five classes of innovation attributes that measure the likeliness of an innovation to be adopted by a society. These are: relative advantage, compatibility, complexity, trialability, and observability (Rogers 2003, 258). These innovation attributes are used in this study together with the Theory of Reasoned Action and the Theory of Planned Behaviour in an attempt to better understand what kind of new payment methods and instruments are likely to become diffused through our society.

In order to collect data on Finnish consumers' beliefs, attitudes, and intentions towards payment behaviour, focus group interviewing was selected as the qualitative methodology.

One of the advantages of group interviews is that they can provide information on the formation of people's attitudes (Goldman 1962). In addition, Morgan and Spanish state that the major advantage of focus group interviews is that they allow access to the experiences of the interviewed people in addition to their attitudes (Morgan & Spanish 1984).

Traditionally, Finnish payment instruments have been national. This is, however, changing due to Finland's joining the euro currency area, which currently includes twelve countries: Belgium, Germany, Greece, Spain, France, Ireland, Italy, Luxembourg, the Netherlands, Austria, Portugal and Finland. The euro area is driving for a Single Euro Payment Area (SEPA) by the year 2010. SEPA is aimed at developing international payment standards that will unify the now fragmented payment instruments in the euro area. The development of new pan-European standards includes the creation of an international standard for e-invoicing, which will make it easier for banks and consumers to start using it. The e-invoice is likely to create huge savings compared to paper-based invoicing, and it is in the interest of invoicing parties to encourage consumers to start using it. Understanding how consumers can be influenced to change their current payment behaviour will give a better chance of success.

This study is conducted in cooperation with the Bank of Finland project 'Finnish payment methods in 2010'. Harry Leinonen acted as the contact person for the Bank of Finland and reviewed this report. Tomi Dahlberg and Anssi Öörni acted as the contact persons for the Helsinki School of Economics.

1.1 Previous research

The Department of Information System Science at the Helsinki School of Economics has conducted research on electronic and mobile payment systems since 2001. The focus has been on the diffusion process of new payment methods and instruments. Changes in payment behaviour and the diffusion of new payment methods have been researched using both qualitative methods and quantitative questionnaires. These studies have been based on the Technology Acceptance Model, Diffusion of Innovations theory and trust theories.

The present study aims to identify factors that influence changes in payment behaviour. Previous research has shown there are an abundance of influencing factors that need to be discovered for each research topic individually. The influencing factor categories that have been found in previous research are relative advantage, complexity, compatibility, trust and cost. Of these categories, the concrete role of compatibility is not well understood, although it is clear it is important. A relative advantage can be different for each payment instrument and

for each individual. The effect of demographic factors has been inconclusive in previous research conducted by the Helsinki School of Economics. This was taken into account in defining the focus group demographics (Dahlberg & Öörni 2005).

Consumers' intention to change their payment behaviour is part of the data collected in this study. In previous research, consumers have expressed a positive attitude towards new electronic and mobile payment instruments and methods. This positive attitude has not, at least yet, resulted in a change of behaviour. Previous research has been unable to explain which factors are inhibitors of this change. The present study looks at this question further (Dahlberg & Öörni 2005).

1.2 Research questions and goals

New payment instruments are developed both to satisfy consumer needs and to produce cost savings to payment service providers. Consumer needs for new payment methods are seen to arise from convenience (24/7), security issues, automated service interfaces and innovations related to goods and services being sold, such as digital goods or e-commerce. Since one payment instrument is generally not enough for a Finnish consumer, we may say that a perfect payment instrument does not yet exist and there is therefore room for improvement. The main research question we are addressing here is:

- Which factors influence Finnish consumers to change their payment behaviour and adopt new payment instruments?

To further understand consumer payment behaviour, we also sought answers to the following more detailed research questions:

- What kinds of beliefs and attitudes do consumers have towards their account number?
- How important is the compatibility factor?
- How do consumers perceive the cost of paying?
- What is the attitude of consumers towards the explicit and transparent pricing of payments?
- What are consumers' expectations of payment instruments in the future?

The goal was to identify factors that can be used in the future when changes in Finnish payment behaviour are desired or expected. This information is valuable for payment service providers and national authorities seeking to create an environment that works efficiently.

1.3 Research methods

The empirical part of the present study gathered information on Finnish consumers' current payment behaviour, the factors that influence changes in payment behaviour and wishes for the future regarding payment instruments. In addition to these three main topics, information on the meaning of the account number and attitudes towards the pricing of payments was also collected. The study of a person's beliefs, attitudes and intentions involves the investigation of underlying factors that do not always appear when conducting quantitative methods of research. This is why a qualitative research method was chosen. Further, qualitative methods are usually used for research that is exploratory in nature, as is the present study. Focus group interviews were selected as the qualitative method for gathering the empirical data for the study because they are especially suited to revealing people's underlying beliefs that influence the formation of attitudes. Six focus group interviews were conducted with a total of 27 participants between the ages of 18 and 73. Each interview was divided into six main topics: current payment behaviour, account number, past behavioural change, compatibility, cost of paying and wishes for the future. In order to compare groups quantitatively, all participants filled out questionnaires during the interviews. No hypotheses were formed prior to the gathering of information.

1.4 Research limitations

The present study is limited to Finnish consumer behaviour. A typical Finnish consumer adopts at least four payment instruments during the transition from childhood to the age of twenty, namely cash, a debit card, a credit card and online banking. Payment methods and instruments are adopted in a natural way that reflects growing up during different stages of life with changing payment behaviour, for example starting work and receiving a steady income along with expenses and invoices. The present study researches factors that influence changes in payment behaviour outside this adaptive development.

Another research limitation is the payment instruments studied. Only eight instruments (cash, debit cards, credit cards, mobile phone payments, direct debits, online banking,

mobile banking and e-invoices) were selected for study, with, for example, cheques and paper reference giros being excluded.

1.5 Findings

Based on the data collected during the focus group interviews, four clusters of influencing factors were identified. Each cluster is a combination of two to three factors. We found that changes in payment behaviour do not occur without a combination of several factors. Factors included three innovation attributes from Diffusion of Innovation theory (relative advantage, compatibility, complexity), a push factor and force factors. Push factors are factors that are especially designed to influence a consumer's behaviour, such as forceful marketing or pricing, but do not force the consumer. The first identified cluster is a combination of relative advantage and compatibility. The second is a combination of relative advantage, complexity and a push factor. The third cluster is a combination of compatibility, complexity and a push factor. The fourth is a special cluster that includes force factors that are out of a consumer's control, such as the lack of other options or wealth.

Findings related to beliefs and attitudes towards the account number include consumers' strongly belief that an account number can be used for fraud, which indicates that they do not have much knowledge of what the account number is used for. Furthermore, most of the interviewees indicated that they see little value in being able to keep the same number when changing banks. As to the format, most interviewees indicated that they prefer a numerical bank account identifier.

Compatibility was not found to be necessary for a new payment instrument if relative advantage and other factors are of significant scale. This conclusion is based on the adoption of online banking in Finland, which was not compatible with any previous payment habit. All interviewees indicated that online banking is natural behaviour today. This result is reflected in the design of the influencing factor clusters mentioned above.

Based on the data collected during the interviews, consumers have very little knowledge of the cost of payments. Surprisingly, the interviewees also had little knowledge of how much they pay for the payment instruments they use themselves. However, all participants using American Express were well versed in the bonus point system, which has been the sales pitch for this credit card over other cards. This indicates that marketing does work.

Attitudes towards the pricing of payments were sceptical, but revealed that pricing would probably steer consumer payment behaviour. However, this observed impact depended largely on the situation or item being purchased. For example, the interviewees signalled

indifference towards a 1% discount on an item that costs either very little or very much. On the other hand, the observed impact also depended on the type of item being purchased. For example, at a grocery store even a small discount is valuable, because additional items can be bought with the discount, whereas at a furniture store the discount does not enable the purchase of another couch. Furthermore, one group discussed the probability that a discount would reflect on their behaviour and concluded that even a small discount would change their behaviour if the cheaper payment instrument was already 'in their wallet'. This indicates that compatibility is a factor when changes in the behaviour of consumers are sought by providing discounts. The less compatible a new payment instrument is the greater the discount, ie the relative advantage, needs to be.

All the focus group participants were satisfied with the current payment environment in Finland and found it hard to think about wishes for the future. After being asked for something that annoyed them currently, almost all participants from all groups gave the same answer: more information about products purchased with a debit card should be visible via online banking. Additional information that was desired included contact information for the store, more details about what was purchased, and warranty information – to name a few examples. Another wish was to have a payment instrument that could be used instead of cash when debit cards were not accepted. For this, most participants suggested some form of mobile phone payment. The participants had practically no information on e-invoices and therefore did not express much interest in them. Based on the data collected during the focus group interviews, we would suggest more educative marketing and possibly a new term for e-invoices without the 'e'.

Further research is needed to validate the four influencing factor clusters found in the present study. Additional research on how international online debit cards will affect the use of credit cards is also suggested.

1.6 Structure of report

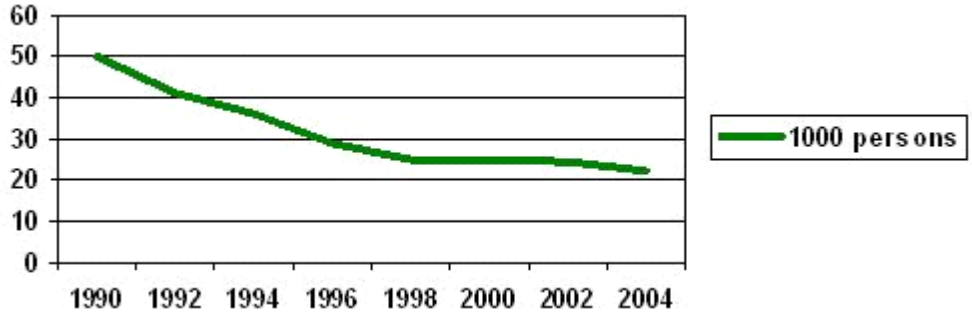
This report has seven chapters. Chapter 2 is about payments. Payment methods and instruments can be named, categorized and defined in different ways, and it is important that the reader understands the definitions of payment methods and instruments used in the present study. Chapter 3 introduces the background theories used in the study, Chapter 4 explains the methodology of the empirical study, and Chapter 5 analyses the data collected in the focus group interviews. Chapter 6 presents the identified factors influencing payment

behaviour, while Chapter 7 presents the conclusions, evaluates the quality of the empirically collected data and suggests topics for future research.

2 Payments

The Finnish economy experienced a banking crisis in the early 1990s. As a result, several banks merged, many branch offices were closed and overall bank personnel was halved between 1990 and 1998, as is evident from Figure 1 (Banks 2005 in Finland, April 2006, FBA).

Figure 1. Deposit bank staff 1990–2004



The crisis also forced banks to seek more cost-efficient payment methods. A significant part of cost savings was achieved by digitalizing bank services and by creating self-service banking. Bo Harald – a former long-time head of Nordea's Internet banking – estimates that banks were able to save up to 50% of their operational costs by convincing their customers to service themselves using online banking (Raeste, Helsingin Sanomat, 8 January 2006). These savings explain the enthusiasm and effort that was put into changing Finnish consumers' behaviour from visiting bank branches to using the Internet. It is estimated that today only one domestic invoice out of a hundred is processed by bank personnel in a branch office, and that this has created cost savings of billions of euro for all Finnish banks. The next step towards more cost-efficient payment systems is e-invoicing. Finnish banks have agreed upon a common e-invoice standard called Finvoice and hope to get service fees and achieve further cost savings by making the paper invoice obsolete.

In this chapter, we explain payment methods, define the payment instruments included in the study and give a statistical presentation of recent changes in payment behaviour. We continue by defining the account number so that the reader can better understand the misconceptions that Finnish consumers have in relation to bank account numbers. We then present the factors that cumulate payment costs, and research on this topic as background

information for the data to be collected during the focus group interviews. The chapter ends with a brief review of current developments in payment systems that pave the way for future innovations in payment methods and instruments.

2.1 Payment instruments included in the study

The payment instruments included in the present study are: cash, debit cards, credit cards, mobile phone payments, online banking, mobile banking, direct debits and the e-invoice. These instruments differ from each other in many ways. For example, cash involves two parties, whereas the others involve at least three parties to execute a payment. These parties are the buyer, ie the owner/holder of the payment instrument, the merchant/receiver and a financial institution or payment instrument issuer. Most payment instruments that involve financial institutions or payment instrument issuers are attached to a bank account. Another differentiating characteristic is the time that it takes for a payment to be settled from the instant a purchase is made: for example, cash is instant in contrast to a credit card invoice that can be settled up to almost 2 months later. Some payment instruments require the payer to be physically present during the transaction, whereas others allow purchasing at a distance. The shift from historical paper-based instruments to electronic payment instruments has made it possible to trace payments and identify the purchasing party at a later date; ie payments are no longer anonymous. Furthermore, some payment instruments are better for large payments and others better suited to micro payments. These differences have resulted in consumers adopting more than one payment instrument so they can always select the one that best fits their needs.

Payment instruments can be classified according to the method of payment. The number and the types of payment method vary depending on the purpose and perspective of payment instrument classification. Research on consumers' purchasing behaviour often uses four classes: cash, direct debit, credit cards, and payment against invoice. Credit cards and payment against invoice have two phases: firstly, the transfer of purchase/usage/rent to the invoice, and secondly, the execution of payment as stated in the invoice. All four classes can be divided further into physical, electronic and mobile payment instruments. Financial institutions including central banks usually divide payment instruments into two different types of payment method: cash and account-based instruments. This classification into two payment methods serves the central banks because their purpose is to measure liquidity. Instruments based on cash payments are 'out of the system' and the location of the instrument cannot be accounted for at any given moment. For example, coins can be stored

in somebody's kitchen or lost in the forest, and financial institutions cannot be sure whether or not they will be returned into the system. Payments made with account-based payment instruments do not leave the payment system and can be accounted for at all times. Account-based payment instruments include online debit cards and online banking, to give two examples. These two classifications are the most commonly used. For the purpose of the present study we use the classification into cash and account-based payment instruments.

2.1.1 Cash

The word 'cash' is descended from the Tamil word *'kasu'*, which meant currency (Definition of Cash, 2005). In the present study, coins and notes are referred to as cash or cash instruments. As the name suggests, cash instruments constitute the cash payment method. Cash instruments are legally valid and are instantly re-transferable payment instruments. This method requires no intermediaries or bank account transfers between the receiver and the payer to make payment. Finland joined European Monetary Union (EMU) in 1999 and changed its currency from the Finnish markka to the euro in 2002. The exchange rate was set at 1 euro for 5.94573 markkaa. This change in currency affects the statistics on Finnish consumers' payment behaviour, and especially the use of cash.

The value of banknote withdrawals from ATMs grew steadily in Finland between 1995 and 2001, from EUR 12.8 billion to EUR 17.4 billion. Since 2001, ATM withdrawals have remained steady at about EUR 17 billion a year. The average amount of an ATM withdrawal has increased from EUR 63.40 in 1995 to EUR 77.80 in 2004 (Statistical Data on Banks' Payment Systems in Finland 1995–2004, 2005). The amount of cash in circulation did, however, increase in 2004 and 2005. The increase in the amount of euro in circulation can be accounted to many possible factors. One theory is that some consumers are spending 1 euro as they would have spent 1 markka, although it is worth almost six times more. Another possible influencing factor for the increase in euro cash in circulation is that as an international currency it can be used in eleven countries in addition to Finland, making it possible to withdraw euro cash in Finland and spend it elsewhere when travelling, or, to take another example, to purchase a commodity (a car) in another country (eg Germany) using the same currency. Another significant factor for the increase of euro cash in circulation is that small businesses use (euro) cash to purchase imports and to pay the salaries of their blue-collar foreign workers. The international feature of the euro has also made it more appealing for criminal activities, which can be seen in the statistics as one of the increasing

factors. Taking into account these factors, we can say that Finnish people still use physical cash in daily purchases, but as a payment instrument it is not experiencing growth.

2.1.2 Debit cards

The debit cards included in the present study are national debit cards issued by Finnish banks plus the online debit card Visa Electron. These payment instruments come under the account-based payment method. Debit cards[1] and online debit cards differ from each other mainly in that online debit cards are always instantly debited from the bank account, whereas debit cards can be debited in real-time or with a small delay ranging from one day to one week, depending on the merchant's point-of-sale device. Another difference between the two types is that the debit cards issued by Finnish banks allow purchases only face-to-face at point-of-sale terminals or at self-service machines like, for example, petrol pumps. This means that purchases cannot be made at distance by, for example, giving the debit card number, which disables the use of these cards for Internet purchases. Online debit cards are internationally accepted, unlike national debit cards, and can be used for Internet purchases as well as face-to-face.

Debit cards have become very popular among Finnish consumers. The number increased from 1.322 million in 1995 to 2.011 million in 2002, since when the number of debit cards has been declining in favour of combination cards. The total number of debit cards, including combination Visa or MasterCard cards, has almost doubled in ten years from 1.962 million in 1995 to 3.055 million in 2004 (Statistical Data on Banks' Payment Systems in Finland 1995–2004, 13 April 2005).

Since 1 April 2000 it has been possible to make payments in Finland with Visa Electron and Maestro, which are online debit cards. In June 2004 there were 1.3 million Visa Electron cards in Finland, which is 100,000 more than Visa credit and charge cards. Total sales paid for by Visa Electron cards in Finland increased from EUR 0.05 billion in 2001 to EUR 1.2 billion in 2004. Visa Electron is thus a payment instrument that has experienced strong growth in Finland (Luottokunta Annual Report 2004).

Payments initiated with all these debit cards differ from credit card payments in that they are settled with funds from the cardholder's bank account directly without separate invoicing.

[1] Terminology: 'debit card' refers to the Finnish 'pankkikortti' (literally 'bank card') and 'online debit card' to, for example, the Visa Electron.

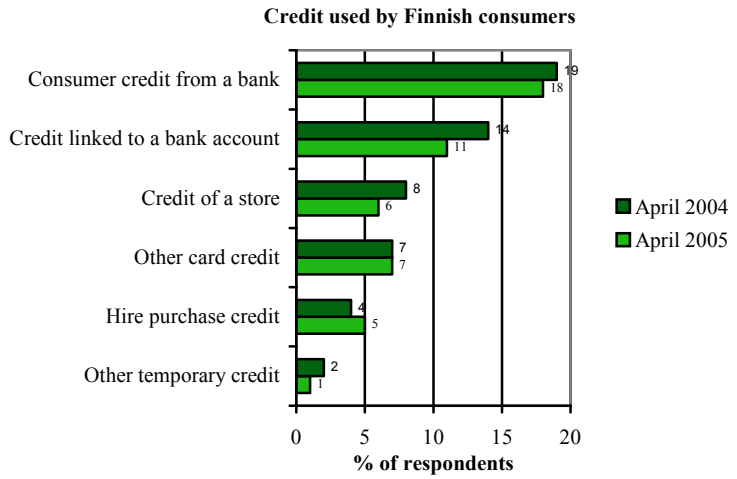
2.1.3 Credit cards

The credit cards included in the present study are traditional credit and charge cards with no differentiation being made between brands such as Visa or American Express. Credit cards come under account-based payment methods. Credit card instruments initiate payments that include two separate phases: first, the issuer of the credit card instrument credits the merchant, and later the cardholder is invoiced by the credit card instrument issuer. In Finland, credit cards are invoiced each month by the issuer and are not necessarily connected to a bank account, being debited by direct debit. The invoice is a statement of the purchases made with the card during one month and the total amount owed. In some card services the cardholder can choose to pay either a minimum amount, a larger amount, or the entire amount owed, the last being the most common convention. The credit provider charges interest on the amount outstanding. This interest is typically a much higher rate than the interest rates applied for bank loans. Most credit card issuers waive interest charges if the balance is paid in full each month. The rates and terms vary depending on the credit card and the issuer. Most issuers offer incentives such as frequent flyer miles or gift certificates to attract customers despite the high interest rates (Definition of Credit Card, 2005).

Credit cards can be used at a distance by giving the credit card number, eg over the phone or on the Internet. This enables some form of locational independence, since the purchaser does not have to be physically present at the point of sale. The most common credit cards in Finland are Visa (1.2 million), MasterCard (350,000), Diners (an estimated 85,000) and American Express (an estimated 50,000) (Luottokunta Annual Report 2004). This means that there were roughly 1.685 million credit cards in Finland in 2004.

Not all credit cards have a credit option. Credit cards without a credit option are strictly speaking charge cards, although most people refer to them, too, as credit cards. For example, Visa and MasterCard are generally issued solely as charge cards. This means that the charges must be paid each month in full. Usually no interest is charged. This allows the charge cards to serve as a form of short-term credit with an average of 1.5 months of payment time free of interest. The bar chart in Figure 2 depicts the answers to the question: 'Do you hold credit other than a housing loan at the moment?' From this figure we can see that only 7% of respondents to a survey conducted in early 2005 held credit on a credit card. (Survey on saving and use of credit, April 2005, FBA).

Figure 2. Credit used by Finnish consumers



From these figures we may conclude that most Finnish consumers use their credit cards as charge cards. Furthermore, although the number of Visa cards in circulation grew in 2004 by 11.9% (Luottokunta Annual report 2004), this growth did not correlate with credit holdings detected in the afore-mentioned Finnish Bankers' Association study, which supports the view that most credit cards in Finland are used as charge cards. An interesting conclusion can also be drawn reflecting the popularity that Visa Electron is experiencing – it seems possible to conclude that the majority of Finnish consumers have a credit card for international and Internet payments but not for credit. If this is the case, will the popularity of current credit cards and national debit cards distributed by Finnish banks decrease in the future? This issue is investigated further in Chapter 5.

2.1.4 Mobile phone payments

A mobile phone payment is a payment that is conducted using the mobile phone as the payment instrument to initiate payment. The mobile phone payments most widely used in Finland currently are payments for logos, ring tones and public transport tickets. For these purchases the mobile phone is best classified as an account-based payment method. A wallet located in a mobile phone would be classified as belonging to the cash method. However, mobile wallets were excluded from the present study. A debit card can also be installed on a mobile phone, but this is not yet available in Finland. The general public has not yet embraced mobile phone payments and only beliefs, attitudes, intentions and wishes for the future were collected about them during the present study.

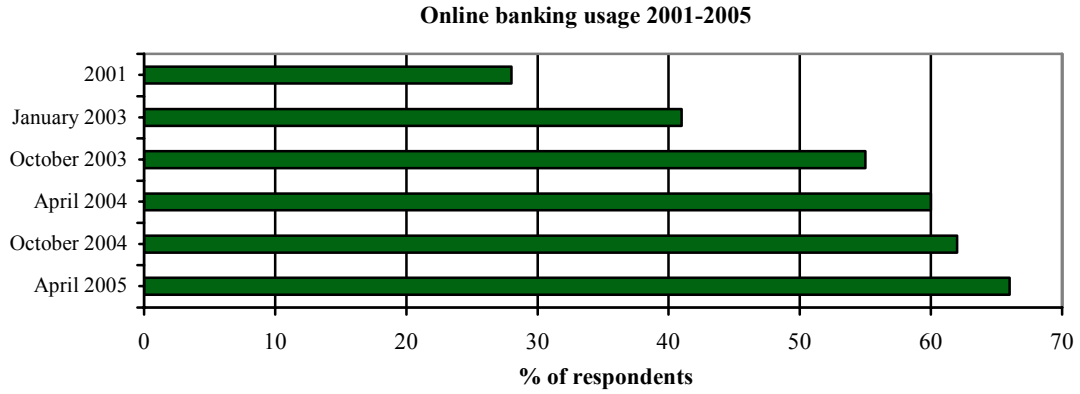
When a mobile phone is used to purchase ring tones, logos or public transport tickets the operator can be seen as behaving in the role of a credit card issuer when the purchases are charged to a phone bill. However, currently in Finland the operators mostly sell their own products and services and do not behave as credit institutions.

2.1.5 Online banking

Online banking is not exactly a payment instrument; it is more a method of access to multiple payment instruments. Despite this, we have decided to study the use of online banking generically as a single payment instrument. Online banking (web banking, Internet banking) is a term used for performing transactions, including payments, over the Internet through a bank's secure website. Customers need identification codes distributed by the bank in order to access the online bank with 'standard' personal computer (PC) hardware and software. Online banking payment instruments come under account-based payment methods, where instruments such as paperless credit transfers are used.

Online banking is mostly used to pay and settle invoices. Nowadays the majority of paper-based invoices received via mail by Finnish consumers are paid via an online banking account. Figure 3 shows that 66% of respondents to the *'Survey on saving and use of credit'* conducted by the Finnish Bankers' Association in April 2005 used online banking regularly, and that this proportion has increased steadily from 'only' 28% detected in 2001. According to the same study, 64% of respondents also preferred online banking for paying their bills.

Figure 3. Online banking usage 2001–2005



When a consumer makes purchases against invoices, he/she accepts the obligation to pay for the purchase on a given date as agreed and documented on the invoices for goods or services that have either been received prior to settlement or will be received after settlement

in the case of advance payment (Dahlberg, 2005). Unlike payments made with a debit card, for example, purchases made against invoices require the payer to process the invoices. Online banking is an instrument to process invoices, and as such can be classified as a payment instrument even though it is not used during the purchase process.

Please note that e-payments are excluded from this study. E-payments are a relatively new way to settle payments on the Internet. They involve a 'button' located on a website that connects the purchasing party to his/her online bank and enables payment directly in real-time from the payer's bank account to the merchant's bank account instead of using a credit card or an invoice.

Online banking is an important enabler for electronic payment innovations, and although Finnish consumers have adopted online banking as such there is still much room for improvement and evolution.

2.1.6 Mobile banking

Mobile banking is online banking carried out with a mobile phone. In Finland, mobile banking is commonly called 'WAP banking'. Mobile banking should be described more as a payment access method than a payment instrument – similarly to online banking. Mobile banking differs from mobile phone payments in that the operator does not take part in the payment process; instead, a bank provides the service. The same account identification codes can be used for mobile banking as for online banking. Mobile banking is usually charged separately as an additional service by the banks. Mobile banking has not yet been adopted by the majority of Finnish consumers and has generally been a disappointment. However, new identification and authorization innovations and improved mobile phone services might increase its popularity in the future. WAP (Wireless Access Protocol) can be seen as the poor man's Internet, and the next generation of mobile networks may remove current problems by providing full web services. Mobile banking instruments come under account-based payment methods.

2.1.7 Direct debits

Direct debits are invoices that are automatically debited from a bank account and enable the payer to be passive. The payer mandates the bank to transfer funds to the receiver's account at the time defined in the payment transaction as agreed by the parties. In other words, this gives the receiver of the payment the right to transfer funds from the payer's account without

the payer having to process the invoice. Most Finnish banks use direct debit invoicing for mortgage payments. In Germany, one-off direct debits are sometimes used equivalently to debit cards in Finland. In Finland, direct debits are used solely for recurring payments, such as electricity or housing.

In 2004, out of 602 million giros in Finland, 69 million were direct debits. Reference giros are still the most popular, although direct debits have steadily increased from 26 million in 1995 to the current 69 million (Statistical Data on Banks' Payment Systems in Finland 1995–2004, 13 April 2005).

2.1.8 E-invoicing

An e-invoice is not in itself a payment instrument, but together with online banking (or mobile banking) the two can be considered a payment instrument. E-invoicing is a new way of delivering an invoice electronically directly to an online bank and hence to the attention of the payer. The online bank's payment application is able to automatically process the e-invoice details such as the receiver's account number and name, the reference number and the amount due.

Both enterprises and consumers (retail customers in bank vocabulary) can receive invoices in electronic format. In business-to-business (B2B) e-invoicing, the invoice information is conveyed from the invoice issuer's invoicing system directly to the recipient's financial administration IT system via the bank's payment system. In contrast, in business-to-consumer (B2C) e-invoicing, consumers receive e-invoices through their personal online banking accounts and generally only view invoices via the web service. The consumer then makes an explicit acceptance decision to commit the payment. E-invoices are graphically presented on the computer screen so that their appearance is similar to that of an invoice printed on paper. The consumer no longer has to receive paper invoices or receipts. This facilitates invoice archiving, distribution and approval procedures (Definition of e-invoice by Tieke, 2005). At its simplest, the consumer can accept/commit the payment with a single PC/mobile phone keyboard stroke.

Online banking is a requirement for consumer e-invoicing. The consumer cannot receive, accept or archive invoices without the use of an online bank account. This requirement is not an obstacle in Finland. The critical mass of online banking users has already been reached. Another requirement is a positive legislative environment. Legislation in Scandinavia imposes no hindrances to electronic invoicing. As a transmitter of electronic invoices, the e-invoicing service provider corresponds to the Post Office; e-invoicing data therefore enjoys the same

privacy and protection as conventional mail. Accounting legislation in Nordic countries permits the use of electronic archives for both vouchers and accounting ledgers. Many Nordic companies already use electronic archives. EU legislation also supports electronic invoicing (Definition of e-invoice by Tieke, 2005).

Today in Finland, the banks and e-invoicing service providers have agreed upon basic procedures that enable e-invoices to be sent and received reliably in a common network. This means that the invoicing traffic between the invoice issuer and the recipient is conveyed in a uniform manner even if the parties use the services of different e-invoicing service providers. The service providers and the banks take care of the set-up, maintenance, monitoring and backups for the network connections. They also handle any format conversions needed for e-invoicing, allowing customers to select the method of sending and receiving e-invoices that suits them best (Definition of e-invoice by Tieke, 2005).

E-invoices are expected to start gaining popularity among Finnish consumers during 2006. Chapters 5 and 6 discuss the requirements for success in convincing Finnish consumers to adopt e-invoicing.

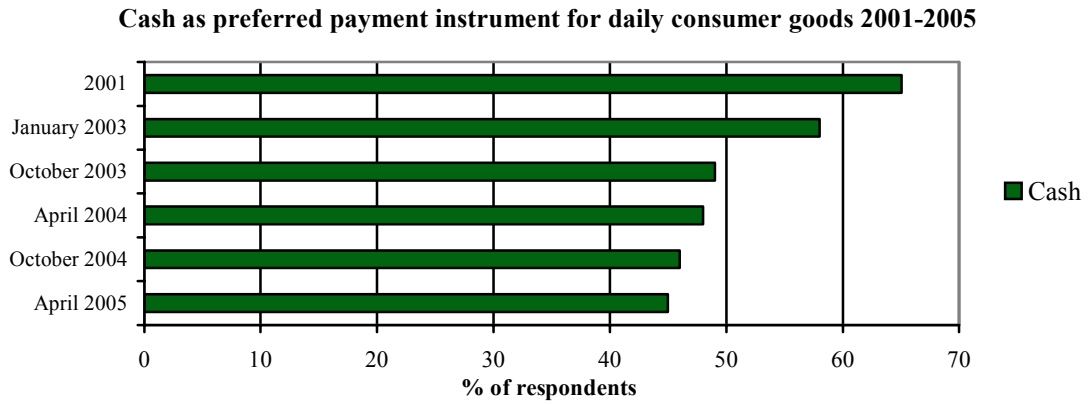
2.2 A statistical presentation of recent payment behaviour changes

Most relevant changes in Finnish payment behaviour are due to the banking crisis of the early 1990s which forced banks to implement more cost-effective systems. Another major influence has been the Internet, with money and payments becoming increasingly electronic.

To present recent payment behaviour changes statistically, we used the results of the Finnish Bankers' Association (FBA) report *'Survey on saving and use of credit'*, published in 2005. The survey, conducted in April 2005, had 1,506 respondents between the ages of 15 and 74 from all over Finland. This age group of Finns comprises 3,960,000 persons. The FBA has conducted surveys on Finnish payment behaviour since 1999, and since 2001 it has conducted the same survey twice a year. A summary of the findings of the FBA survey of payment instrument preferences between 1999 and 2005 shows that the use of cash has declined slightly, the use of debit cards has increased, the use of online debit cards has increased, and the use of credit cards has remained stable. Cash and debit cards were preferred by 45% and 43% of respondents respectively, which are almost equal proportions. In contrast, 5% of respondents paid their daily consumer goods purchases with Visa Electron or directly to an account. Only 2% preferred a credit card, and 1% a retailer's card. Figure 4

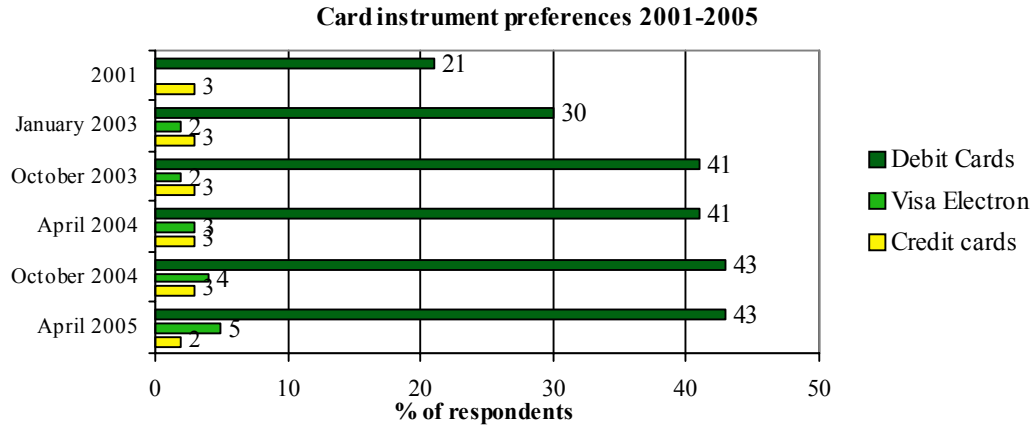
depicts the percentage of respondents who replied 'In cash' to the question: 'How do you pay for your daily consumer goods normally?' We can see that since 2001 cash as a preferred instrument for paying daily consumer goods has decreased from 65% to 45%.

Figure 4. Cash as preferred payment instrument 2001–2005



The changes in card instrument preferences collected by the FBA are shown in Figure 5. The question that the respondents answered was: 'How do you pay for your daily consumer goods normally?' We can see that the use of debit cards has doubled in four years, with 43% of respondents now preferring them. Visa Electron has only been available since 2001 and is gaining in popularity steadily, with 5% of respondents preferring it at the moment. According to the same study, credit cards were preferred by only 2% of respondents and showed a decline in preference from 3% a year before.

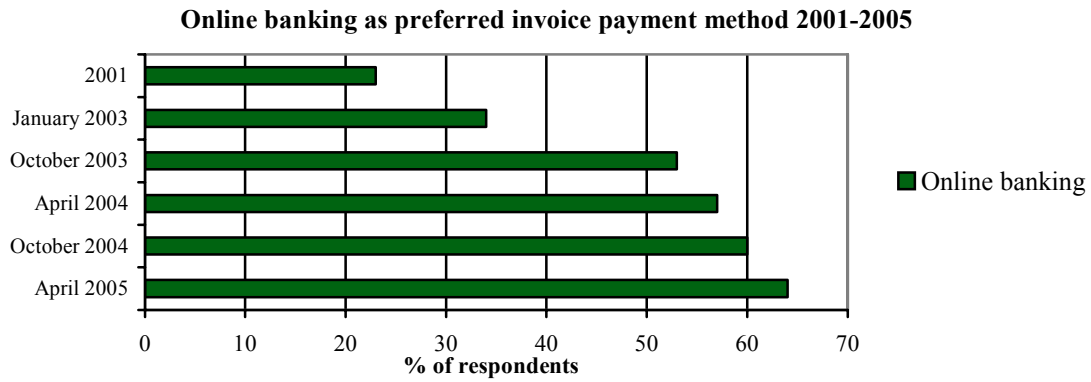
Figure 5. Card instrument preferences 2001–2005



The FBA survey also studied changes in invoice payment preferences. Online banking was found to be the preferred way of handling invoices for 64% of respondents. All other payment

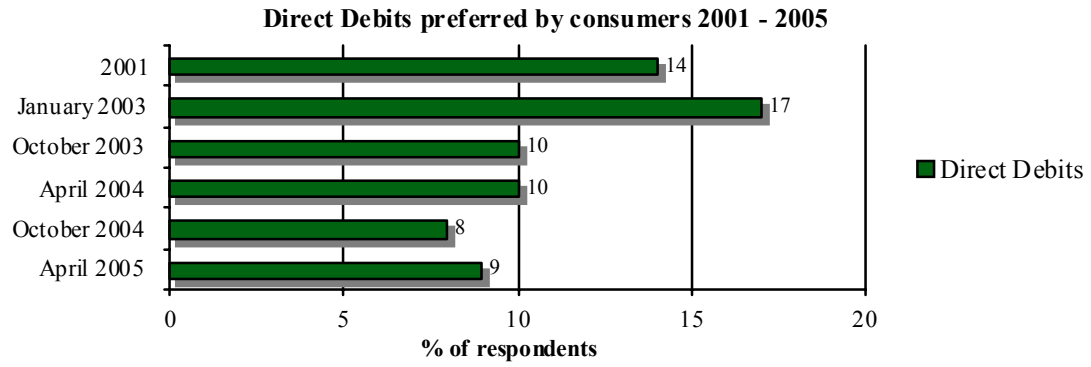
alternatives had declined in preference. The second most popular way to pay an invoice was through an ATM (18% of respondents), 9% of respondents preferred direct debits, as shown later in Figure 7, while 6% preferred the use of a payment service with a service envelope (payments are sent to a bank in an envelope to be paid, and a service charge is debited from the payer's bank account). 5% of respondents still go to a branch office and use cash or giros to pay their invoices, and only 1% use the telephone as the most typical way of paying. Figure 6 depicts the growth in popularity of online banking for paying invoices, and like the preceding figures has been based on data from the FBA survey.

Figure 6. Online banking as preferred invoice payment method



The FBA survey also included the following question: 'What is the most typical way you pay your bills?' Figure 7 shows the results regarding respondents' preference for direct debits. Direct debits have declined in popularity since 2001 after peaking in 2003 at 17%, but experienced a slight growth in 2005 to 9% from 8% the year before.

Figure 7. Preference of direct debits



The reason for the variation in preference towards the direct debit by Finnish consumers is not clear. This issue is discussed further in Chapter 5.

Mobile phone payments, mobile banking and e-invoices are relatively new payment instruments and the statistical data is therefore inconclusive and somewhat distracting. They were not included in the FBA study. For the purpose of the present study the main statistic relating to these three payment instruments is that the general public has not yet embraced their use.

2.3 Account numbers

In Finland, two systems of bank account numbers are currently used side by side: the national Finnish bank account numbers and the international bank account numbers commonly referred to as IBANs. All Finnish bank accounts have both account numbers. The IBAN version of the account number is created by prefixing the national account number with a country code and an international check digit.

The Finnish bank account numbers are generated from a bank and a branch code, the individual account number and a check digit. The check digit enables instant validation of an account number by an algorithm. The maximum length of an account number is 14 digits. The number is divided into two parts, where the first part is always six digits (the bank branch code). The second part varies from 2 to 8 digits. In order to enable computerized use of account numbers, zeros are added in a predefined manner to make all account numbers 14 digits long. The first two digits are a clearing bank code number that has been commonly agreed between the banks. As an example, an OP Bank Group account number could be 500015-281. The Finnish clearing bank codes are as follows:

1 and 2 = Nordea Pankki (Nordea)
31 = Handelsbanken (SHB)
33 = Skandinaviska Enskilda Banken (SEB)
34 = Danske Bank
36 = Tapiola Pankki (Tapiola)
37 = DnB NOR Bank ASA (DnB NOR)
4 = Säästöpankit (Sp) ja paikallisosuuspankit (Pop) sekä Aktia
5 = Osuuspankit (Op), OKO ja Okopankki
6 = Ålandsbanken (ÅAB)
8 = Sampo Pankki (Sampo)

(Suomalaisten tilinumeroiden rakenne ja tarkiste, 2004).

Since 1 July 2003, EU citizens have been able to make cross-border money transfers in euro of up to EUR 12,500 for the cost of domestic giros by using IBANs and bank identification codes (BICs) (EU payments, EU giros, 2003). The IBAN standard and BIC codes are necessary for the uniform presentation of data needed to execute giros by the automated cross-border Straight Through Processing (STP) system. The IBAN identification is generated by adding a country code conforming to an ISO standard and two validation digits for check algorithms to the national account numbers. The IBAN can be validated in all countries with the same algorithm regardless of how individual countries generate account numbers. For example the previous OP Bank Group account number 500015-281 would be FI1350001520000081, where:

FI	= the ISO country code for Finland
13	= the two check digits
500015	= the first six digits of a normal Finnish bank account number
20000081	= the second part of the Finnish bank account number including zeros to transform it to 8 digits

(Kansainvälinen tilinumero IBAN ulkomaan maksuliikenteessä, 2000).

2.4 Cost of payments

At present, Finnish consumers' payment behaviour is strongly influenced by the banks. The most effective way for them to do this is by pricing payment instruments in a way that guides consumers to use those instruments that are most desired by the banks. The cost of providing a payment service is made up of all service and other costs needed to process a payment, including, for example, accounting and postal services. The actual costs of different payment methods and instruments used by consumers have not been researched very much. The most notable studies of the costs of payment systems have been carried out by David B. Humphrey in the United States, Gabriella Guibourg and Björn Segendorf in Sweden, and Olaf Gresvik and Grete Owre in Norway.

The most significant finding of Humphrey's research was his estimation of the costs of payments to be as high as 3% of GDP in the United States in 1997. This finding emphasised the need to research the costs of payment systems and their pricing models.

Gabriella Guibourg and Björn Segendorf have written a working paper for Sweden's Central bank, the Riksbank, about the cost structure of retail payment services in Sweden. The paper was published in 2004. Their study sought to estimate banks' internal costs for producing different payment services and to investigate if the price structure reflected the

cost structure. The three main findings of the study were that (i) the costs between different payment instruments vary considerably, (ii) the prices for private customers do not reflect costs, and (iii) the banks implement cross subsidies between different payment services. Regarding cost structure, the authors found that paper-based payments were more costly to produce than electronic payments. Direct debit card payments were less costly than credit card payments and cash withdrawals. Guibourg and Segendorf suggest that if consumers were to receive the correct price signals for payment services they would change their behaviour from paper-based payments to direct debits and electronic credit transfers, and from credit and charge cards to debit cards (Guibourg & Segendorf, 2004).

Olaf Gresvik and Grete Owre found that banks in Norway price different payment services in accordance to the costs of producing services. Payment services are priced either per transaction or by bundling. Giros paid over the counter are priced per transaction, whereas payment cards have an annual fee into which costs are bundled. Gresvik and Owre calculated that the annual cost of payment services in Norway in 2001 was NOK 5.9 billion, while the income from service fees was only NOK 4 billion. Thus, the income from payment services covers only 68% of their costs in Norway (Gresvik & Owre, 2003).

The estimated savings from e-invoicing in Finland alone are EUR 2.7 billion a year, including business-to-business (B2B) and business-to-consumer (B2C) payments. To understand this estimate it is necessary to describe where this figure comes from. It is estimated that roughly 200 million B2B invoices and 150 million B2C invoices are sent in Finland every year. The handling costs for a single B2B invoice when both the issuer's and the recipient's costs are included are on average approximately EUR 30 per invoice. The handling cost for an e-invoice is only a fraction of this. For a business-to-business invoice 80% of the costs are at the receiving end (Definition of e-invoice by eInvoice consortium, 2005).

The handling costs and savings for B2C payments are not as straightforward as for B2B payments. However, it is safe to assume that substantial savings can be realized by switching to e-invoices in the consumer sector as well. The question is how consumers can be persuaded and attracted to using e-invoicing. The savings in B2C invoicing are substantial, but for consumers the incentives to adopt e-invoicing are not so clear, since consumers have never been directly charged for payments. The costs have instead been hidden in the prices of goods and services. The critical mass of online banking by consumers has been reached in Finland and e-invoicing is already today a viable payment alternative for

Finnish consumers. The Finnish consumer's e-invoicing adoption criteria are discussed in Chapter 5 and Chapter 6.

2.5 Future trends

Future trends are shaped by the approach of the Single Euro Payment Area (SEPA), the development of new electronic and technological standards, the opportunities offered by the Internet and mobile phone networks, and new pricing models. The factors driving the evolution of payment services include new forms of traded goods, globalization, free markets, technological advances, security and fraud related issues and the desire to prevent crime. Other factors that will influence future payment innovations include cost savings through efficiency and time savings, eCommerce and digital goods.

2.5.1 Single Euro Payment Area

The countries in the euro area have agreed on establishing a Single Euro Payment Area (SEPA) by the year 2010. SEPA payment instruments are account-based payment methods. SEPA is aimed unifying payment systems in the euro currency area. This means harmonizing payment technologies by adopting common standards and committing participants to a roadmap whereby the fully functional SEPA infrastructure will be ready by the end of 2010. January 2008 has been set as the desirable date for national SEPA implementation, under which consumers and businesses will be offered the chance to use the pan-European SEPA instruments for national payments as well. (Towards a single euro payments area – third progress report, 2004).

The pan-European payment instruments developed within SEPA are credit transfers (Credeuro), the pan-European direct debit (PEDD) and cards (EMV). The banking sector's cooperative institution in charge of coordinating the development of SEPA is the European Payments Council. The regulative bodies responsible for the governance of SEPA can be divided into European-level and national-level institutions. The regulative bodies at European level are the European Commission, the Eurosystem and the European Central Bank. At national level they include ministries of finance and legal affairs, the national central banks (eg the Bank of Finland) and other national authorities such as the competition authorities.

According to an article published in the Finnish newspaper Kauppalehti, Carlos Rodriguez, General Manager of MasterCard in the Benelux and Nordic countries, believes that euro area banks will not create and adopt new SEPA standards for national debit cards,

instead replacing bank cards with the existing Visa Electron or Maestro cards. According to Rodriquez, there are 300 million Maestro cards in use in Europe at present. (Sahiluoma, Kauppalehti, 30 November 2005).

The construction of SEPA will be costly, and to commit all stakeholders to these investments SEPA will need to present a valid business case. Consumers, in particular, appear to respond to factors other than efficiency.

2.5.2 Development of electronic and other technological standards

Future trends will also be affected by the development of electronic and technological standards. These standards are typically aimed at enabling payment instruments to be more universally usable. The development of electronic and other technological standards are usually designed to encourage a change from paper-based to fully electronic invoicing systems. The latter are considered to be cheaper, more efficient and faster. Advances in data communication enable the transmission of more information in transaction messages. This may facilitate the linking together of invoice and payment messages, which in turn could be handled as e-invoices. Electronic invoices are easier to archive and analyse, and they could include more payment-related information, such as warranty information. New standards will also foster more secure payment systems for the more effective prevention of fraud.

The opportunities presented by the Internet and mobile network infrastructure include increased 24/7 use, which in most cases means self-service and location independence. As the Internet can be seen as a distribution channel for digital goods and one of the sales channels for physical goods, new payment instruments are necessary to satisfy consumer demand arising from this development.

The development of electronic and technological standards needs to take into account consumers' needs and user experience. In developing standards it is therefore important to understand consumer behaviour.

2.5.3 New pricing models

Based on economic theories, new pricing models for payment instruments should change consumer behaviour towards more cost-efficient payment methods and instruments. Thus, new pricing models should reflect the costs of producing payment services. This will give consumers the opportunity to select the cheapest and thus the most efficient payment

instruments by not having to pay for other consumers' use of costlier instruments. Currently, costs are not visible to consumers due to cross-subsidization and bundling services into packages. On the other hand, consumer research on payments indicates that consumers also react to convenience and other similar factors in addition to efficiency and cost factors. This presents a significant challenge to new pricing models.

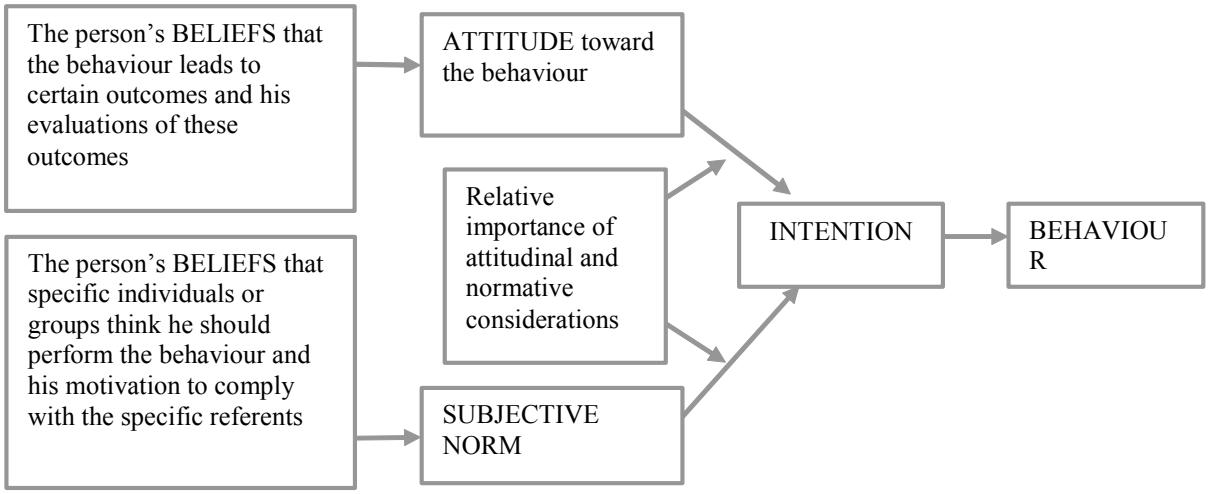
3 Theoretical background

This chapter presents our background theories and their use in the present study. The Theory of Reasoned Action and the Theory of Planned Behaviour by Icek Ajzen and Martin Fishbein are used as background theories for behavioural change. Diffusion of Innovations theory by Everett M. Rogers is used as the background theory for adoption of new innovations. These theories were chosen on the basis of previous research. By combining theories that study human behaviour with a theory about innovation attributes, we achieved a systematic approach for the analysis of abstract possibilities for changing payment behaviour. It should be noted that payment is a secondary behaviour that is triggered only after a decision has been made to purchase or hire something.

3.1 The Theory of Reasoned Action

The Theory of Reasoned Action (TRA) assumes that people think before they act. According to TRA, people's beliefs and attitudes influence intentions and behaviour. Beliefs and attitudes are further divided into personal beliefs and attitudes and beliefs and attitudes influenced by social pressures. Socially influenced attitudes are referred to as subjective norms, since they deal with perceived perceptions. TRA focuses on understanding human behaviour, not predicting it. Figure 8 depicts the concepts through which behaviour can be explained according to the theory (Ajzen & Fishbein 1980, 6–8).

Figure 8. The Theory of Reasoned Action

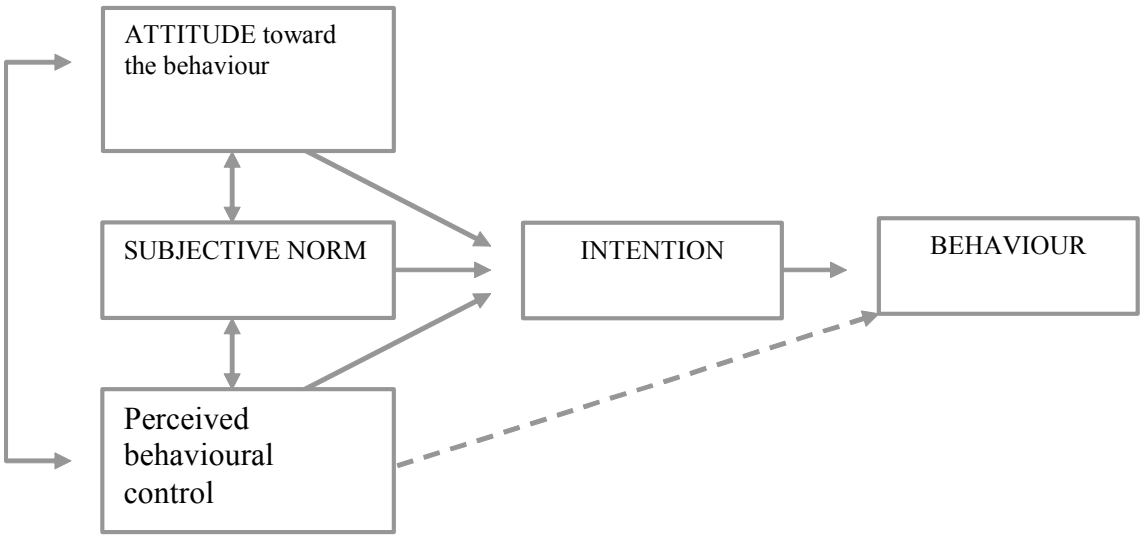


According to TRA, people's behaviour can be studied and understood by breaking down the behavioural process into the concepts shown in Figure 8.

3.2 The Theory of Planned Behaviour

The Theory of Planned Behaviour (TPB) is an extension of the Theory of Reasoned Action. Here, a third determinant, perceived behavioural control, is added to the model, as is evident from Figure 9. The concept of perceived behavioural control refers to an individual's perceptions of how factors outside their control can influence the success of the intended behaviour (Ajzen 1988, 132).

Figure 9. The Theory of Planned Behaviour



The most important concept of TPB in relation to this study is the claim that attitudes influence intentions, which in turn influence behaviour. This is the same as in the Theory of Reasoned Action. Since both theories include this claim without modifications, it can be considered as the most relevant part of these theories. Therefore, for the purpose of the present study the two theories are simplified to include only beliefs, attitudes and intentions.

3.3 Diffusion of Innovations theory

Everett M. Rogers' Diffusion of Innovations theory suggests four main elements for the diffusion process, five adopter categories and five attributes of innovations. The five perceived attributes are the most relevant part of the theory for the present study and hence are described in greater detail below. Diffusion of Innovations theory also identifies three main types of innovation decision: 1) optional, where the choice to adopt or reject an innovation is made individually by individuals; 2) collective, where the choice to adopt or reject is made by a consensus; and 3) authority-based (Rogers 2003).

Diffusion is defined as the process whereby an *innovation* is *communicated* through certain *channels* during a *time* period to members of *a social system* (Rogers 2003, 11). Innovation, communication channels, time and a social system are the four main elements of the theory.

The five adopter categories used in Diffusion of Innovations theory are innovators, early adopters, early majority, late majority and laggards (Rogers 2003, 280). These categories are used to describe the members of a social system according to their degree of innovativeness measured by the time of innovation. The degree of innovativeness of an individual reflects the probable rate (time) of adoption of a new innovation in respect to other members of the social system. For example, an early adopter is more likely to start using a new innovation than somebody in the late majority category.

The perceived attributes of innovations as defined by Diffusion of Innovations theory are relative advantage, compatibility, complexity, trialability, and observability. Relative advantage, compatibility and complexity are discussed in more detail later in this chapter. Trialability of an innovation is the degree that a person may experiment and try an innovation before actually adopting it. The perceived trialability of an innovation is positively related to its rate of adoption (Rogers 2003, 258). The fifth perceived attribute of innovations, observability, refers to how easily an innovation can be observed by potential adopters: is it visible or hidden, can the potential adopter be stimulated to adopt it from a stranger by simply observing it. The more observable an innovation is, the faster the adoption rate (Rogers

2003, 258). These five attributes account for 49% to 87% of the variation in the rate of adoption of innovations, according to Rogers. The rate of adoption is a numerical indicator of the relative speed at which a social system adopts an innovation (Rogers 2003, 221). It should be noted that not all innovations are adopted or diffused through a social system.

3.3.1 Relative advantage

Out of the five perceived attributes of innovations, the relative advantage of an innovation is the strongest predictor of its rate of adoption (Rogers 2003, 233). Relative advantage refers to how much better a new innovation is perceived to be by adopters compared with the status quo. The relative advantage is different for different types of innovation. It can be an economic, social or time-related advantage, or anything else perceived as important by the individual. The perceived relative advantage of an innovation can also be different between different adopters. One objective of the present study was to identify the perceived relative advantages of current and possible future payment methods and instruments. The findings are discussed in Chapter 5.

3.3.2 Compatibility

Compatibility is the hardest attribute to understand and also the second most important. In Diffusion of Innovations theory, compatibility refers to how a new innovation fits the *existing values*, *past experiences* and *needs* of potential adopters (Rogers 2003, 240). Basically, compatibility in this context can be thought of as the measure of behavioural change necessary to adopt a new innovation. This includes ethical values, learning new skills, doing things in new ways, and acquiring and using new devices and technology. The less compatible an innovation is with current behaviour, the slower the adoption rate. During the focus group interviews data was collected on the importance of compatibility for the adoption of new payment methods and instruments.

3.3.3 Complexity

Complexity refers to how difficult an innovation is perceived to be to understand and use by a potential adopter (Rogers 2003, 257). The more complex an innovation is, the less likely it is to be adopted by a social system. Complexity is the opposite of simplicity.

3.4 Application of the theories in the present study

For the present study, the Theory of Reasoned Action and the Theory of Planned Behaviour were simplified into three core concepts: beliefs, attitudes and intentions. These are dependent on each other and influence behaviour, and more specifically changes in behaviour. The questionnaires used in the focus group interviews were designed as suggested by Icek Ajzen in his book 'Understanding Attitudes and Predicting Social Behaviour'.

From Diffusion of Innovations theory, the innovation attributes were selected for use; all other parts of the theory were excluded. More specifically, the innovation attributes of relative advantage, compatibility and complexity were used as concepts to formalize results from the data that was collected and analysed.

4 Empirical study

The purpose of the empirical phase of the present study was to collect data on consumer payment behaviour in order to identify factors that influence this behaviour. In addition, information was collected on current payment methods and instruments used by Finnish consumers and used mainly as background information.

4.1 Methodology

There are many ways to collect research data. The three most common methods are literature searches, interviews and surveys. Interviews and surveys are used to collect empirical data, whereas literature searches are not. Interviews are considered as qualitative methods and surveys as quantitative methods. Qualitative methods are better suited to topics of an exploratory nature, whereas quantitative methods are used to gather data for statistical analysis. In many cases, qualitative research requires further quantitative research for validation due to the small number of participants relative to the overall population involved. Qualitative research can also be used as preparation or pre-study for a quantitative survey, for example to test questionnaires.

The present study is qualitative research and forms part of a larger study of Finnish payment habits organized by the Bank of Finland. Focus group interviews were selected as the method for collecting the qualitative data. This method was selected because of the exploratory nature of the study. In conjunction with the qualitative study, a quantitative study was conducted by Tomi Dahlberg and Anssi Öörni, in which a survey was sent to 2,000 Finnish consumers. The questionnaire designed by Dahlberg and Öörni addressed the same research questions as the present study. These two studies complement each other and certain comments about the questionnaires used during the focus group interviews were taken into account in the design of the quantitative survey questionnaire.

4.2 Definition of a focus group interview

Focus group interviews are structured, in-depth group interviews that are used to collect qualitative data. A focus group is mostly used as a preliminary research technique to explore people's ideas and attitudes. The number of participants suggested for focus group

interviews ranges from 4 to 12, with 6 to 8 being the average, according to the literature. The interviews last generally between half an hour and two hours. The focus group technique can be divided into three phases: the planning phase, the conducting phase, and the analysing and reporting phase (O'Donnell 1988).

4.3 Planning phase

During the planning phase the research question(s) to which answers are sought are defined. The population to be interviewed is then decided, and guidelines developed for the interview. The planning phase is important to ensuring successful interviews, and sufficient time and effort should be put into this phase (O'Donnell 1988). After the planning phase is completed the structure of the interviews should be clear, the level of involvement by the moderator has been decided and the group participant demographics and the sizes and number of group interviews to be held are known.

4.3.1 Research questions

The data collected during the empirical part of the study addressed the research questions, namely:

- Which factors influence Finnish consumers to change their payment behaviour and adopt new payment instruments?
- What kind of beliefs and attitudes do consumers have towards their account number?
- How important is the compatibility factor?
- How do consumers perceive the cost of paying?
- What is the attitude of consumers towards the explicit and transparent pricing of payments?
- What are consumers' expectations of payment instruments in the future?

4.3.2 Focus group demographics

We decided to conduct six focus group interviews. The group demographics were defined according to the consumer life cycle model, where age was the most significant factor. It has been found in previous research that gender is not an influencing demographic factor of payment behaviour. The following demographics were decided for the six focus group interviews:

1. 20-year-old boys who had graduated from high school.
2. 30-year-old lawyers without children. Lawyers were chosen because they are generally not technically oriented.
3. Mothers (average age 30) who had one to two children under the age of six.
4. Mothers over 40 whose children had already moved away from home.
5. Active retired people, where active implies that they travel regularly.
6. A group of 30-year-olds, this time in Lappeenranta, to find if the Helsinki area differed from the rest of Finland. This group corresponded to the lawyer group, since they did not have children.

The three groups of 30-year-olds were chosen to investigate how children and location affect payment behaviour. A description of the participants is presented in Appendix 1.

4.3.3 Interview guidelines

The background theories (Diffusion of Innovations theory, Theory of Reasoned Action, Theory of Planned Behaviour) were used to design the interview guidelines and the questionnaires to be used during the interviews. The interviews themselves were divided into six main topics that guided how they were conducted. These were payment behaviour, account number, changes in payment behaviour, compatibility, cost of paying and wishes for the future.

Before each topic the members of the group being interviewed were asked to fill out a questionnaire in order to compare group preferences and to introduce the interviewees to the topic by making them read topic-related questions. The questionnaires used the seven-level Osgood scale and were designed according to Ajzen and Fishbein's suggestions as described in their book 'Understanding attitudes and predicting social behaviour'. The complete questionnaires are presented in Appendix 2.

The first topic for discussion was 'Payment behaviour'. The goal here was to collect information on which payment instruments the consumers that attended the focus group interviews were currently using, and why they had chosen those instruments. Information was also collected on how different situations affect payment instrument choices. The different situations included examples such as purchases at a grocery store, at a kiosk, while travelling abroad, payment of invoices and payments to friends or relatives.

The second topic was 'Account number'. The goal here was to discuss different possible future account number designs and consumer interest in these issues. For example, should account numbers be portable and personal, and would consumers find value in being able to keep the same account number even when switching from one financial institution to another, in the same way as one can currently port over a mobile phone number? Should account numbers have a similar format to email addresses, eg firstname.surname@city.bank.com? These issues will arise if consumers in the future use self-service payment instruments more than today and commit direct account-based payments more than today.

The third topic for discussion was 'Changes in payment behaviour'. The goal here was to collect data on changes in payment behaviour and on the criteria that affected such changes. The transfer to online banking was used as an example of a past behavioural change. Relative advantages such as passing queues, archiving and international acceptance were also discussed during the interview on this topic.

The fourth topic for discussion was 'Compatibility'. The goal here was to collect information on what compatibility means to consumers, and how compatibility affects consumers' choices relating to payment instruments. Questions were asked such as 'How do you feel about learning new skills or changing your routines in order to start using a new payment instrument?'

The fifth topic for discussion was 'The cost of paying'. The goal here was to collect information on how consumers perceive the pricing of payment instruments in separation from the goods being purchased, eg as an add-on/rebate to a purchase – dependent on the selected payment instrument. Payment costs detected by consumers were also investigated in connection with this topic. Another goal during the discussion was to discover whether or not consumers are conscious of payment costs and the differences in costs between different payment instruments.

The sixth topic for discussion was 'Wishes for the future and international payments'. The goal here was to identify consumers' wishes for the future and collect their attitudes towards the euro payment area. During the interviews consumers were asked to speak about future developments that they were aware of and suggestions and expectations for payment methods that they found useful and would like to use.

4.4 Conducting phase

Once the planning phase is completed, the focus group interviews can begin. During the interviews, the interviewer acts more as a moderator who guides the group discussions rather than actually asking the questions. The moderator should keep the group talking about the topic and only ask questions to clarify statements that have been expressed by the group participants (O'Donnell 1988). Calder points out that serial questioning must be avoided and the moderator must encourage interaction between participants, which is a major virtue of the technique (Calder 1977).

The interviews were conducted between August and October of 2005. Five interviews took place in Helsinki and one in Lappeenranta. They lasted between 45 and 90 minutes each and were conducted in Finnish. Each of the six focus groups had a different demographic background that linked the participants together. Five of the six groups had 4–6 participants. One demographic group was interviewed in two separate interviews with only three participants in total. All interview participants were given two movie tickets as compensation for their time and effort.

4.5 Analysis and reporting phase

The third phase is analysis and reporting. The focus group technique produces a lot of data, analysis of which should be based on transcripts. It is important that the written report include quotes and interpretations of these quotes by the analyzer of the data collected (O'Donnell 1988).

This report forms the reporting phase of the focus group interviews and includes the analysis of responses. Five interviews were recorded and written transcripts have been made based on the interviews. For the active retirees group, the interview was conducted in two separate interviews and only notes were taken.

5 Analysis of focus group interviews

The empirical data was collected and analysed in Finnish; only the results quoted in the present study were translated into English.

5.1 Analysis of focus group participants

The six focus group interviews were conducted with a total of 27 participants between the ages of 18 and 73. There were 10 males and 17 females. All groups consisted of participants who knew each other. The demographics were defined during the planning phase as follows: 20-year-olds, 30-year-old lawyers without children, 30-year-old mothers of small children, 30-year-olds who live outside the Helsinki metropolitan area, mothers aged over 40 whose children have moved away from home, and active retirees who travel regularly.

The group of 20-year-olds had four male participants aged 18, 18, 19 and 20 years. One was still in high school, while the other three had already graduated. Only one had moved away from home and therefore received more bills than the three others. Only one had a job. The rest were students. They all shared a common interest in snowboarding. This had meant them travelling abroad without their parents at a relatively young age.

The 30-year-old lawyer (no children) group had one male and three female participants aged 28, 29, 30 and 32. All participants had graduated as lawyers and worked in positions consistent with their education. They all lived with their spouse, but did not have children. The participants did not work together, but knew each other from university.

The Lappeenranta group consisted of four men and two women aged 26, 27, 29, 30, 30 and 31. The participants knew each other from work and some already from university. None were supervisors or superiors to each other, which might have hindered the expression of opinions.

The group of 30-year-old mothers had four participants aged 29, 30, 30 and 30. All had one or two children under the age of 6 years. The participants had different educational and professional backgrounds but knew each other since childhood. All four mothers worked, although one was currently on maternity leave.

The group of mothers aged over 40 had six participants aged 55, 55, 56, 57, 58 and 65. All had more than two children over the age of 18 who had moved away from home. The participants had different educational and professional backgrounds and one had retired. They had known each other for several years and were friends.

The retiree group consisted of only three participants aged 70, 72 and 73. Two of these were a married couple and one was a widow. The couple and the widow never met, since the interviews were conducted separately. The participants travelled actively and were young in spirit. It was very difficult to find participants for this group – recruitment was attempted via senior houses and associations.

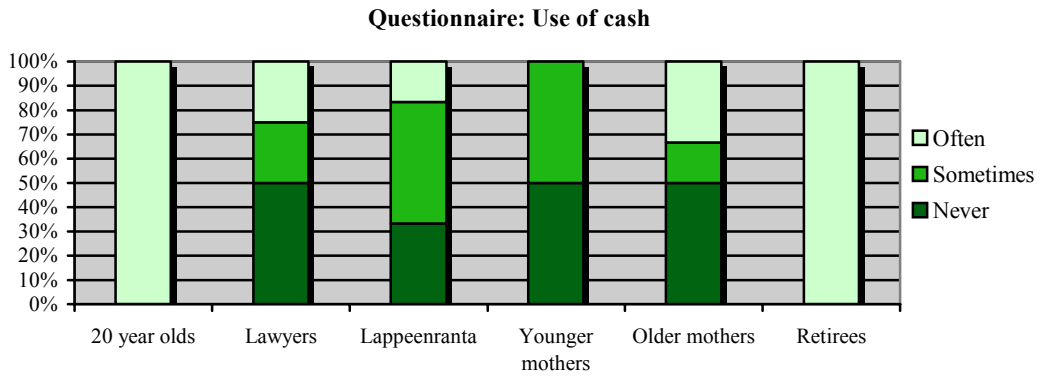
The participants in the focus group interviews matched the demographic backgrounds defined during the planning phase. The only group that fell short of the ideal was the retiree group, since the interviews were not conducted as a focus group interview and had less than 4 participants. However, the data collected from the retiree group questionnaires is consistent with the other questionnaires and the comments made during the interviews were insightful. Other limitations on focus group participants included people with lower income and lower educational backgrounds, since the participants were generally middle class and well educated. These factors were not defined as demographic factors during the planning phase. Future studies should address the impact of wealth and education.

5.2 Payment behaviour

The first topic of the focus group interviews was 'Payment behaviour'. Before discussion of the topic the participants were asked to fill out a questionnaire on their current payment behaviour, intentions for change in 3 months and in 5 years. The questionnaire had four payment instruments that are used to pay for purchases: cash, debit cards, credit cards and mobile phone payments. Preferences were also asked between five different instruments for paying invoices: payment over the counter at a bank branch, via online banking, direct debits, mobile banking and e-invoices. The questionnaire had a seven-step scale from -3 to +3. For the analysis the scale was condensed into the following three categories for current payment instrument use: never (-3, -2), sometimes (-1,0), and often (+1, +2, +3).

According to the answers to the questionnaires, as seen from Figure 10, both the 20-year-olds and the retirees used cash *'often'* as a payment instrument. The lawyers, younger mothers and the Lappeenranta group used cash less than the other groups. The older mothers showed most variation from *'never'* to *'often'*. All the answers in this group were different.

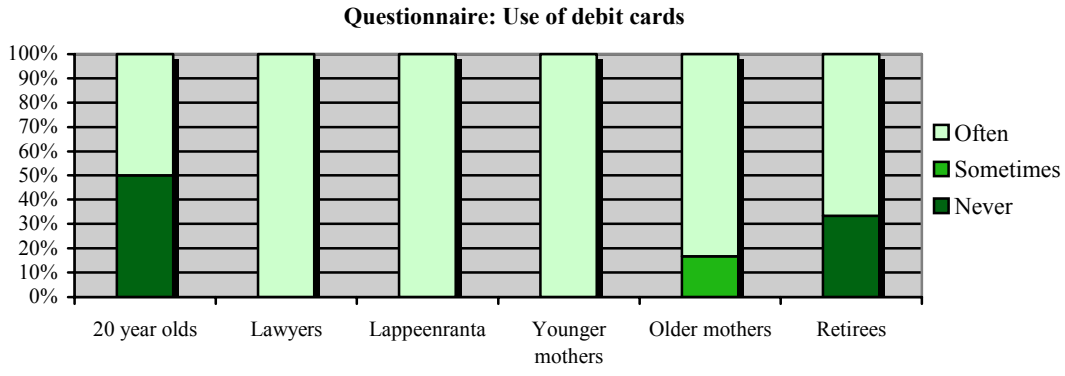
Figure 10. Use of cash by focus group participants



The three 30-year-old groups used cash less than the other three groups. We concluded that this finding could be related to some extent to the changeover from the Finnish markka to the euro. At that time most of the 30-year-olds had been finishing their studies (at university) and embarking on their professional careers. We concluded that this meant more income and more expenses and changes in general in their daily lives. This overall behavioural change would most likely have made the (by now) 30-year-olds more receptive to the marketing of debit cards pursued by banks at the time of the changeover.

The majority in the focus groups indicated their use of debit cards as *'often'*, as is evident from Figure 11. During the interviews we discovered that all the 20-year-olds used Visa Electron and none had a traditional debit card. Since Visa Electron was not an option available in the questionnaire, half of this group indicated their use of debit cards as *'often'* and the other half as *'never'*. Actual use is 'often' for the entire 20-year-old group, since online debit cards and debit cards are treated as debit card instruments for the purpose of the present study.

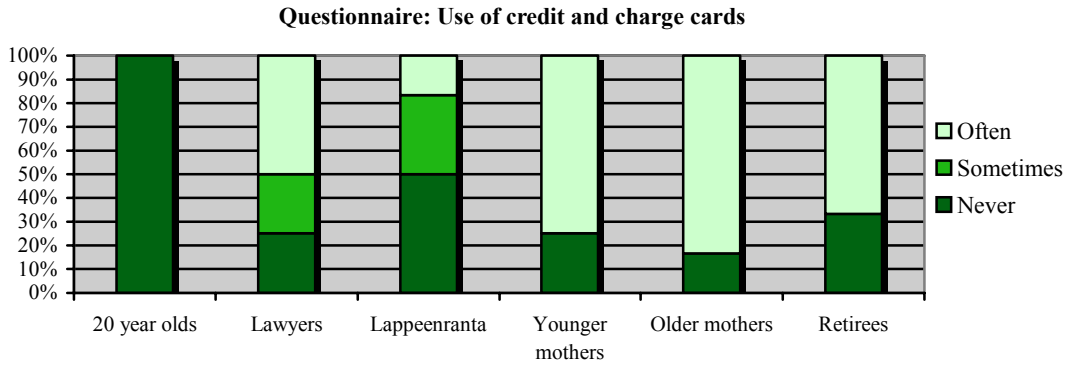
Figure 11. Use of debit cards by focus group participants



The use of online debit cards and debit cards can be a demographically differentiating factor, since Visa Electron cards have been available only since 2001. We concluded the data collected during the interviews indicated future generations may prefer online debit cards to offline debit cards. One participant in the retiree group indicated the use of debit cards as *'never'*, and one older mother as *'sometimes'*. During the interview we discovered that the retiree did not have a debit card for two reasons: 1) because her husband had one, and 2) because nobody had marketed a debit card to her. This seems to indicate that some payment instruments are shared by two persons or by a household.

The use of credit cards varied both between and within focus groups, as is evident from Figure 12. None of the 20-year-olds had a credit card. The lawyers and Lappeenranta group were evenly distributed between *'never'*, *'sometimes'* and *'often'*. The younger and older mothers used credit cards *'often'*, with only one participant in either group *'never'* using them. Two of the retirees used a credit card *'often'*, while the wife of one participant indicated during the interview that she *'never'* used a credit card, again because her husband had one.

Figure 12. Use of credit and charge cards by focus group participants

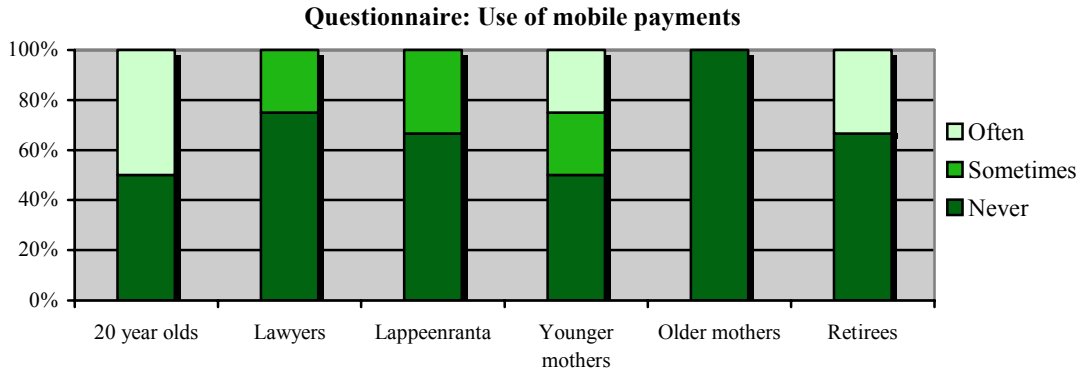


The variation in the use of credit cards is not surprising, since prior studies (eg FBA) suggest a credit card is not necessary for daily payment behaviour. Furthermore, a credit card is not usually used as the primary payment instrument, but as an additional instrument in special situations, for example when travelling or for purchases made on the Internet. We concluded that, in contrast to the other 30-year-olds, the younger mothers probably had more use for credit due to the additional expenses of raising children. The retirees were classified as active based on their travelling habits, which would seem to result in their needing internationally usable payment instruments such as credit cards.

The use of a mobile phone for payments varied greatly, as is evident from Figure 13. One of the retirees answered *'often'* in the questionnaire regarding the use of mobile phone

payments, but during the interview said that she *'never'* used a mobile phone for payments and saw no need to develop payment instruments for mobile phones. The real use by retirees is therefore 100% *'never'*.

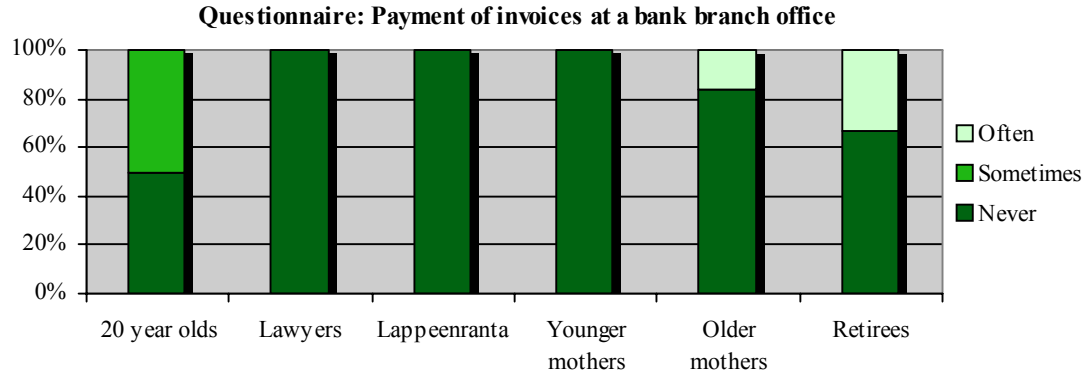
Figure 13. Use of mobile phone payments by focus group participants



Our conclusion from this result was that a generation gap exists between the focus groups. The retirees and the older mothers *'never'* use mobile phone payments, whereas some of the 30-year-olds have started to use them and half of the 20-year-olds use mobile phone payments *'often'*.

Only four interviewees visited the bank to pay bills and invoices, and none of the thirty-year-olds did so, as is evident from Figure 14. This is also consistent with the results of the Finnish Bankers' Association survey results (Survey on saving and use of credit, 2005).

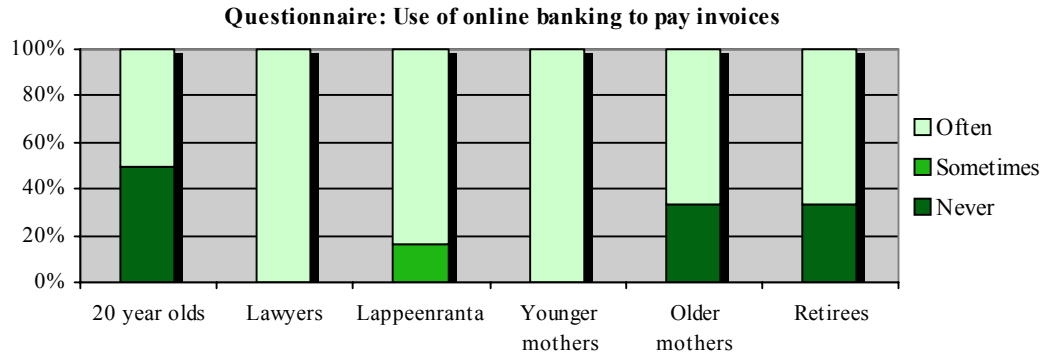
Figure 14. Payment of invoices at a bank branch office



Banks invested heavily in the marketing of self-service banking during the banking crisis in the 1990s. It would seem the effort invested in this marketing has paid off, with a change having occurred in payment behaviour in favour of self-service banking. The results of the present study confirm this change.

Online banking was used by the majority of participants *'often'* to pay invoices, as is evident from Figure 15. Only three participants did not use online banking. Two were from the 20-year-old group (in practice mostly aged under 20) and did not yet receive invoices. They therefore had no need to use online banking. The third was a retiree who did not know how to use a computer. She did, however, use the automated payment machines located at her bank branch instead of going to the counter and interacting with bank staff.

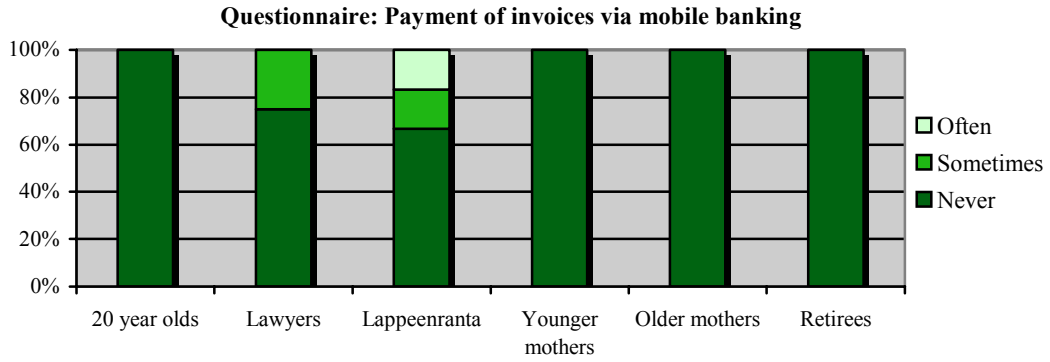
Figure 15. Payment of invoices via an online bank



Based on the present and previous studies, it is evident there has been a diffusion of online banking in Finnish society. Once again, most of the variation was between the 30-year-olds and the other three groups. We concluded that this was explained by the banks' active offering of special service packages for free to customers under 26 years of age when online banking was introduced in the 1990s. The present 30-year-olds were the first consumers to be targeted by this marketing. Once again it would seem the banks' marketing has successfully influenced payment behaviour.

Only three participants used the mobile banking possibility, as depicted in Figure 16. This suggests that mobile banking is not common and has currently a poor rate of adoption.

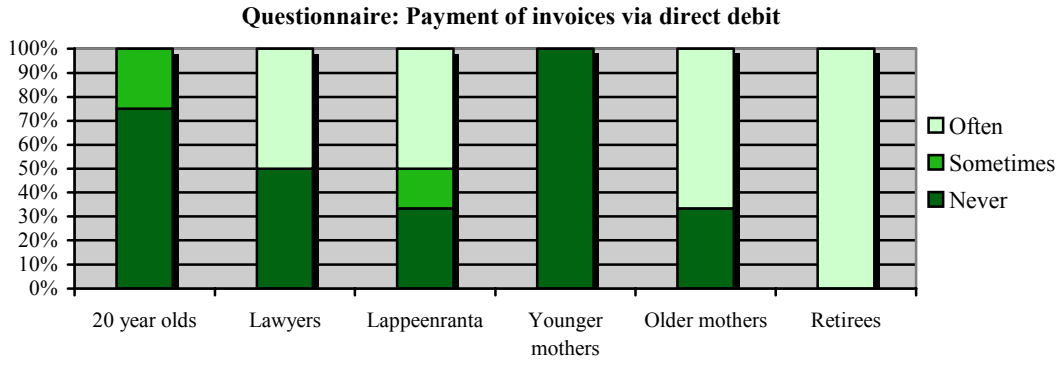
Figure 16. Payment of invoices via mobile banking



It is interesting that the three users are from the lawyer and Lappeenranta groups of 30-year-olds. We interpret this finding to mean they belong to the early adopter group identified by Diffusion of Innovations theory. Mobile banking seems to be still at the beginning of the diffusion curve.

The use of direct debits varied extensively between and within groups, as is evident from Figure 17. We are unable to offer any clear reasons for this variation. During the interviews we identified only one factor bearing on the use of direct debits, namely the monthly mortgage payments. All participants who had a mortgage loan used direct debits automatically since the banks had not offered any other payment options or schemes.

Figure 17. Payment of invoices via direct debits



According to the interviewees, banks have not encouraged the use of direct debits through marketing, and this could be a factor for the fragmented use of it in all the focus groups.

Only one of the interviewees had paid invoices with e-invoicing. We concluded that this finding could be explained by the relative novelty of e-invoicing. It seems that e-invoices have not yet been offered to consumers. Some interviewees had used e-invoicing at work. It is

currently being marketed almost solely to businesses customers, and consumer knowledge of it is therefore low.

5.2.1 Intentions

According to the answers to the questionnaires, the participants did not in general intend to change their payment behaviour within the next 3 months or the next 5 years.

> *Lappeenranta woman aged 30: 'Three months is such a short time period. I am sure I will not change my payment behaviour in the next three months – and it's hard to say what kind of systems there will be in five years.*

However, a quarter of participants indicated that they intended to reduce their use of cash within the next 3 months, and half during the next five years None of the interviewees intended to reduce their use of debit cards or online banking during the next 3 months or 5 years. With regard to mobile phone payments, mobile banking and e-invoices, no change was indicated within the next three months, but half intended to increase their use of these payment instruments within the next five years. We consider this to be consistent with the three payment instruments being rather new innovations and at the beginning of their diffusion.

Based on the focus group interviews, we found that the interviewees were generally satisfied with the current situation and therefore were not actively seeking new payment methods or instruments. In summary, therefore, we concluded that Finnish consumers seem rather passive towards changing their payment behaviour, and behavioural changes occur almost unnoticed by consumers.

5.2.2 Beliefs and attitudes

During the interviews, certain beliefs became apparent in all groups. One surprising belief was that the cash, debit card, credit card, online banking foursome is as good as it can get. None of the interviewees had thought of means to improve the current situation before they were asked about possible improvements.

The interviewees did not have any particular beliefs concerning cash or debit cards. Most interviewees surprisingly viewed debit cards as synonymous with cash.

20-year-olds, male 18: 'I use Visa Electron, because it is the same as cash to me – you have everything in the card – but if it would cost something to use a Visa Electron then I would probably go to an ATM and draw cash instead of using a card.'

This statement says a lot. Firstly, it indicates a preference for using an online debit card instead of cash. Secondly, Visa Electron is preferred because of the relative advantage of not having to go an ATM. For this user, Visa Electron and debit cards can be considered as identical payment instruments.

When asked about the use of cash, most interviewees revealed they used cash only if they were forced to do so by a lack of other payment options. The following discussion took place in the Lappeenranta group when they were asked whether or not a difficult payment system deters purchasing:

Man aged 31: 'At the Utti ice cream kiosk I often didn't buy ice cream because they didn't accept debit cards.'
Woman aged 29: 'And at the market place – peas and other small items – I often don't buy them because I never have cash and they don't accept debit cards.'

The following discussion took place in the lawyer group when they were asked if it is always possible to pay with a debit card:

Woman aged 30: 'I'm able to use a debit card most of the time. Of course, there are places that don't accept debit cards, but that's rare.'
Woman aged 29: 'If they accept a debit card I always pay with it.'
Woman aged 28: 'Except if they don't accept debit cards, then I won't buy anything, since I never have cash.'

When asked why the debit card was their preferred method, the lawyers gave the following answers:

Woman aged 30: 'You only have to pay once with a debit card.'
Woman aged 28: 'Cash is too inconvenient.'

Woman aged 29: 'You never have cash with you.'

Man aged 32: 'It's a way to save money when you don't carry cash around.'

These comments indicate that for these interviewees new payment instruments are needed for situations were the debit card is not an option. This should be taken into consideration especially when new mobile phone payment instruments are designed for micro payments. Such an instrument should not be more complex than a debit card and is not actually needed when the debit card option is available.

Cash was mostly used for payments smaller than EUR 20. It seems that most merchants who sell items costing more than EUR 20 also accept payment instruments other than cash.

Retiree, man aged 70: 'I prefer cash for purchases under EUR 20 and a debit card for purchases over EUR 20.'

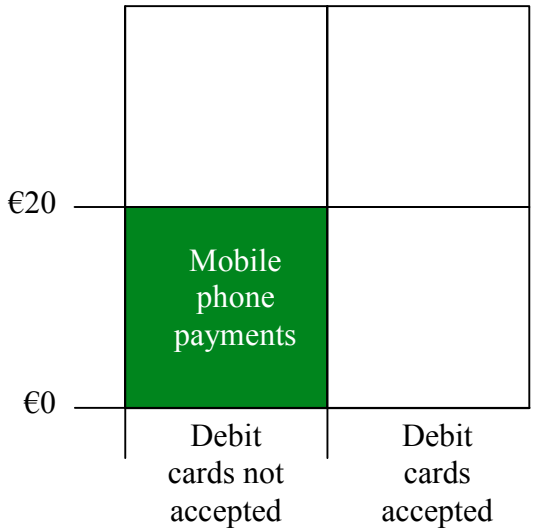
The interviewees' attitudes towards cash were quite negative, and it was considered a difficult payment instrument. On the other hand, when asked whether or not cash could be replaced, all groups felt that cash should exist and were almost terrified by the thought that cash might no longer exist. The general attitude towards debit cards was positive. All groups were satisfied with debit cards

Most interviewees believed that mobile phones would someday be used for payments, but they could not anticipate how and when. Half of the interviewees had used mobile phones to purchase ring tones or logos. The interviewees generally liked and had a positive attitude towards the Helsinki tram network's mobile phone ticketing system. Two participants had once used their mobile phones to pay for a car wash. The problem with mobile phone payments was that most of the interviewees had a company phone with which such payments are not allowed. The general attitude towards mobile phones as payment instruments was positive but also very critical. The interviewees felt that they would be happy to use a mobile phone for payments if it was easy, did not have a premium cost and there was a reason for the use of mobile phone payments instead of, for example, a debit card.

Based on the data collected during the interviews we concluded that most of the interviewees had a positive attitude towards the mobile phone as a replacement for cash. Cash was mostly used for payments of less than EUR 20. Another finding was that cash was usually used only when other payment methods such as debit cards were not accepted.

Such situations include parking, bus tickets, markets and small kiosks. Figure 18 depicts the most suitable use of mobile phone payments based on the focus group interviews conducted in this study.

Figure 18. Mobile phone payments



Another factor that needs to be taken into account when mobile phone payment services are designed is that sometimes cash is used in illegal, grey or black market transactions where income is not reported to the tax authorities. This could even be a reason why debit cards are not accepted in the first place. The mobile phone cannot replace cash in these situations. These factors together may explain why mobile phone payments have been successful in parking, public transport and other similar contexts.

During the interviews I discovered that the 20-year-olds had already needed international payment instruments since they had already travelled a lot at a young age, and they had therefore got themselves Visa Electron cards. As they reached the age that made the acquisition of offline debit cards or credit cards possible they had no need for them, since the Visa Electron was sufficient for their payment needs. The following conversation took place in the 20-year-old group regarding the Visa Electron in comparison with debit cards:

> *Man aged 21: 'I don't know why I would need a debit card anymore.'*
> *Interviewer: 'Have you all chosen the Visa Electron card instead of a debit card because it is an international card?'*
> *Man aged 18: 'Yes, and because you have to be 18 years old to get a debit card, but you can get a Visa Electron when you are 16.'*

Man aged 19: 'I also have Visa Electron because I was too young to get a debit card when I got it.'
Interviewer: 'So you prefer the Visa Electron card because you can get it at a younger age and you can use it abroad?'
Man aged 19: 'Yes.'
Man aged 18: 'It's better and you can get it at a younger age. So why would anybody want to have a debit card a few years from now?'

Visa Electron has been available in Finland only since 2001. The group of 20-year-olds are members of the first generation to adopt an online debit card before adopting a debit card or other cards. It will be interesting to see why and when they will adopt credit cards, if at all. This is a question for future research. Visa Electron cards can be used internationally and on the Internet, and yet they are also a direct debit instrument. This is interesting because none of the interviewees said that they used the credit possibility of a credit card, instead paying the complete amount invoiced at the end of each month. The attitude of the interviewees was that they do not want to be in debt, which seems to be characteristic of Finns in general in relation to all payment instruments.

This attitude is also visible in the use of credit cards. The interviewees indicated they seek credit only as a last option. This suggests the distribution of wealth and liquidity are factors that influence the use of credit and seem to be outside the consumer's control. The younger mothers generally had more credit cards and used the one-month interest-free payment period as short-term credit. This perhaps reflects the poorer financial situation of younger families with small children.

Lawyer, woman aged 30: 'I use a credit card, but only in a way where I always know how much I have used it so that I am able to pay the complete bill at the end of the month.'

Credit cards were used mostly during travel abroad. Most of the interviewees felt that a credit card was necessary for travelling abroad for reasons of security and protection in case of emergencies or unexpected events.

Lappeenranta, woman aged 29: 'No, you can't cope with only a domestic debit card. You have to have a credit card, for example if you're travelling abroad.'
Lappeenranta, man aged 31: 'In Finland you can manage by using only a debit card.'
Retiree, woman aged 72: 'I wouldn't have a credit card if I could use my debit card abroad when travelling.'

Most interviewees felt that purchases with a credit card on the Internet were dangerous and they had a negative attitude towards this practice. Even so, they purchased flight tickets via the Internet because it saved them time and money. They believed that credit cards are vulnerable to fraud, and that such fraud occurs often. Compared with other payment instruments this could be a justifiable belief. They also believed that shopping on the Internet is in general not safe – especially with credit cards – although none had personally experienced fraud as a result of online shopping. Almost all the interviewees had purchased flight tickets, books, music or hotel accommodation on the Internet and were satisfied with the transactions. This indicates that beliefs regarding credit cards are not based on personal experience, but rather on abstract impressions.

Some interviewees felt that paying with a credit card feels like paying twice. This divided the interviewees, since others felt that receiving an invoice for all purchases at the end of the month was better than having them charged one by one. The American Express bonus point system was an incentive for many to purchase expensive items with American Express in order to receive bonus points.

Lawyer, woman aged 28: 'I have an American Express card and you get bonus points if you purchase expensive items with it like golf clubs or furniture. I use my American Express for all expensive purchases.'
Lawyer, woman aged 29: 'You use it to gather bonus points and not for credit or the interest free payment time?'
Lawyer, woman aged 28: 'Exactly. Not for the payment time – I actually hate that characteristic of credit cards. It's annoying to see how the invoice accumulates.'
Lawyer, woman aged 30: 'You have to pay it twice then – first it hurts when you use the credit card in the store, and then later you receive an invoice.'

Lawyer, woman aged 28: 'Yes, and then you can see all the things you spent your money on – I hate it. A bank statement is much better, because you don't have to check it so carefully.'

A contrasting comment was also made in the Lappeenranta group:

Lappeenranta, woman aged 30: 'I charge business travels to my Visa so that the money doesn't go right away from my bank account.'

The interviewees believed online banking to be safe and efficient. We concluded that this belief reflected an overall trust in Finnish banks and their integrity. It can be stated that online banking has become so deeply diffused through the life of the focus group participants that its use has become self-evident and there was no sign of any negative attitudes or any intention for changes in behaviour.

Mobile banking was believed to be expensive and difficult to use, and therefore many had not even tried it. It was felt to be useless, since the probability that people would carry invoices and Internet banking passwords on their person was considered very low.

The interviewees did not have very much information on direct debits or e-invoicing and therefore did not indicate any specific beliefs regarding these. When filling in the questionnaires, someone in each group asked what e-invoices were, and the moderator had to inform them, since none of the other participants were able to.

Older mothers, woman aged 65: 'I don't even know what this e-invoice is?'
All of the rest of the group laughed.
Older mothers, woman aged 55: 'Is the e-invoice the payment offered on some websites?' (Referring to e-payments)

Younger mothers, woman aged 29: 'What is an e-invoice?'
Younger mothers, woman aged 30: 'Isn't it an invoice that is sent by e-mail?'
Younger mothers, woman aged 29: 'Some mobile phone bills are sent as an e-invoice or something. Is this the same?'

Lappeenranta group, woman aged 30: 'What is an e-invoice? Is it an invoice that is received electronically?'

These comments indicate a deep confusion related to e-invoices. We concluded that this may have been because of the 'e' in e-invoicing, which generally causes people to shy away if they are not comfortable with the technology, or alternatively because the focus group participants were poorly informed on what e-invoicing was. Many interviewees were worried that if the invoices were sent to their online bank they might go unnoticed, and asked whether email alerts would be available. Based on the lack of knowledge of e-invoicing displayed by the interviewees, it would seem the invoicing parties will need to invest in educative marketing to ensure adoption of this instrument. At the time the study was conducted e-invoicing was generally still marketed by the banks to corporate customers only.

5.3 Account number

The account number topic is divided into three subtopics: 1) the ability to keep the same account number when changing banks, 2) the format of the account indicator, and 3) beliefs regarding account numbers.

The interviewees had many different personal reasons for wanting to keep their current bank account number(s) when considering a change of bank:

Lawyer, woman aged 30: 'It would be good if there was a reason for answering the questionnaire.'

Lawyer, woman aged 28: 'Yeah, because, for example, she answered the question 'would you like to keep the same account number' as 'absolutely', because she has a short account number, and I answered 'don't care', because mine is so long that I can't remember it anyway.'

Lappeenranta, woman aged 29: 'It would generally be nice to keep my account number if I was to change banks and I would like to keep it if possible, but it's not a reason not to change banks.'

Lappeenranta, man aged 30: 'My own account number is nice, because I remember it by heart. Still, it's not a reason not to change banks. You learn. I kind of like how you

learn numerical user names. And anyway, you don't use it, I mean the account number, so much.'

Retiree, woman aged 73: 'I would like to keep my bank account number because it is my birthday – even my husband remembers it. I didn't allow the bank to change it when they requested.'

Yet, none of the interviewees indicated that losing their account number would be an obstacle to a change of bank. The interviewees who definitely wanted to keep their account number had 'easy' numbers: for example, short numbers or their birthday.

The answers to the questions about the format of account identifiers showed significant variation. Yet, during the interviews, interviewees in all groups indicated that they like the current numerical form of account numbers.

Layer, man aged 32: 'I think it's better with numbers only, because when you think about usernames and passwords, etc., you get them everywhere and you never learn them.'

There were surprisingly strong beliefs that it is possible to commit fraud with account numbers. The interviewees had very little information on the purposes their account number was actually used for. Their attitude towards using account numbers was positive, and most saw no need for change. However, most also felt that account numbers should be kept secret.

Lappeenranta, woman aged 29: 'I wouldn't like my bank account number to be public information. I don't know why.'

Lappeenranta, woman aged 30: 'I think of it as something private. Even though there's no risk, you still think of it as something not to be spread around.'

Lappeenranta, man aged 27: 'Another issue is how good the security of banks is and how much you trust it – if something can be done with the account number – well then it's not good to pass it around everywhere.'

We concluded that this finding should be taken into account when analysing the quantitative survey results. It became evident that the answers to the questionnaires that were filled out during the focus group interviews were a poor reflection of actual behavioural wishes and intentions. The interviewees indicated that they did not feel strongly about these issues even though they answered some questions with *'agree strongly'* simply because they thought it would be nice to be able to keep the same account number.

5.4 Changes in payment behaviour and compatibility

When interviewees were asked to describe previous payment behaviour changes we discovered that they perceived they had changed their behaviour on a whim usually triggered by cost savings, time and place independence, time savings or force factors. This perception seems to be very different to the reality, where clearly identifiable reasons exist that have resulted in the change of behaviour. The already occurred behavioural change to online banking was discussed in all focus groups. The surprising result was that all interviewees felt that they had adopted online banking on their own volition after it was introduced. We found this surprising, as online banking was not compatible with previous behaviour, being self-service on the Internet using new devices. New skills had to be learned, and new behaviour adopted. Banks implemented aggressive pricing models that made the use of online banking cheaper, and it was forcefully marketed. The result was the diffusion of online banking through Finnish society. This past behavioural change indicates that compatibility is not necessary where there are strong relative advantages. However, without banks' use of forceful and educative marketing the change would most likely have been slower.

Another change in payment behaviour was noticed during the analysis of the recorded interviews. The concept of money has changed. Interviewees described money with verbs such as 'went', 'came', 'goes', etc. Prior to electronic money, money was kept at home or in wallets and was experienced as a concrete 'thing'. It has now become an abstract 'thing' handled by third parties. This development is related to the diffusion of electronic money.

5.5 Cost of payments

The focus group participants had very little real information on the cost of payments. They had many beliefs about what the costs could be, but no actual knowledge. Surprisingly, they were even unclear about the cost of payment instruments that they used. These included cash withdrawals, annual payments and so forth. It even seemed that the participants had a

clearer picture of the costs on merchants than of their own costs. The only issue they had clear knowledge of was American Express bonus points. American Express marketing had clearly been absorbed by the interviewees, and the bonus points were the reason for using the card. This indicates that consumer payment behaviour can be influenced by pricing, since bonus point systems can be thought of as discounts. Attitudes towards premiums and separate fees for payments were extremely negative. On the other hand, attitudes towards discounts for using certain payment instruments were positive. According to the interviewees, the discount can be as small as 10 or 50 cents if the payment instrument is already in use, ie in the wallet. If, however, in the case of a completely new instrument the issue is more complex, and interviewees could not indicate how large the discount would have to be.

5.6 Wishes for the future

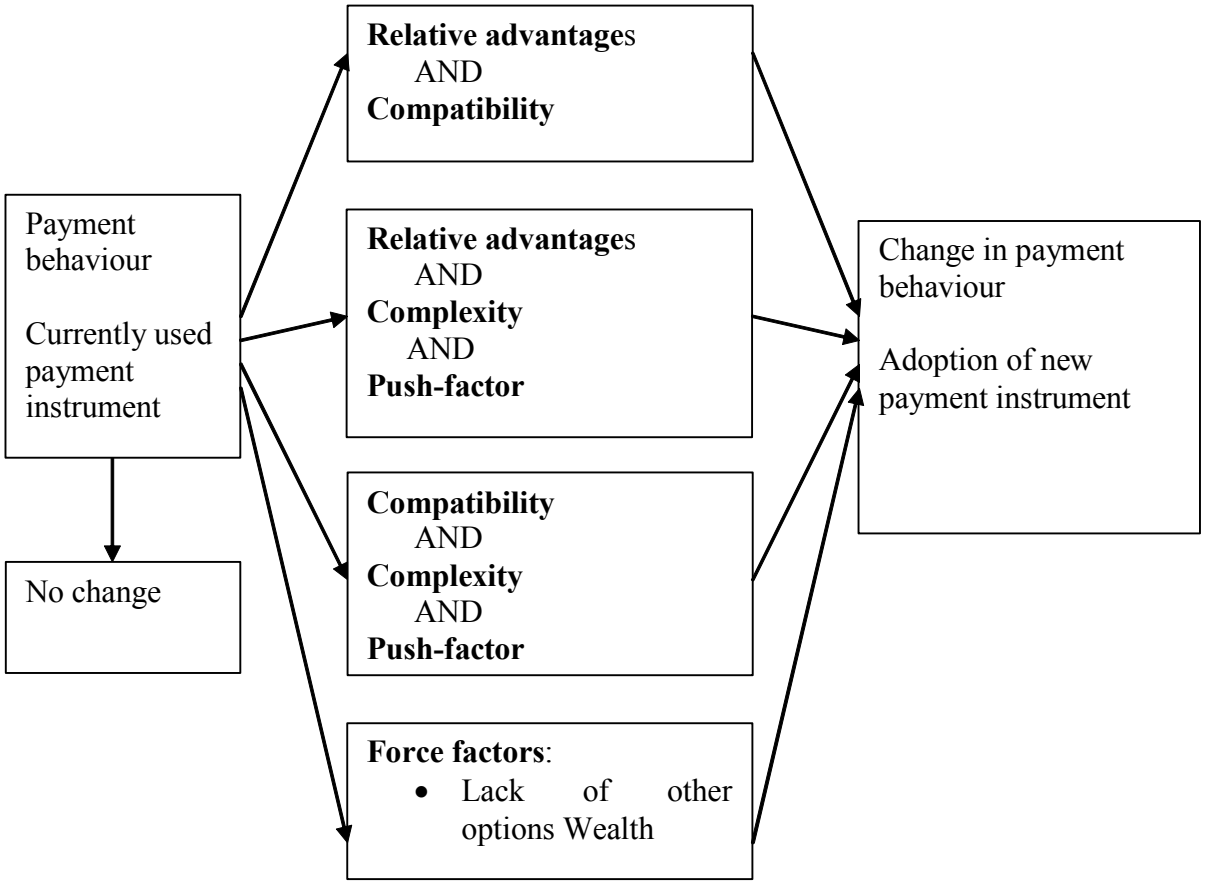
All interviewees were extremely pleased with the current situation. After being asked, however, they came up with a few wishes for the future. Firstly, they would almost all like to receive more information on their debit card transactions. They would like to know more about the place where each transaction took place, for example a phone number and the real name of the store rather than the billing company. They would also like to know what they purchased and perhaps have the warranty receipt itemised with the payment. The interviewees felt that banks could collect this information without infringing on their privacy. Secondly, cash was a problem for many and they hoped for replacement solutions for payments smaller than EUR 20. This is discussed further in Chapter 6. Thirdly, there was a wish for more secure credit cards The chance of fraud with a credit card was perceived to be high.

6 Factors that influence payment behaviour

This chapter presents factors identified as influencing payment behaviour. All payment instruments were considered to be both secure and reliable, and this finding is therefore not discussed separately. The findings are drawn from changes in payment behaviour that had already occurred, such as the adoption of debit cards and online banking. These were discussed during the focus group interviews and statistically presented in Chapter 2. These past changes were analysed in order to derive influencing factors that are recurring and could therefore be used to predict adoption behaviour for future payment instruments.

Based on the data collected during the focus group interviews we identified four clusters of influencing factors. Each cluster is a combination of two to three factors. We found that changes in payment behaviour do not occur without a combination of several factors. Figure 19 depicts the clusters. The factors included three innovation attributes from Diffusion of Innovation theory (relative advantage, compatibility, complexity), a push factor and force factors.

Figure 19. Factors that influence payment behaviour



Push factors are factors that are especially designed to influence consumer behaviour, such as forceful marketing or pricing, but do not force the consumer. Identified push factors included forceful marketing and the pricing of payment instruments with the motive of influencing behaviour. Forceful marketing by banks was deemed to exert a significant additional influence if the payment instruments were otherwise influenced by two other factors. However, forceful marketing was not enough if the payment instrument lacked other influencing factors. Marketing was deemed important especially in the absence of compatibility and when new devices or habits need to be adopted along with adoption of the new payment instrument.

Force factors are the most powerful factors influencing behavioural change and the adoption of new payment instruments. They have three sources: the legislative environment, the action of financial institutions, and the consumer's situation, eg wealth. A poorer consumer may perceive a credit option on a payment instrument as a relative advantage, in contrast to a wealthier person. Force factors are perhaps obvious, but they are also very important factors that should not be overlooked. For example, if banks were to decide to stop

offering domestic debit cards because of SEPA, this would result in significant behavioural changes. The most likely outcome would be the adoption of online debit cards or credit and charge cards.

Based on the interviews, we found the relative advantages were different for each payment instrument. The relative advantages of cards in comparison with cash were that cash withdrawals and pre-planning of spending were not necessary, and also that payment transactions were automatically archived. For international cards in comparison with debit cards the relative advantages were international acceptance and location independence, including Internet payments. The relative advantages of credit cards were the flexible credit option and the 1.5 month interest-free charge-card credit, as well as the feeling of safety abroad due to having a credit card. For online banking in comparison with traditional banking the perceived relative advantages were time independence, location independence and cost savings. The perceived advantages of e-invoicing in comparison with paper invoices were the possibility of a pre-filled reference numbers, location independence (no need to carry a paper invoice to pay it) and archiving. These relative advantages were identified based on the wishes for the future that the interviewees expressed during the interviews. Relationships also influence payment behaviour. Some payment instruments are suited for use by multiple persons. This is a relative advantage for families or couples, but is not analysed further.

Compatibility appeared to be an important factor for changes in payment behaviour, although it was not always necessary for the adoption of new instruments. Based on the interviews, we discovered that if a new payment instrument is compatible with current behaviour and has relative advantages, then push factors are not as necessary as they would be without the compatibility factor. For example, if the new payment instrument is a card and the consumer already uses cards, then even small perceived relative advantages can influence the consumer to change and adopt the new payment instrument. In contrast, the change from cards to, for example, a mobile phone payment instrument is not compatible with current behaviour. Therefore more influencing factors would be needed in addition to relative advantages for a behavioural change to occur and the new payment instrument to be adopted. Based on these conclusions, we propose that a new payment instrument that is compatible with current payment behaviour is more likely to be adopted. Further, when a new payment instrument that is not compatible with current payment behaviour is introduced it must have significant perceived relative advantages, be simple to use and be supported by marketing that emphasizes these factors. It must also be supported by competitive pricing.

Complexity, which actually means simplicity, is a factor that impacts on payment instrument adoption. A new payment instrument needs to be easy to use, especially if there is no compatibility with existing instruments. If the use of an instrument is time consuming or difficult compared with existing instruments, consumers will not adopt the new instrument unless forced to do so.

Based on the findings of the interviews, we identified clusters of factors that seem to influence changes in payment behaviour. There were at least four such clusters. The first was the combination of relative advantage and compatibility. Here, the relative advantages identified included location independence, Internet payments and international acceptance, a feeling of safety when travelling and the possibility of credit. The second cluster identified was the combination of relative advantages, complexity and a push factor. Here, the relative advantages identified included cost savings, time savings, location independence, not having to pre-plan spending, Internet payments and archiving. The third cluster identified was the combination of compatibility, complexity and a push factor, while the fourth was a special case that included force factors that are out of the consumer's control such as a lack of other options or wealth. These factor clusters are discussed in more detail below.

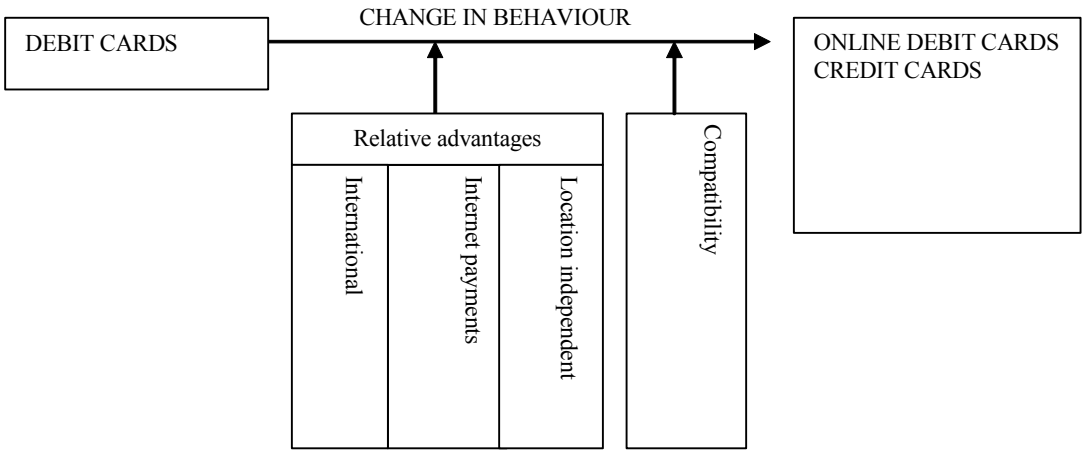
6.1.1 Relative advantages and compatibility

Perceived relative advantages play a large role in adoption if a new payment instrument is compatible with existing instruments. This proposed finding draws on the small perceived difference between the old and new instrument due to their compatibility, for example changing from one card to another. In such a case, the perceived advantages can be relatively small due to compatibility. For example, credit card issuers use bonus point systems and loyalty programmes such as the American Express bonus point system, which was brought up frequently during the interviews. Bonus point systems are designed to influence the consumer to use the issuer's credit card instead of competing payment instruments. With compatible new payment instruments even small cost savings can influence payment behaviour, an example being the new City of Helsinki (HKL) bus card. Even though the card itself is new, the payment behaviour involved in using it does not differ from the previous paper-based card, and the new card can therefore be considered to be compatible. Most interviewees had adopted the new card either because of discounts or because it was perceived to be better than cash.

Based on the interviews, we concluded that if a consumer perceives a relative advantage in international payments, ie the possibility to pay abroad, or on the Internet, or independent

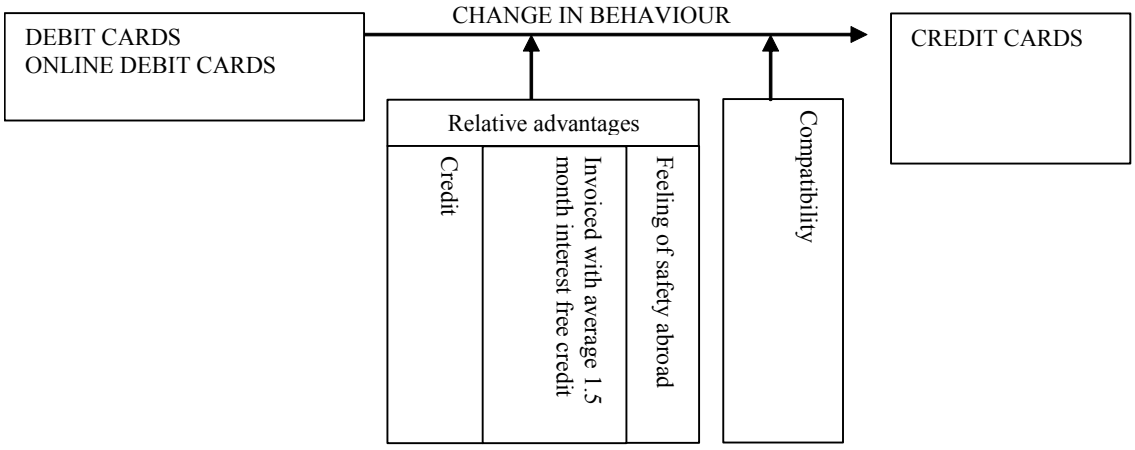
of location, and they already have a debit card, they are likely to change their payment behaviour to either online debit cards or to credit and charge cards, as depicted in Figure 20.

Figure 20. Behavioural change from debit cards to international cards



Based on the interviews, we concluded that if a consumer perceives a relative advantage in receiving flexible credit, or in being invoiced at one-monthly intervals, or travels a lot and is afraid of unexpected situations, and is a card user, they are likely to adopt a credit and charge card, as depicted in Figure 21.

Figure 21. Behavioural change from debit cards to credit cards

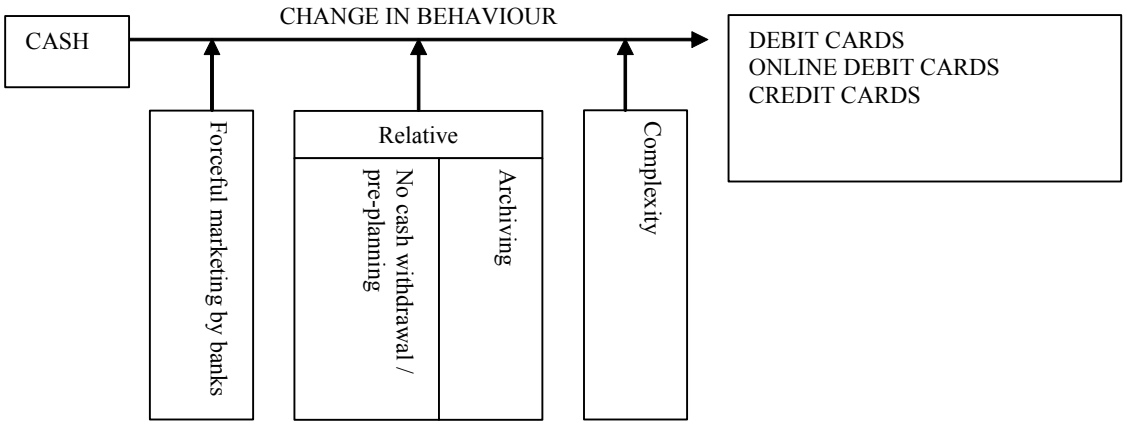


As previously mentioned, it will be interesting to see how significant Finnish consumers perceive the value of credit to be. Will they adopt online debit cards or favour credit cards in the future?

6.1.2 Relative advantages, complexity and push factors

Based on the data collected during the focus group interviews, we found that, if a new payment instrument is introduced that is not compatible with existing practices, a push factor is necessary for the instrument to be adopted. In most cases the push factor will be forceful marketing by the banks. The marketing needs to inform consumers about what the new payment instrument does, and create perceptions about it – an image. The image should include relative advantages and a perception that the new instrument is simple to use. For example, banks forcefully marketed debit cards, and the interviewees had all adopted them. They perceived value in not having to plan ahead how much money they would spend, and in archiving. Archiving means that each item purchased with a card appears on the slip and later on their bank statement. The behavioural change from cash to cards is illustrated in Figure 22.

Figure 22. Behavioural change from cash to cards

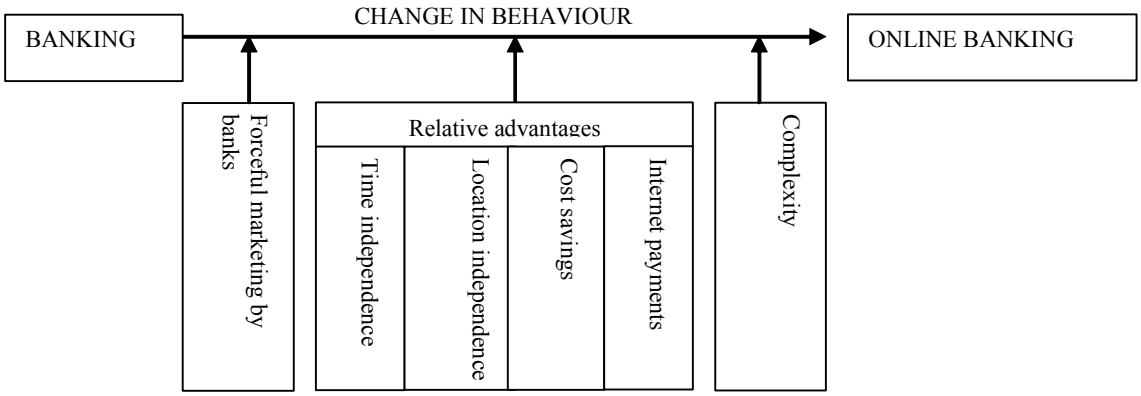


Cards were at one time new instruments that, compared with cash, required the adoption of new practices, such as the signing of receipts. Thus we could say that cards were not compatible with cash in reference to payment behaviour. Banks also used pricing as a push factor to influence change. However, it should be noted that consumers did sign cheques and that this could also have influenced the adoption of cards. Otherwise, cheques are excluded from the present study.

Online banking, when first introduced, was not compatible with any previous payment instrument – new devices were required, new behavioural patterns had to be developed, and new skills needed to be learned. Yet, compatibility proved not to be an important factor for the successful adoption of online banking, because the perceived relative advantages were so big. Independence from bank branch opening hours and location, and cost savings were

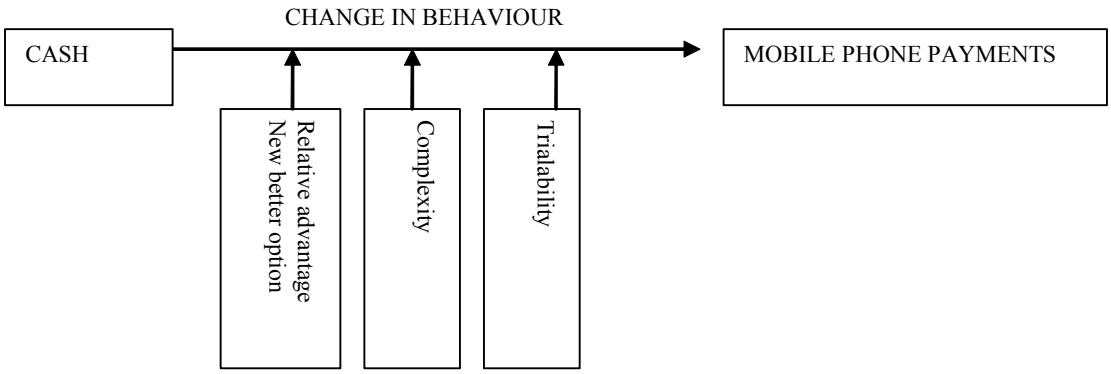
the reasons given by the focus groups for starting to use online banking, along with forceful marketing by the banks. Potential cost savings arose when banks charged less for online banking than for other instruments. The behavioural change to online banking is depicted in Figure 23.

Figure 23. Behavioural change from banking to online banking



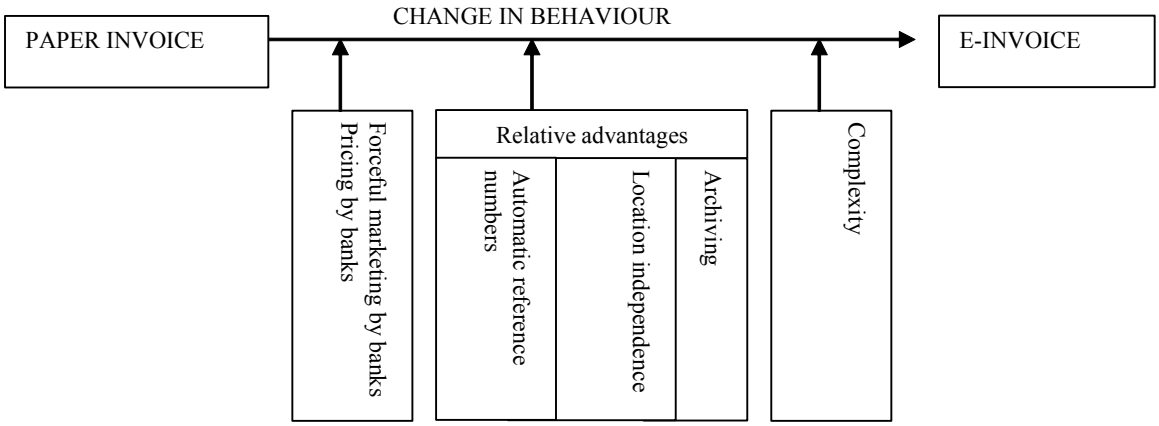
Several mobile phone payment systems have been developed and most of them have failed. Many interviewees mentioned the SMS tram ticket as a good mobile phone payment service. This was because many found cash awkward and did not carry any with them. These facts had in turn made them active in searching for an alternative solution. The interviewees found that paying with an SMS message instead of cash was a good option, since it was simple enough to use. The relative advantage was that this was a new payment option better suited to their lifestyle. Some had also tried car washes and vending machines. The low cost of most commodities sold with mobile phone payments lowers the threshold to testing the service, and this was perceived positively. However, company phones were an obstacle to wider use of mobile phones as a payment instrument, as they cannot be used for personal payments. From these comments and observations we constructed Figure 24, which depicts the behavioural change from cash to mobile phone payments. Most interviewees said they always use a card when possible and did not seek to replace cards with mobile phones. This finding may, however, reflect attitudes that no mobile phone payment service has yet been introduced that has relative advantages and is simple to use, and therefore the interviewees could not imagine such an innovation.

Figure 24. Behavioural change to mobile phone payments



The e-invoice is currently being introduced to consumers and no related behavioural change has yet occurred. In Figure 25 the influencing factors have been derived from previously mentioned behavioural changes (author's proposal).

Figure 25. Behavioural change from paper-based invoices to e-invoices



The e-invoice is not compatible with paper invoicing. Since compatibility is not a factor based on past behavioural findings relating to influencing factors, a push factor and relative advantages and complexity are necessary factors for e-invoicing to be adopted by consumers.

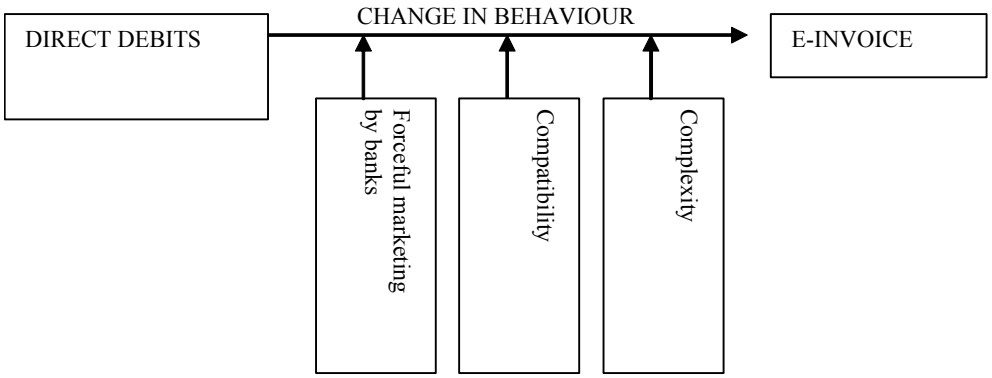
There are two possible push factors for the e-invoice: forceful educational marketing and pricing. Forceful marketing by banks is already occurring. Consumers do not currently perceive the costs for paying invoices, but banks or merchants could influence this by introducing discounts for payments settled with an e-invoice. The relative advantages derived for e-invoicing are based on comments by interviewees, especially when asked about their wishes for the future development of online banking. Most interviewees did not like inputting reference numbers but had no trouble with account numbers. When asked about mobile

banking, a distinct problem was that the interviewees never had the invoice with them (with the information necessary for executing payment: receiver's account number, reference number, etc.) when carrying their mobile phone. From this we derived the location-independence factor of e-invoices, which in this case means that the payer needs to have access to the paper invoice received by (e)mail when paying invoices, for example at work. Most interviewees wished for more detailed information about their purchases to be sent to their online banks. With e-invoices, more information is received, and therefore the relative advantages of archiving and tracking spending are present. These relative advantages should be taken into account when marketing is designed, in order to more effectively ensure adoption. The marketing message for consumers should also build heavily on an image of simplicity. The name e-invoice does not convey this image, however, since consumers generally shy away from the 'e'.

6.1.3 Compatibility, complexity and push factors

E-invoicing was at the time of the interviews introduced to consumers and therefore Figure 26 depicts only a proposal of possible influencing factors for the adoption of e-invoicing by consumers that use direct debits. Based on previously mentioned interviews and almost identical characteristics of e-invoices and direct debits I propose that forceful marketing by banks can result in the adoption of e-invoices with a fast adoption speed.

Figure 26. Behavioural change from direct debits to e-invoices



6.1.4 Force factors

The most powerful force factor is the lack of alternative options, which forces consumers to adopt and use certain payment instruments. Another identified force factor is wealth, or the lack thereof, which forced some consumers to seek credit, towards which they otherwise had

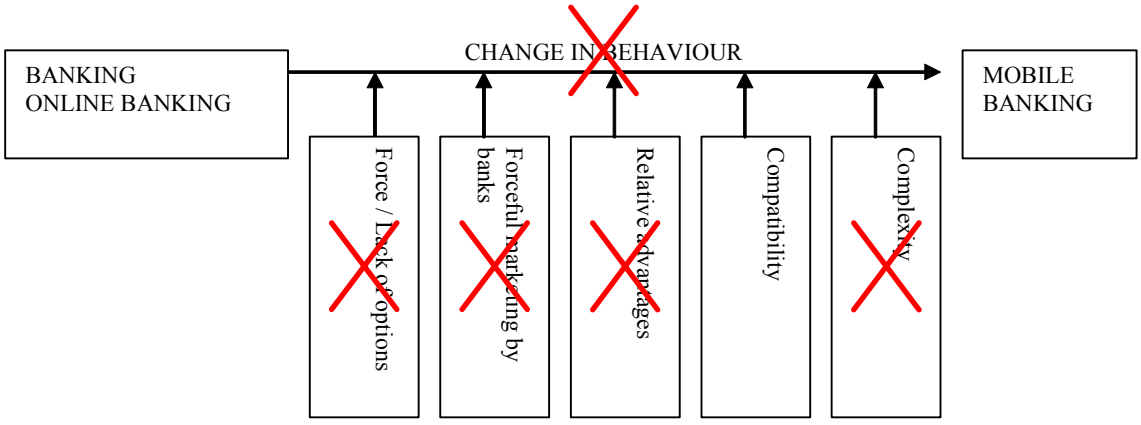
strong negative attitudes. This can be seen either as a force factor or as a relative advantage for those who lack wealth.

If a payment instrument is introduced with the help of force factors, we should bear in mind the possibility that, even if consumers adopt it, once the force factors are removed they might switch to a 'better' instrument. For example, if the only payment instrument available to a consumer is one the consumer finds too complex or incompatible with their lifestyle, they may actively seek alternative instruments. If another instrument is introduced, the rate of adoption could in this situation be faster than normal. For example, let us assume that cash is the only payment instrument accepted in certain situations and that the consumer perceives cash to be complex. The consumer may actively seek other possible payment instruments to replace cash. If another instrument becomes available, the consumer will adopt it provided it has relative advantages, and/or is compatible with payment instruments already perceived as good, and/or has low complexity (ie is easy to adopt and use). This could eventually happen with mobile payments.

6.1.5 Suggestions

Figure 27 was designed to illustrate how the factors found in the interviews can be used. It depicts, as an example, the behavioural change from online banking to mobile banking. The interviewed focus groups did not perceive relative advantages in mobile banking, which was also perceived to be complex. Furthermore, the interviewees were not forced to use mobile banking and banks had not marketed it to them. The only positive adoption factor was compatibility with online banking. As a result, it is not surprising that none of the interviewees used mobile banking and behavioural change was therefore absent.

Figure 27. Example of identified influencing factors



In order to make mobile banking appealing to the mass of consumers and speed the rate of adoption, innovators and service providers should, according to the findings of the present study, identify real relative advantages or else innovate to make mobile banking less complex. In addition, marketing based on those factors would increase the probability of success.

Banks also have a major role to play in promoting the adoption of e-invoicing. They should educate their customers, and also educate enterprises on how to attract consumers to adopt e-invoicing. Consumers will have to be informed of changes in procedures and services. The banking industry is best suited to provide such information because of its in-depth knowledge of the service spectrum. This process can also be viewed as a good opportunity to convey to consumers the greater possibilities and wider economic and financial network created by SEPA.

The benefits to consumers of e-invoicing include easy, convenient and efficient payment of invoices. In addition, consumers can archive their invoices and establish easy access to historical information. E-invoicing is also more environmentally friendly, because it is practically a paperless system. Most consumers do not like inputting reference numbers when processing their invoices via an online bank. With e-invoicing this is not necessary. This could be an important relative advantage, and, if marketed correctly, could speed up the adoption of e-invoices by consumers. We would suggest the challenges for consumer adoption of e-invoicing are lack of information, service activation issues, no perceived value added and resistance to change.

7 Conclusions

Based on the findings of the present study, a Finnish consumer can currently be described as a passive and satisfied user of current payment instruments. The importance of marketing is highlighted in this kind of environment, where consumers do not actively seek new, better ways to pay. Finnish banks have a proven track record of being able to initiate changes in Finnish consumers' payment behaviour. For example, the banks were the drivers behind the adoption of debit cards and online banking, which today create cost savings in the magnitude of hundreds of millions of euro per year. By using the influencing factors and factor clusters identified in this study and described in Chapter 6, a more structured approach can be made to orchestrating future changes in payment behaviour, and there is thus a greater likelihood of success.

7.1 Critique of the present study

The limitation of all research conducted with focus group interviews is that the opinions are from only a small group of a much larger population. For example, all interviewees in this study were middle class and well educated. These facts might influence the overall picture received from the data collected. However, such interviews can be used as a starting point for larger studies and to generate ideas for improvements. Moreover, the current payment behaviour implicated in the interviews correlated with statistical data published by the Finnish Bankers' Association.

Another criticism is that most of the present study is based on data collected during the focus group interviews and the use of references is limited. However, focus group interviews typically produce large amounts of data and the purpose here was to collect qualitative data and analyse it. The findings presented should be further validated by other studies. All conclusions and findings presented in the present study should be regarded as tentative, and in some cases as opening up roads for additional research. The tentative findings can be partly validated by comparing them with the data collected during the quantitative survey conducted by Tomi Dahlberg and Anssi Öörni.

7.2 Suggestions for future research

The four combinations of influencing factors need to be further investigated before they can be declared valid. Another suggestion for future research is the adoption of credit cards by those who have already adopted international online debit cards as their first card instrument. Other suggestions for future research have been put forward earlier in this paper and are therefore not repeated here.

References

Ajzen, I & Fishbein, M (1980) Understanding Attitudes and Predicting Social Behavior. Prentice-Hall, Inc., Upper Saddle River, New Jersey.

Ajzen, I (1988) Attitudes, Personality, and Behavior. The Dorsey Press, Illinois.

Calder, B J (1977) 'Focus groups and the nature of qualitative marketing research'. *Journal of Marketing Research*, 14:353–64.

Dahlberg, Tomi (2005) Helsinki School of Economics lecture handouts. Unpublished.

Dahlberg, T & Öörni, A (2005) Maksutapojen leviäminen Suomessa – Tutkimussuunnitelma ('Spread of payment methods in Finland – Research plan'). Unpublished.

Gresvik, O & Owre, G (2003) Costs and Income in the Norwegian Payment System 2001. An application of the Activity Based Costing framework. Working Paper 2003/8. Norges Bank.

Guibourg, G & Segendorf, B (2004) Do Prices Reflect Costs? A study of the price- and cost structure of retail payment services in the Swedish banking sector 2002. Working paper series No. 172. Sveriges Riksbank.

Goldman, A E (1962) 'The Group Depth Interview'. *Journal of Marketing*, Vol. 26, No. 3 (July 1962), 61–68.

Morgan, D L & Spanish, M T (1984) 'Focus Groups: A New Tool for Qualitative Research'. *Qualitative Sociology*, Vol. 7, No. 3 (September 1984), 253–270.

O'Donnell, J M (1988) 'Focus groups: a habit-forming evaluation technique'. *Training and Development Journal*, Vol. 42 No. 7 (July 1988), 71–73.

Raeste, Juha-Pekka (2005) 'Siunattu sähkölasku' ('Blessed electricity bill'), *Helsingin Sanomat*, 8 January 2006, E3.

Rogers, E M (2003) Diffusion of Innovations. Fifth Edition. The Free Press, New York.

Sahiluoma, Veijo (2005) 'Luottokorttiala odottaa jo pankkikorttien poistumista' (Credit card sector expects imminent demise of the debit card'), *Kauppalehti*, 30 November 2005, 10.

Web references

Banks 2005 in Finland, April 2006. Finnish Bankers' Association. Retrieved May 22, 2006 from:

http://www.pankkiyhdistys.fi/sisalto_eng/upload/pdf/banks_2005.pdf

Definition of e-invoice by Tieke. Retrieved April 20, 2005 from:

http://www.tieke.fi/in_english/_ebusiness/einvoice/

Definition of e-invoice by eInvoice consortium. Retrieved April 20, 2005 from:

http://www.einvoiceconsortium.com/en/index.html

E-invoice section

Definition of Cash. Wikipedia. Retrieved November 30, 2005 from:

http://en.wikipedia.org/wiki/Cash

Definition of Credit Card. Wikipedia. Retrieved November 30,2005 from:

http://en.wikipedia.org/wiki/Credit_card

EU payments, EU giros, 30 May 2003. Finnish Bankers' Association. Retrieved 28 December 2005 from:

http://www.pankkiyhdistys.fi/sisalto/common/showpage.asp?id=894&haku

Kansainvälinen tilinumero IBAN ulkomaan maksuliikenteessä, 21 September 2000 (updated 23 July 2004). Retrieved 28 December 2005 from:

http://www.pankkiyhdistys.fi/sisalto/upload/pdf/ibanasia.pdf

Luottokunta Annual Report 2004. Luottokunta. Retrieved 29 November 2005 from:

http://www.luottokunta.fi/Luottokunta/Vuosikertomus.html

Statistical Data on Banks' Payment Systems in Finland 1995–2004, 13 April 2005. Finnish Bankers' Association. Retrieved November 29, 2005 from:
http://www.pankkiyhdistys.fi/sisalto_eng/upload/pdf/statistics.pdf

Suomalaisten tilinumeroiden rakenne ja tarkiste, June 2004. Retrieved 28 December 2005 from:
http://www.pankkiyhdistys.fi/sisalto/upload/pdf/tilinrorakenne.pdf

Survey on saving and use of credit (April 2005). Finnish Bankers' Association. Retrieved 29 November 2005 from:
http://www.pankkiyhdistys.fi/sisalto_eng/upload/pdf/saving_survey2005.pdf

Towards a single euro payments area – third progress report (2 December 2004). European Central Bank. Retrieved 20 April 2005 from:
http://www.ecb.int/pub/pdf/other/singleeuropaymentsarea200412en.pdf

Appendix 1. Focus group interviews

1. Lappeenranta group on 25 August 2005. Duration 1 hour and 14 minutes. Six participants aged 26, 27, 29, 30, 30 and 31. Two women and four men. Lappeenranta.
2. Mothers with one to two children under the age of six on 3 September 2005. Duration 1 hour and 25 minutes. Four participants aged 29, 30, 30 and 30. All women. Espoo.
3. 30-year-old lawyers with no children on 7 September. Duration 48 minutes. Four participants aged 28, 29, 30 and 32. One man and three women. Helsinki.
4. Active retirees' first interview on 28 September. Duration 1 hour. Two participants (a couple) aged 70 and 73. One man and one woman. Helsinki.
5. Active retirees' second interview on 6 October. Duration 55 minutes. One female participant aged 72. Helsinki.
6. 20-year-old boys who had graduated from high school on 28 September. Duration 35 minutes. Four participants of aged 18, 18, 19 and 21. All male. Helsinki.
7. Mothers of children who had already left home. 18 October. Duration 1 hour 14 minutes. Six participants aged 55, 55, 56, 57, 58 and 65. All female. Espoo.

Appendix 2. Questionnaires

TOPIC 1: PAYMENT BEHAVIOUR

A seven-step scale from Never to Frequently:

1. I use cash as a payment instrument.
2. I use a debit card as a payment instrument.
3. I use a credit or charge card as a payment instrument.
4. I use a mobile phone as a payment instrument: eg ring tones, logos, parking...
5. I pay invoices at a bank branch.
6. I pay invoices using my online bank.
7. I pay invoices using direct debits.
8. I pay invoices using my mobile phone: eg WAP-bank.
9. I pay invoices using e-invoicing.

A seven-step scale from Less to More:

10. During the next 3 months I will probably use cash for payments.
11. During the next 3 months I will probably use a debit card for payments.
12. During the next 3 months I will probably use a credit or charge card for payments.
13. During the next 3 months I will probably use my mobile phone for payments.
14. During the next 3 months I will probably pay invoices at a bank branch.
15. During the next 3 months I will probably pay invoices using my online bank.
16. During the next 3 months I will probably pay invoices using direct debits.
17. During the next 3 months I will probably pay invoices using my mobile phone.
18. During the next 3 months I will probably pay invoices using e-invoicing.
19. During the next 5 years I will probably use cash for payments.
20. During the next 5 years I will probably use a debit card for payments.
21. During the next 5 years I will probably use a credit or charge card for payments.
22. During the next 5 years I will probably use my mobile phone for payments.
23. During the next 5 years I will probably pay invoices at a bank branch.
24. During the next 5 years I will probably pay invoices using my online bank.

25. During the next 5 years I will probably pay invoices using direct debits.
26. During the next 5 years I will probably pay invoices using my mobile phone.
27. During the next 5 years I will probably pay invoices using e-invoicing.

TOPIC 2: ACCOUNT NUMBER

A seven-step scale from Disagree to Agree:

1. I would like to keep my bank account number if I were to change my bank in Finland.
2. I would like to keep my bank account number if I were to change my bank abroad.
3. I would like to use my social security number in addition to my bank account number when paying by giro.
4. I would like a bank identifier in text format, eg similar to an e-mail address, instead of a bank account number.
5. I would like the current practice regarding bank account numbers to stay unchanged.

TOPIC 3: CHANGES IN PAYMENT BEHAVIOUR

A seven-step scale from Disagree to Agree:

1. It is important to me that I can purchase many products from many places.
2. It is important to me that I can use a payment instrument constantly at all times of the day.
3. It is important to me that I can save time with my choice of payment instrument, eg by avoiding queues at a bank or store.
4. It is important to me that I can pay where I am and not have to go to eg a bank.
5. It is important to me that I can archive my purchases, eg by saving receipts.
6. It is important to me that I can easily start using new payment instruments without, for example, having to register with a new service.
7. It is important to me that I can start using new payment instruments with my present payment accounts without having to open separate accounts.
8. It is important to me that I can start using new payment instruments without having to study instruction manuals.

9. It is important to me that I can, if necessary, receive help in using a payment instrument.
10. It is important to me that it is extremely difficult to misuse a payment instrument.
11. It is important to me that a payment instrument is offered by a trusted party such as a bank.
12. It is important to me that I can trust the payment instrument will always work.
13. It is important to me that when an error or misuse of a payment instrument occurs the payment instrument issuer corrects the situation without my involvement and without delay.
14. In the event of fraud, it is important to me that the payment instrument issuer claim liability for the costs.

TOPIC 4: COMPATIBILITY

A seven-step scale from Disagree to Agree:

1. It is important to me that I use the same payment instruments as people who are important to me.
2. It is important to me that the payment instruments I use do not cause me embarrassing situations.
3. It is important to me that a new payment instrument is compatible with my current behaviour.
4. It is important to me that a payment instrument is ethical and does not result in, for example, high interest payments.
5. It is important to me that starting to use a new payment instrument is easy.
6. It is important to me that my current knowledge is sufficient to start using a new payment instrument and I do not have to learn new things.
7. It is important to me that new payment instruments are based on technology that I already use.
8. I want to use payment instruments that I am used to using.
9. The possibility of paying anonymously increases my willingness to use a payment instrument.

TOPIC 5: THE COST OF PAYMENTS

A seven-step scale from Less to More:

1. If I were to purchase an item today I would likely use the payment instrument from which a would receive a discount of 10 cents.
2. If I were to purchase an item today I would likely use the payment instrument from which a would receive a discount of 50 cents.
3. If I were to purchase an item today I would likely use the payment instrument from which a would receive a discount of 1%.
4. If I were to purchase an item today I would likely use the payment instrument from which a would receive a discount of 5%.
5. I would likely use the payment instrument that is cheapest if the quality of service and basic price of the item would stay the same.

A seven-step scale from Disagree to Agree:

6. It is important to me that goods are priced according to costs.
7. It is important to me to know the cost of payment so that I can influence product pricing with my choices.
8. It is important to me that the cost of payment is marked separately from the price of the goods.
9. It is important to me for the cost of payment to be regulated by an authority.

TOPIC 6: WISHES FOR THE FUTURE

A seven-step scale from Disagree to Agree:

1. It is important to me that new payment instruments are developed.
2. It is probable that I will receive all my invoices electronically within the next 5 years.
3. It is probable that I will need only one payment instrument that I can use in all situations within the next 5 years.
4. It is probable that I will need a payment instrument that can be used on the Internet within the next 5 years.
5. It is probable that I will use my mobile phone as a payment instrument within the next five years.
6. It is probable that I will receive e-invoices within the next 5 years.

7. It is probable that I will open a bank account in one of the 12 euro area countries within the next 5 years.
8. It is probable that I will make international payments from Finland within the next 5 years.