# An investigation into the determinants of user acceptance of personalization in online banking

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Masters thesis

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## Executive summary

Personalization is an innovative strategy which enables the bank to further differentiate from its competitors by drawing the client into increasingly deeper levels of mutually beneficial relationships. However for any personalization effort to succeed both the bank and its clients need to perceive it as being relevant and beneficial to their interests. The bank needs the clients implicit and explicit consent to use their personal data to enable them tailor the clients experience to suit s/he's purposes as well as meet their goals. On the other hand the client needs to see its relevance and desirability as well as trust the bank to deliver what it promises. Since such decisions are based on previous experience, a major determinant of success of the personalization effort is thus a function of the client's perception of the bank and their current relationship with it.

Consequently in this research we have focused on understanding the underlying factors involved in the client's relationship with the bank and how they influence the acceptance of five concrete personalization features, namely adaptive login feature, adaptable settings, emails, adaptive banners adverts and adaptive financial advice. We adopted this approach because we view personalization as a relationship marketing strategy and therefore propose that the basic underlying factors in relationship marketing would be major determinants of acceptance of personalization. We used the Commitment-Trust Theory (Morgan and Hunt, 1994) and the Theory of Planned Behaviour (Ajzen, 1985) as analytical tools to model the relationship between the basic relationship marketing constructs and the specific highlighted personalization features. We added the variable Control (data) to our models because it has been indicated in research as being important in acceptance of personalization.

We found that clients in general want more personalization. We also found that five variables namely, Control (self-efficacy), Control (data), Relationship terminations cost, Relationship benefit and Subjective norm were significant determinants of acceptance of personalization in online banking. At lower levels we found various issues which linked these variables to the acceptance of the personalized features. For instance we found that clients were more sensitive to control of content than they were to control of the interface. This clearly raises issue of data control in acceptance. Also their perception of self competence on the site determined how effectively they used it. While we found as stated earlier that clients desire more personalization, the observed level of acceptance was relatively low. This shows there is a gap between what is on offer or how it is being offered and what they really want. There is a lot of room for improvement, a lot of the clients are passively engaged because it is a necessary service which they need. The bank however needs to take them from there to a position where they are actively engaged and driving the process.

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# 1. Introduction

## 1.1. Background to Personalization in Internet banking

Internet banking has been one of the most successful of all the traditional commercial ventures that have adopted the internet platform. The internet is taking over as a main access channel to complement branch and call centres in the banking industries' efforts to enhance their services, improve integration with partners and interaction with their clients. The high level of internet penetration in Europe and particularly in the Netherlands has made it a very attractive channel. According to a recent report of, Ensor and van Tongeren for Forrester Research (2005), the Netherlands has a 50% broadband penetration rate and 44% of all customers use online banking. This has created huge opportunities for the banking industry in terms of being able to reach their clients and offer new services.

The internet has proved to be a very cost effective delivery platform, because of its inherent built-in qualities. According to Centeno (2003, 6) "*Banks offer Internet banking mainly to increase cost-effectiveness, increase customer reach, and retain market share.*" Also according to Turban (2000) Internet banking is extremely beneficial to customers because of the savings that can accrue in the costs, time, and space it offers, its quick response to complaints, and its delivery of improved services. It is clear that the internet provides excellent new opportunities for the banking industry in terms of it being able to reduce long-term overhead costs and offer improved services.

"*Estimates for banking transactions costs across delivery channels, e.g. physical branch, phone, ATM, PC-based dial-up, show that Internet transactions are the cheapest with a factor of 1-2:100 compared to physical branches, 1-2:30 compared to ATM's and 1:2-10 compared to PC-based dial-up Internet*"Centeno (2003, 6), (Hawkins & Dubravko, 2001). Banks have moved rapidly into the internet channel to exploit these advantages. All banks in the Netherlands have adopted some form of internet banking, and as was stated earlier the public has responded very enthusiastically with a 44% percent penetration in less than 5 years. However while it has brought major benefits to both customer and bank it has also brought about fierce competition in the industry. This has been beneficial to the customer but has thrown up several challenges for the banks.

A research report by Deutsche Bank Research (2005, 2), expresses the current situation succinctly. According to them, "*Retaining the current customer base is key… the cost of acquiring new customers is high, but the probability that they stay is quite low. New customers who are acquired at the margin are quite likely to be 'switches'. They will eventually switch to a better offer.*" They use an observation of Reichheld (1996) to buttress this point. According to him, for many businesses, the customers most likely to sign on after switching from another provider were precisely the worst customers you could possibly find. As a result of this banks are looking for innovative ways of retaining their customers even if it causes some losses in the short and medium term.

Retaining customers is the primary goal of relationship marketing. Relationship marketing attempts to draw the customer and the client into a recursive learning relationship where they both become increasingly acquainted and satisfied with each other. Customer satisfaction is the key. Another quote from Deutsche Bank Research (2005, 2) is instructive here "*Customer satisfaction is the prerequisite for customer retention. More than two-thirds of the customers who are "delighted" with their bank say they will not switch to another provider. Quite the contrary: they consider buying other products from the same provider, and will even recommend them to others.*

*By contrast, almost three-quarters of dissatisfied customers say they will switch their financial institution.*"

A key tool of relationship marketing is personalization, and banks have increasingly turned to this strategy as a means to improve their customer relations. Personalization in itself can be quite a complex process. It involves powerful new technologies and sophisticated systems. The potential of these systems is enormous. Acquiring data on behaviours and preferences allows businesses to enhance customer relationships, distribute knowledge and expertise around, Kasanoff (2001).

## 1.2. Challenges of Personalization

There are many challenges involved in implementing personalization. There are certain issues which need to be taking into consideration and resolved before personalization is implemented. In this regard Friedlein (2001) has proposed that the five following issues need to be addressed.

(1) Legal issues such as resolving regulatory, security and privacy issues as well as maintaining data protection across multiple jurisdictions.
(2) Technical issues; Developing and implementing integrated real-time personalisation systems as well as keeping an accurate up to date database.
(3)Personnel issues; you need skilled people who have experience in those specific areas.
(4) Channel issues: creating a single customer view on an enterprise-wide basis, by integrating channels.
(5) Customer issues: few site users leap into personalization at once, they are usually cautious, trying to making up their minds as to whether they can trust the provider or not. They also need to be comfortable with the site, It also takes time to configure personalisation features and time is precious, so response is by no means swift or guaranteed. Many users can quite happily do without personalisation. Mistakes can also be made, with preferences being incorrectly inferred by the personalization engine etc.

As has been highlighted above there are various challenges which organizations face when implementing Personalization. Each issue needs to be addressed thoroughly and in an integrated manner. We believe however that 'Customer issues' form the core with all the other components being built on it.

## 1.3. Research focus

Our focus in this research is on this last aspect 'Customer issues'. This we believe is the foundation of any personalization effort. Personalization is all about the customer and is demand driven, in other words it is developed around the wishes and desires of the customer. This study was done in collaboration with the ABNAMRO based in the Netherlands and was an investigation into which factors determine user acceptance of Personalization in online banking. In this investigation we sought to find out three things;

(1) To determine the underlying factors influencing the acceptance of personalization in online banking,
(2) The degree to which they affect acceptance and
(3) To ascertain which factors had an immediate (or direct) effect on it.

We approached this task using two theoretical frameworks, namely the Commitment-Trust theory, and the Theory of Planned Behaviour. They both served as a basis of our modelling and analysis. This report is divided into six chapters. In chapter 1, we give a brief introduction into the current situation and the problems created by this situation. In chapter 2 we go through the constructs under study; personalization and online banking and then we look into the Commitment-Trust theory and The Theory of Planned Behaviour which are the theoretical frameworks being used in the study. We end the chapter with the hypotheses we intend to test. In chapter 3 we look at the methods used and why they were adopted in this research. In chapter 4 we highlight the results from the analysis of the data.
This is done in two parts, the first deals with the descriptive details while the second part deals with the modelling. In chapter 5 we discuss our results and conclusions as well as highlight the extent to which the research questions were answered. We also point out areas for further research and the limitations of the study. Lastly in chapter 6 we give some recommendations to our host bank the ABNAMRO.

# 2. Literature review/Theoretical framework

## 2.1. Personalization

Personalization is a concept that has become prominent in recent years as a result of the increasing importance organizations have placed on their relationship with their clients. Organizations have come to realize that traditional approaches to organisation/customer relationships are no longer sufficient to convey any unique advantage to the organization in relation to its clients, or offer any differentiating benefit to the customer. Personalization has thus been coined as a general term to describe the process of adapting the relationship or interaction between the customer and the organization to a more personal level. Personalization as a concept has been defined in various ways depending on the application and the environment/platform within which it is being realized. For us to properly appreciate the concept of personalization as it is currently applied we need to look at its antecedents in relationship marketing.

### 2.1.1. Background

Personalization has its root in relationship marketing. While personalization as a practice has been adopted in areas outside marketing, marketing has been the main driver for its development and where it has founds its highest expression. Relationship marketing is a long term, mutually beneficial relationship in which both buyer and seller focus on value enhancement through the creation of more satisfying exchanges (Sheth, Eshghi and Krishnan, 2001). In its most basic form it can be observed when we walk into a restaurant and are acknowledged by name and led to a favourite position. At a higher level this was expressed in the relationship between banks and their preferred customers, where account managers were assigned to cater for the needs of specific clients.

The focus in all these instances is to enable the client and organisation to know each other better and use the information gained to define and anticipate their needs respectively and further improve the relationship. Until recent times this has only been possible on a small scale and with very high value clients. However with the advent of the new media, such as the Internet it has become

possible to adopt relationship marketing principles and apply them in a very practical way on a large scale.

### 2.1.2. Personalization defined

In a general sense personalization is "*a process of gathering user-information during interaction with the user, which is then used to deliver appropriate content and services, tailor-made to the user's needs.*" (Bonett, 2001). We see here four key elements of any personalization effort, interaction, information gathering, information processing and specifically tailored output. All this happens in a recursive process which may be organizational or user defined. We can see a further elaboration of this in the definition given by Jupiter Communications. According to Foster for Jupiter Communications, "*personalization can be defined as predictive analysis of consumer data used to adapt targeted media, advertising and merchandising to consumer needs.*" (Foster, 2000)

A careful review on the literature on personalization will show that most of the definitions proffered by theorists are in relation to the new media. Personalization as we currently know it has only become possible because of the new media, and is consequently defined in this context. One problem we face in doing this is that in trying to define the concept many of the theorists give a technical and descriptive view of the process and in many cases do not distinguish between personalization as a concept and as a technique. Those who have been able to take the concept out of a strict technical view point unfortunately have taken quite divergent positions making it difficult to reconcile all such views. A few definitions are instructive here;

"*Personalization is a toolbox of technologies and application features used in the design of an end-user experience. Features classified as 'personalization' are wide-ranging, from simple display of the end-user's name on a web page, to complex catalogue navigation and product customization based on deep model of user's needs and behaviours. "* (Kramer, Noronha & Vergo, 2001, 44)

"*Personalization includes customization, where users build their own user interface by selecting from channels of information, 1-to-1 marketing and other processes where customers "automatically", receive different levels of treatment based on past behavior [and] Collaborative filtering, where group behavior and preferences are leveraged to provide recommendations for individuals.*" (Instone, 2000, 2)

"*…an approach of using artificial intelligence to observe and analyze users' demographic and behavioral data in order to make recommendations.*" (Kambil & Nunes, 2001, 110)

A careful purview of the above definitions will affirm a strictly technical orientation to the concept. Huang and Lin (2005, 27), have criticized this approach, stating "*personalization should not be confined within the IT department, because design for the overall personalization experience of customers is often more difficult and at the same time more important than personalization technologies.*" Theorist who define personalization beyond strictly technical terms in most cases view it as a strategy but then take divergent views as to what this really means as highlighted in the following examples.

"*…personalization is a strategy, a marketing tool, and an art. Personalization requires implicitly or explicitly collecting visitor information and leveraging that knowledge in your content delivery framework to manipulate what information you present to your users and how you present it*." Ricci (2004)

DataMonitor have presented personalization as a business strategy, according to them "*Personalization is first and foremost a business strategy, and is an attempt to counter-balance the anonymity that typically characterizes interactions between consumers and large businesses, especially over the Internet*" (Broadvision, 2004).

Berg, Janowski, and Sarner, (2001) also view personalization as a strategy developed to address tailoring customer interactions across all customer-facing departments such as sales, marketing, and customer service.

A review of all these definitions show us that personalization is a strategy facilitated by new media technology which enables the interaction between the organization and the customers causing them to receive increasing amounts of information about each other which in turn enables better interaction and relationships.

### 2.1.3. Types of personalization.

Personalization can be subcategorized into two broad categories; user-adaptive and user-adaptable personalization (Teltzrow and Kobsa, 2004, Treiblmaier, 2004). Some theorists (Nielsen, 1998, Kambil and Nunes, 2001, Bonett, 2001, Huang and Lin, 2005) use the terminology personalization for adaptive personalization and customization for adaptable personalization. The difference between adaptive and adaptable systems is the extent to which the user can influence the 'individualization' process. Adaptable systems require conscious input on the part of the user, whereas in adaptive systems the process works automatically (Treiblmaier, 2004). There are various personalization techniques available and we will be highlighting some of the most common and relevant ones in this paper.

### 2.1.4. Personalization technique.

**Cookies:** These are small data files that are stored on the local host machine. They are created when the user first interacts with a website. As the user provides information such as a name, address or other form of identification, the server running the website stores this information on the user's machine. In follow-up visits to the website, the server can then identify needed information about the user without requiring the user to retype it. Cookies are usually small, containing no more than simple user identification, for example a name associated with a computer id. The rest of the user information is usually obtained from the web server's database. A lot of websites use cookies as a basic technology for personalization. Users see this in the form of a welcoming address that uses their name, e.g., "Good morning Victor, Welcome Back!" (Wu, Im, Tremaine, Instone, Turoff, 2002)

**Profile-based personalization:** To be able to purchase or receive advanced services from many websites, users are required to register and enter personal information such as gender, age, interests, etc (creating a user profile). The websites store this information in a database on the web server. This information is used primarily to support the user with "type once" operations such as maintaining the user's shipping address. Websites also use user profiles for personalized services. The user's postal code provides economic information so that the website can reorganize product access according to a customer's economic profile. For example, a featured wine sale might not be advertised to users residing in an area known to have a depressed economy (Wu et al, 2002).

This method falls within the user-adaptable category. A lot of sites use this technique, giving the user the choice to specify their preferences to the organization. It requires a lot of user input, but is highly rewarding if well done. Most email providers require this from their users.

**Personal tools:** Some websites allow users to create shortcuts (links) to the information that interests them most. A lot of news and information sites allow you to configure the kind of news and information you receive and also enable you to create short cuts to take to such pages, www.google.com is a good example. In portal sites such as Yahoo! (http://www.yahoo.com) and MSN (http://www.msn.com), users can create a page containing personally chosen

links. Personal tools differ from profile-based personalization because it is the user, not the software that creates the personalization. (Wu et al, 2002)

**Rules based**: This is probably the easiest technique to understand and implement. Designers must know ahead of time what the condition is, what to do about it, and it is often similar to an if/then type format. For instance, Business A knows that they have printer paper overstocked, so they decide they need to get rid of it somehow. So, if a customer adds a printer to their "shopping cart," they are then prompted with a request whether they want to buy some printer paper. The business could also incorporate sales or discounts in this approach - if a customer buys a printer, we'll sell them paper at half price. (Payne, 2000)

**Recommender systems**: Collaborative and content filtering are two of the most common methods used in this category. Collaborative filtering compares a user's tastes with those of other users in order to build up a picture of like-minded people. The choice of content is then based on the assumption that this particular user will value that which the like-minded people also enjoyed. The preferences of the community of like-minded people are used to predict appropriate content. The user's tastes are either inferred from their previous actions (for example buying a book, or viewing a product is assumed to show an interest (or taste) for that product) or else measured directly by asking the user to rate products. This method has an advantage of speed and efficiency in computation, thus delivering rapid feedback.

The reliance on a 'critical mass' of users can be a problem for collaborative filtering; a small sample population may lead to lower-quality recommendations. The quality of recommendations increases with the size of the user population. Another potential limitation is the inability to make a recommendation for an unusual user if a match with a like-minded set cannot be found. Collaborative filtering may be less important as a technique when categories of users and preferences are already well-known and well-defined. (Bonett, 2001) Content filtering generates recommendations similar to collaborative filtering, but instead of matching a user to other users, the user's preference profile is matched to information known about each of the products on the website. The closest matches are then recommended to the user (Wu et al, 2002).

**Clickstream analysis:** This is the technique of collecting data about user movements on a website. It can be used to record a track of the links visited, including where a user came from, their route through the website and their destination on exiting the site. Link analysis can include observations of the links clicked and their associated position on the screen, time spent within a page and making connections between links visited and consequences (e.g. purchase

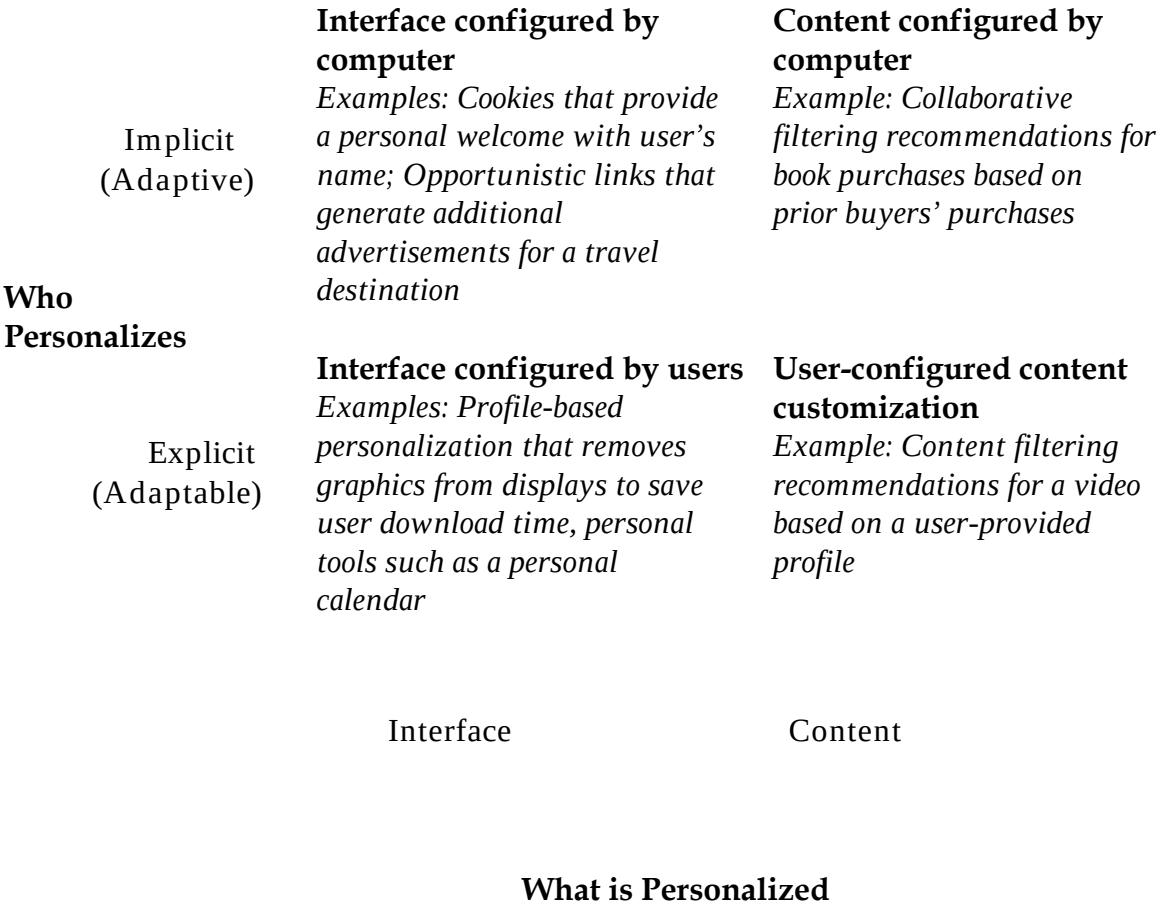
made). This method of learning about users from their behaviour imposes the least extra work on the user. However it is also the most subtle since it happens transparently. The information gathered can be intensively processed, giving insight into the make up of visitors using the site. It can be used for characterising users and segmenting customers.

### 2.1.5. Personalization framework

Personalization as a concept is a very broad one, its meaning in practice differs from one context to another. In order to reconcile these differences and create a coherent basis for the identification, analysis and more importantly implementation of personalization techniques within specific contexts a framework is very relevant. Wu et al (2003) have developed a useful tool in this regard. They have developed a conceptual framework based on "(*1) how much active vs. passive input has to be provided by the user and (2) what types of personalized changes are experienced by the user.*"

They use this approach for categorizing personalization interventions, because according to them "*it represents the interaction of the user with the [interface] website which we believe to be the primary concern of [the providers] website owners.*" (See diagram below).

**Figure 1: Conceptual framework of personalization (Wu et al, 2002)**




This model helps capture in a concise way the interaction of the user with the interface (or website as is the case in this model). This is useful in characterizing the different kinds of personalization, where the input is coming from and what areas it influences. It is a 2 by 2 categorization of 'who or what 'does the personalization. If the user actively and knowingly does the personalization, then the personalization is *explicit*. If, on the other hand, the personalization is

achieved by the website collecting information on the user's activity at the website, e.g. product purchases, time spent at various pages displayed, etc etc., without the user being fully aware of the underlying activity then the personalization is *implicit*.

The second two categories deal with what is personalized. If the organization of information on the web page and the appearance of this information are adapted to user needs, the interface is personalized. If, on the other hand, the information or links to information are modified to match a user's perceived needs, the content is personalized (Wu et al, 2002). The main advantage of this model is that it enables the easy classification and analysis of the different types of personalization interventions and techniques. This is useful when an overview is required for decision making purposes with regards to which personalization strategy and technique is most appropriate in a particular situation. It is also useful as a tool for analysing personalization interventions.

However a problem with this framework is that it only shows the possibilities for personalization, it does not show the relevance and gives no indication as to the sensitivity of adopting different techniques within the different contexts. For instance the framework shows that collaborative filtering can be used to adapt content to user needs, it doesn't say whether it is an effective or acceptable way of achieving this goal.

## 2.2. Online Banking

Online banking is a relatively new phenomenon; it has gained prominence in recent years as a result of the rapid and massive adoption of new media technologies, particularly the Internet. Online banking can be defined as "*A system allowing individuals to perform banking activities at home, via the Internet*" (Investor words, 2005), as "*Services that provide banking transactions electronically*" (Bitpipe, 2005). Online banking was first adopted on October 6, 1995 in the United States of America, when the Presidential Savings Bank offered its customers an online alternative to traditional banking, (Presidential Savings Bank, 2005). Online banking usage has grown very rapidly, according to current estimates by Pew research; more than 50 million adults in the United States do their banking online. (Sullivan, 2005)

Rapid adoption of online banking has been as a result of certain unique benefits which it confers.

(1) It is convenient, as it enables year round 24hour access.

(2) It is ubiquitous as you can access your account anywhere there is an Internet connection.
(3) It is fast; as transactions can be completed and confirmed within seconds,
(4) It is efficient; as you can manage all your accounts and transactions from one site,
(5) It is effective; as many banking sites can offer sophisticated tools, information and integration with local software packages.

Online banking however has few drawbacks which are gradually being addressed such as complicated and time consuming setup procedure, users may be forced into a steep learning curve to enable them navigate the site effectively. Users also need to have basic computer skills and Internet knowledge as well as be connected to an Internet Service Provider (ISP).

Trust is also reason why some individuals have refused to set up online accounts. Trust here is at three levels: Firstly trust in the provider, trust in the ability of the technology platform to deliver without errors or failure, and trust in one's capacity to operate the system properly. Putting one's confidence in software and a faceless network of computers takes a while to develop, (Bruce, 2003). In spite of these challenges Internet banking has been a huge success, it has even been described as "one of the most important changes within the retail financial industry in the last hundred years…" (Hiltunen, Heng, Helgesen, 2004, 119)

Most of the major banks in the world, particularly those in the developed nations offer Internet banking services. For instance all banks operating in the Netherlands offer Internet banking services. The Internet has thus become the frontline in the battle to acquire new as well as retain the old customers. The consequence of this is that opening and closing an account is just a click away. Attracting customers and maintaining traditional loyalties which were cultivated and maintained by personal contact with specialized staff, strategically located offices and awe/confidence inspiring structures are becoming increasingly irrelevant. The challenge facing most banks is how to create in the online environment a differentiating experience that would give them a competitive advantage. Personalization is one of the major strategies being used to enhance the online interaction between the customers and the banks.

## 2.3. Personalization in online banking

The banking industry has been in the forefront of the e-commerce revolution. The adoption of the Internet channel in banking has been very rapid, however the very advantages that make it such an attractive channel to use, makes it difficult to differentiate and gain competitive advantage. The webpage being the main access point makes it difficult to offer services that competitors cannot duplicate quickly and cheaply. It is this situation and the need for firms to differentiate their services from that of their competitors that have brought the adoption of personalization to the forefront. A leading ecommerce research firm Jupiter Communications has stated that it is those financial services that invest heavily in personalization that will succeed in the online environment, (Inos, 2001). Another such firm The Tower Group opined that a banks ability to react, change and embrace new novel situations will separate the winners from losers, (Eckenrode, 2006, 8).

Personalization is one of the strategies being adopted by banks to enable them create competitive advantage in the online channel. (Hiltunen et al, 1994, 126) have argued that personalization in online banking is a "win-win" situation, because the key ingredients necessary to make it work are present in the bank – customer relationship, namely frequent usage and personal customer information. They go further to highlight several benefits derivable both by the bank and the customers. According to them the bank would benefit by gaining more loyal customers, selling more, create a competitive edge and increase the trust from its customers. The users will benefit by saving time, enjoying added value services, financial and other benefits, increased trust, improved user experience and reduced cognitive workload.

Inspite of these advantages implementing personalization is quite a daunting task. Personalization is not an exact science and the room for error is almost non existent in banking, therefore banks have to 'get it right' the first time. They need to understand thoroughly the underlying issues, as well as the implementation issues involved with regards to personalizing for their customers as any error may be severely punished. According to a survey by the Ponemon Institute, (Ponemon, 2005), "*one privacy breach would cause 57% of customers with a high level of trust in their banks to take their business to a competitor.*" The essence of this research is to look into the underlying and immediate influences on acceptance of personalization in online banking with a view to understanding them and proffering solutions to avoid the pitfalls.

## 2.4. Commitment-Trust Theory

Personalization as a competitive strategy in a business to consumer (B2C) environment is all about building relationships. Personalization is one of the strategies at the heart of relationship marketing. Consequently for us to understanding Personalization and the underlying constructs influencing it we need to look to relationship marketing theory. Relationship marketing has been variously regarded as a paradigm shift (Kotler, 1991, Parvatiyar, Sheth, and Whittington, 1992) because it proposed that marketing relations will change from being predatory and competitive to collaborative and relational (Bleek and Ernst, 1993, 1). The Commitment-Trust theory was developed by Morgan and Hunt (1994, 20) to explain this shift; they theorize that successful relationship marketing requires relationship commitment and trust. They then model relationship commitment and trust as key mediating variables.

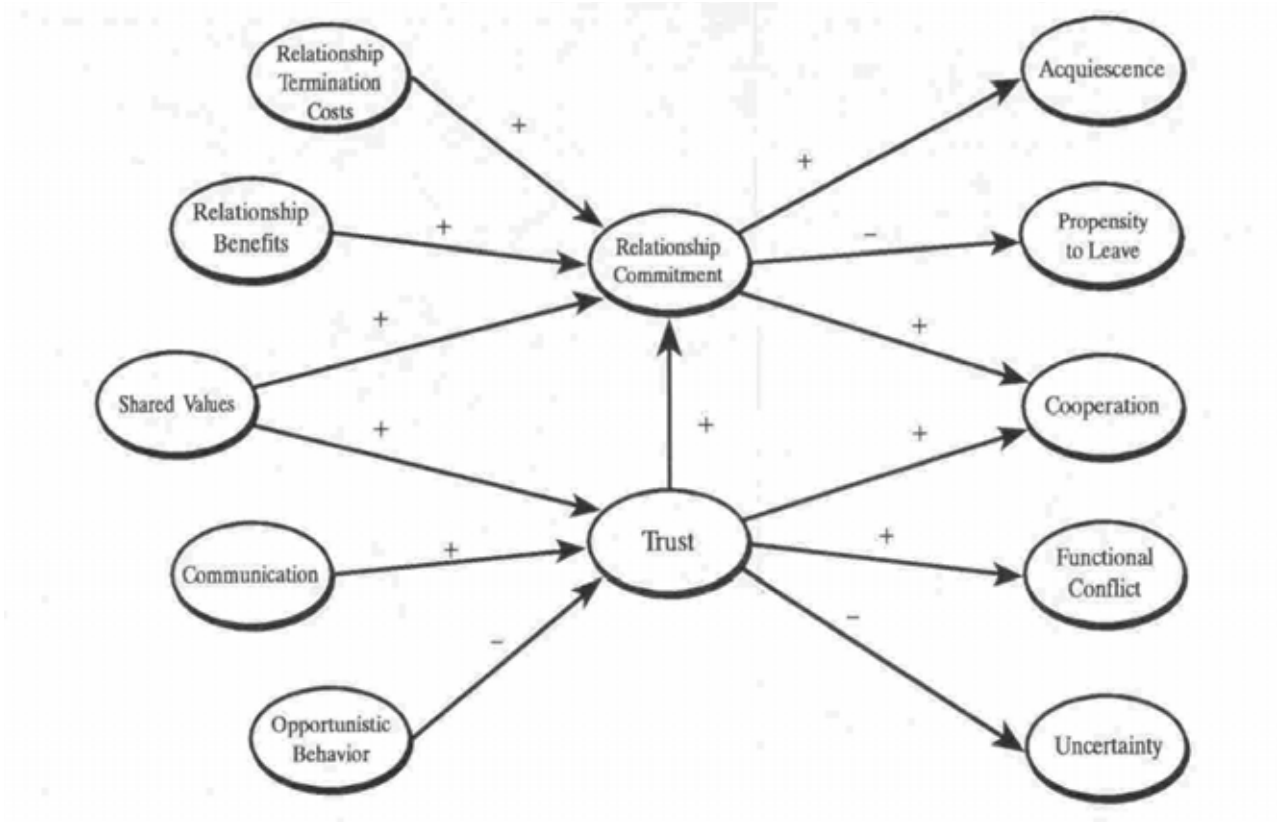
According to them understanding relationship marketing "*requires distinguishing between the discrete transaction, which has a 'distinct beginning, short duration, and sharp ending by performance,' and relational exchange, which 'traces to previous agreements [and]…is longer in duration, reflecting an ongoing process'* (Dwyer, Schurr and Oh, 1987 cited in Morgan and Hunt, 1994, 21). Also according to Morgan and Hunt (1994, 21) relationship marketing is "*…all marketing activities directed toward establishing, developing, and maintaining successful relational exchanges.*" This definition clearly shows that the emphasis is on the process, the relationship how it is developed and maintained. This is essentially what personalization is all about and this is where building blocks or the underlying factors behind personalization can be seen.

The kernel of their theory is that commitment and trust are fundamental to successful relationship marketing and not power. According to them commitment and trust are 'key' because "*they encourage marketers to;*

*(1) work at preserving relationship investments by cooperating with exchange partners,*
*(2) resist attractive short-term benefits of staying with existing partners, and*
*(3) view potentially high-risk actions as being prudent because of the belief that their partners will not act opportunistically…*" Morgan and Hunt (1994, 21)

Their model shows the relationship between 12 variables, 5 antecedents and 5 outcomes, with relationship commitment and trust in-between as 'key mediating variables'. See model below.

**Figure 2: The Commitment-Trust Theory (Key Mediating Variable) model of relationship marketing (Morgan & Hunt, 1994, 22)**




The Commitment-Trust Theory was developed within the context of a 'Brick and mortar' world to show the underlying constructs in relationship marketing and their interaction. It also showed how these interactions influenced outcomes positively or negatively. Personalization in its current form has been driven by new media technologies and is primarily a creation of a different era; however the underlying, goals, intentions and constructs are the same. Personalization is essentially part of a relationship marketing strategy. The Commitment-Trust Theory thus offers us a good platform to analyze current personalization efforts with regards to understanding the underlying constructs behind it and provide some predictive value as to the efficacy or otherwise of a particular intervention. As was stated earlier the model is built on the relationship between 12 constructs and we want to briefly highlight them here.

### 2.4.1. Relationship commitment

Relationship commitment is one of the key mediating variables in this theory. Morgan and Hunt (1994, 23) define "*relationship commitment as an exchange partner believing that an ongoing relationship with another is so important as to warrant maximum efforts at maintaining it; that is, the committed party believes the relationship is worth working on to ensure that it endures indefinitely*." Relationship commitment according to them is central to relationship marketing. This is an interesting concept in commercial relationships because it implies an intention to work on the relationship to make it successful even when it goes against strict rational economic principles. This concept is founded in social exchange theory, and is the basis of interpersonal relationships such as marriage. (Thompson and Spanier, 1983) It is gradually being introduced into economic and inter-organizational theory.

While theorists such as Cook and Emerson (1978, 728) and McDonald (1981, 836) view commitment as the central distinguishing feature between economic and social exchange, Morgan and Hunt (1994, 23) on the contrary believe that it is central to relationship marketing, which brings it under economic theory. Berry and Parasuraman (1991, 139) have also argued along the lines of Morgan and Hunt, they say "*Relationships are built on the foundation of mutual commitment*" Morgan and Hunt (1994, 23) have further stated that "As brand attitude becomes central to the repurchase decision in relational exchange, brand loyalty becomes increasingly similar to our conceptualization of commitment." Personalization is at the centre of relational exchange, it facilitates and is facilitated by relational exchanges in a continuously recursive cycle.

According to Kwon and Suh (2004, 6) "…*commitment is central to all of the relational exchanges between the firm and its various partners.*" Commitment is thus a key element in the success of any personalization effort.

### 2.4.2. Trust

Trust is a very widely researched construct and is a central concept in exchange relationships. Reviewing the literature on trust however show that conceptualizing it can be a daunting task (McKnight, Cummings & Chervany, 1996). There is a "*confusing potpourri*" (Shapiro, 1987a, 625) of definitions in literature and this has made it difficult to give a concise meaning to it. Researchers such as Smith (1990) have described it as a '*homonymy*' meaning that it is actually a label for different concepts. Trust has been defined as an attitude (Kegan & Rubenstein, 1973); confidence (Cohen, 1966); a behaviour, (Zand, 1972);

a belief or set of beliefs (Barber, 1983; Bromiley and Cummings, 1995; Rotter, 1967); an expectancy (Rotter, 1980). The reason for this is that trust is a 'key enabler' in all relationships and is multifaceted and can be applied at different levels (McKnight, Cummings & Chervany, 1996).

For this research we have adopted the conceptualization given by Morgan and Hunt (1994, 23). They state that trust exists when "*…one party has confidence in an exchange partner's reliability and integrity*." They rely on Rotter's (1967, 651) classical view which states that trust is "*a generalized expectancy held by an individual that the word of another…can be relied on*." Certain key qualities can be distilled from these conceptualizations such as confidence, reliability, integrity, consistency, competency, honesty, fairness, responsibility, helpfulness and benevolence, (Morgan and Hunt, 1994, 23). These are attributes which are essential for the development of any successful exchange relationship. Trust is not static, it is formed over time and may be strengthened or weakened depending on the actions or inactions of exchange partners.

In this research we approach trust from a holistic point of view rather than a 'narrow' web-centred point of view. This is firstly because we want to capture the underlying effect of trust in its entirety as it influences personalization. While we recognize that there are a myriad of factors influencing trust in this medium, we also recognize that banking has certain peculiar characteristics which may not hold for other online industries. Banking is based primarily on trust and integrity, which has to be real and not just perceived, because the customer and regulatory authorities demand it. There are other issues such as website design, level of feedback, consistency, level of down-time etc. These things influence to some degree the level of confidence and integrity we have toward the service and ultimately towards the provider. However our focus here is directed to Trust in relation to the organization and not as it relates to the communication medium.

Trust however is still a major issue and as has been cited earlier, one survey by the Ponemon Institute, has concluded that a single privacy breach could cause more than half of the customers with a high level of trust in their bank to move to another provider (Ponemon, 2005). However we are of the view that the trust we have in the provider is the dominant factor and thus conceptualize and measure trust in this way, rather than as a measure of our experience with the site.

### 2.4.3. Relationship terminations cost

Termination costs are all expected losses from termination and result from the perceived lack of comparable potential alternative partners, relationship

dissolution expenses, and/or substantial switching costs. The argument here is that in any marketing relationship changing partners has a certain cost, which creates a level of dependency between the two parties. The strength of this dependency will depend on the difficulty or otherwise (cost) of getting another partner of comparable value to the first. According to Morgan and Hunt(1994, 24) "*Termination costs are, therefore, all expected losses from the termination and result from the perceived lack of comparable potential alternative partners, relationship dissolution expenses, and/or substantial switching costs*."

The switching cost in the online banking industry have been gradually eroded, particularly as most banks have moved most of their retail banking operations to the online environment. Personalization is actually intended to increase the switching cost in this environment, however due to the fact that it is at an early stage of deployment it may not pose much of a deterrent to switching. We are of the opinion that this construct will not have a significant influence on acceptance of personalization in online banking.

### 2.4.4. Relationship benefits

Relationship benefits are the benefits derivable by each party as a result of their interaction with each other. Sweeney and Web (2002, 2), have identified benefit from the buyer [customer] side and well as benefits on the supplier [providers] side, they say "*from the buyer's viewpoint, improved overall quality, an expanded product mix, increased customer satisfaction, reduced costs and prices, protection of the investment and from the supplier's viewpoint contract predictability, price and production stability, increased R & D effectiveness, lowering of transaction costs that would be spent on safeguarding competition, customer feedback,…*"
Partners that deliver superior benefits will be highly valued; firms [individuals] will commit themselves to establishing, developing, and maintaining relationships with such partners.

Online banking has conferred huge added benefits to the customers, however all differentiating benefits are gradually being eroded as most banks offer almost identical services. We can discount the goodwill and familiarity customers have towards their banks and we posit that it will have a significant influence on their acceptance of any personalization effort.

### 2.4.5. Shared values

Shared values "*…is the extent to which partners have beliefs in common about what behaviours, goals and policies are important or unimportant, appropriate or inappropriate, and right or wrong. When exchange partners share values, they indeed*

*will be more committed to their relationships…*" (Morgan and Hunt, 1994, 25). Shared values have been described as being important to any relationship building strategy as it helps foster trust between two parties (Halliday and Christy, 2003).

### 2.4.6. Communication

Communication can be defined broadly as "*the formal as well as informal sharing of meaningful and timely information between firms [individuals and firms*]" (Anderson and Narus, 1990, 44). Communications is a major precursor to trust, especially when it is timely. It helps in resolving disputes, aligning perceptions and expectations (Etgar, 1979, 77). Communication that is timely, relevant and reliable will build trust in the relationship. (Morgan and Hunt, 1994)

### 2.4.7. Opportunistic Behaviour

Opportunistic behaviour implies that one partner in a relationship acts in their own interest to the detriment of the interest of their partner. Williamson (1975, 6) has defined this concept as "*self-interest seeking with guile*". In any relationship there is some level of interdependence and with this comes the possibility of acting in a cooperative or opportunistic manner. According to Steinmueller (2004, 2) this is one of the underlying factors determining trust. According to him the expected behaviour of the parties in such relationships will determine the level of trust. Morgan and Hunt (1994, 25) have also found that the perception of a party that their partners are acting opportunistically will lead to decreased trust.

### 2.4.8. Acquiescence

Acquiescence is *"…the degree to which a partner accepts or adheres to another's specific requests or policies…"*(Morgan and Hunt, 1994, 25). According to them relationship commitment positively influences acquiescence, while trust influences it indirectly through its influence on commitment.

### 2.4.9. Propensity to leave

Propensity to leave connotes the willingness/unwillingness of a partner leaving a particular relationship. Propensity to leave is the perceived probability that a partner will end the relationship in the (reasonably) near future (Bluedorn, 1982). According to Morgan and Hunt (1994, 26) there is a strong negative relationship

between relationship commitment and propensity to leave. In other words the higher the relationship commitment the less relationship partners are likely to leave each other, and vice versa.

### 2.5.0. Cooperation

Cooperation can be said to take place when two or more parties work together to achieve mutual goals, (Anderson and Narus, 1990). According to Morgan and Hunt (1994, 26) cooperation implies coordination. Coordination according to them is a function of commitment and trust rather than the interplay of 'power and conflict' relationships. They question the role of power as the underlining principle behind coordination, they say "*Why the focus on power? Because, as the epigraph quote from Alderson reminds us, marketers have long noted the absence of a theory that explains cooperation. The commitment-trust theory contributes to that long sought goal.*"(Morgan and Hunt, 1994, 26). While commitment and trust may play a role in determining cooperation we should not be quick to discount the value of power and conflict in shaping cooperative relationships.

### 2.5.1. Functional conflict

Functional conflict has been defined as "*a constructive challenging of ideas, beliefs, and assumptions, respect for other's view point even when parties disagree, and consultative interactions involving useful give and take.*" (Massey and Dawes, 2004, 6). Differences of opinions, beliefs and intentions will give rise to disagreements among parties in relationships, this is a natural process. The challenge for the parties is how to resolve these differences. When it is done amicably, such disputes can be referred to as 'functional conflicts' "*because they prevent stagnation, stimulate interest and curiosity…*" Morgan and Hunt (1994, 26).

### 2.5.2. Decision-making uncertainty

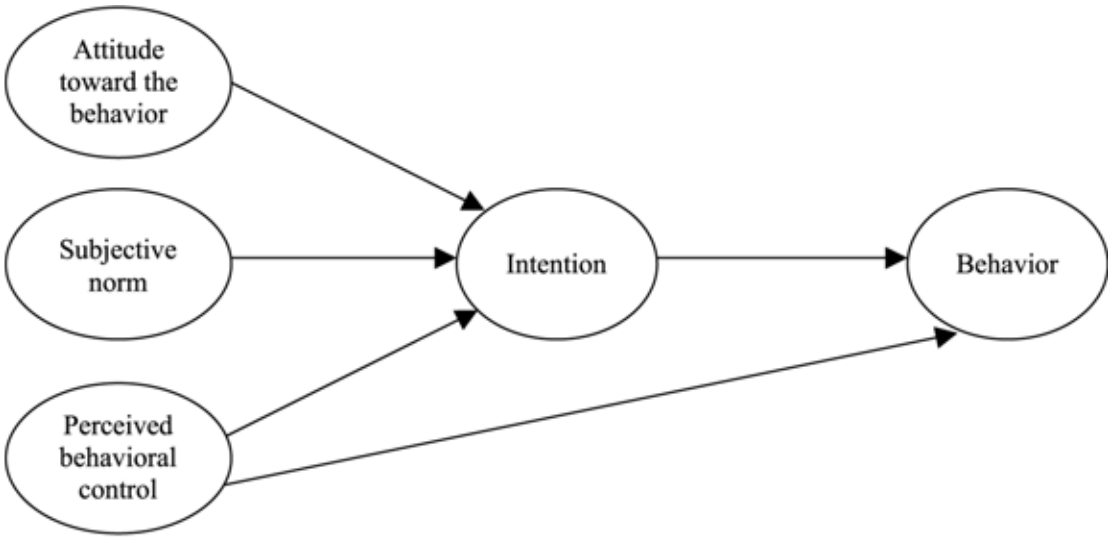
Uncertainty has to do with the degree of confidence that one can judge a situation and act accordingly. Morgan and Hunt (1994, 26) referencing Achrol and Stern (1988) have stated that uncertainty in decision making refers to the degree to which a partner (1) has sufficient information to make crucial decisions, (2) can predict the outcomes of those decisions, and (3) has confidence in those decisions. They have also stated that as trust between parties in an exchange relationship increases, it will cause decision-making uncertainty to decrease, as the trusting party would have the confidence in the trustworthiness of the partner.

In the above section we have introduced the Commitment-Trust theory and highlighted the various constructs used in this model. In the next section we look into the second theoretical framework used in this study, The Theory of Planned Behaviour (TPB) and its attendant constructs.

## 2.5. Theory of Planned Behaviour

The theory of Planned behaviour (TPB) (Ajzen, 1985, 1991; Mathieson, 1991) is an extension of the theory of reasoned action (TRA) developed by Ajzen and Fishbein (1980). Both theories were developed to predict and understand motivational influences on behaviour, identify how and where to target strategies for changing behaviour and to explain such behaviours (Brown, 1999). According to the theories the most important determinant of human behaviour is behavioural intention. The individual's intention to perform certain behaviour is a combination of the person's attitude towards performing that behaviour and the subjective norm. The extension included in TPB adds perceived behavioural control to the predictors of intention. This is because it is recognized that not all behaviours are in the volitional control of the individual.

**Figure 3: Theory of Planned behaviour model (Azjen, 1991)**




**Source:** From Azjen (1991)

The TPB has been used in many studies in information systems literature (Mathieson, 1991; Taylor and Todd, 1995a, b; Harrison et al., 1997). Predicting behavioural intention and actual behaviour is extremely useful in the online environment. This medium has the peculiar characteristics of speed, ubiquity and wide reach; this holds huge advantages for businesses as they can now reach large user groups, in a timely manner. However the disadvantage of this is that errors and miss-steps are glaring and may propagate very fast over large audiences. This leaves very little margin for error for any prospective online business venture. Being able to predict user behaviour and its antecedents in relation to an online venture are of crucial importance. Personalization in online banking is no exception to this; it even takes on a more sensitive nature as a result of the underlying intention of facilitating relationships.

According to a study in adoption of online banking by Shih and Fang (2004, 220-221) attitude and perceived behavioural control could be used to explain behaviour. They found that subjective norm did not have any predictive value. Another study by Tan and Teo (2000, 31), found that attitude, subjective norm and perceived behavioural control had an influence. Like Shih et al (2004, 220-221) they found that only attitude and perceived behavioural control had a significant effect. While these studies where focused on online banking, the current study is in personalization within online banking. The emphasis is thus on current customers and not so much on new ones. We believe that attitudes formed during interaction with the banking website would form the basis of the user's attitude towards the personalization of the site.

The normative beliefs of user within the online banking environment would not differ much with regards to personalization within the same environment. We believe the subjective norm will not have a significant effect on behavioural intention, and that the outcomes here will mirror that of Tan and Teo (2000, 31) and Shih et al (2004), where no significant effect was found. We believe the effect of perceived behavioural control will be significant. Ajzen (1991) compares this construct to Bandura's (1997) concept of self efficacy, or the belief in ones competence to perform an action. This we believe will be significant in predicting behavioural intention towards personalization in an online environment.

## 2.6. Control (data)

Control over personal data is a major factor which we believe would influence the acceptance of personalization in online banking and we have consequently included it in our model. In most of the research literature this construct is

formulated as privacy, however we feel more inclined to view this issue as one of control over personal data than that of privacy. A review of the definitions of, and thinking behind privacy shows that control is the central issue. Olivero and Lunt (2002, 244) quoting Westin (1967) have defined privacy as "*the claim of individuals to determine for themselves, when, how and to what extent information about them is communicated to others…*" Kobsa and Teltzrow (2004, 1) have stated in relation to privacy that "*…in the relationship between companies and Internet users. … knowing how their data will be used would be an important factor in their decision on whether or not to disclose personal data."*

Ackerman, Darrell and Weitzner (2000) puts it in a very succinct fashion when they say "*privacy is intrinsically bound up with control – who control what information and well as applications and systems that construct and disseminate that information*." From these definitions and statements we can infer that in the online environment what we regard as privacy is actually an issue of control.

## 2.7. Control (Self-efficacy)

Control (self-efficacy) (CTR_SE) is the same as Perceived Behavioural control as defined by Ajzen (1985). Ajzen defined Perceived behavioural control as "people's perceptions of their ability to perform a given behaviour." This is a concept that is derived from Social cognitive theory. According to Bandura (1986, 391) self-efficacy beliefs are "people's judgments of their capabilities to organize and execute courses of action required to attain designated types of performances''. Self-efficacy is a strong motivating factor and has been proposed as one of essential factor determining behaviour. According to Pajares (2002) ''Self-efficacy beliefs provide the foundation for human motivation, well-being, and personal accomplishment. This is because unless people believe that their actions can produce the outcomes they desire, they have little incentive to act or to persevere in the face of difficulties.''

We believe Control (self-efficacy) because of its ability to determine and shape behaviour will be a key factor in determining acceptance of personalization in online banking.

## 2.8. Problem and Hypothesis

Personalization is not an end in itself but a strategy to achieve a qualitative and fulfilling interactive relationship. The essence of having such a relationship is to

enable the organization better anticipate and meet the needs of their clients. The online environment makes this a particularly challenging venture, because the human (inter)face has to be replaced by computer with its logic which is still very rudimentary and basic in terms of its ability to analyse human interaction. While the criterion for building relationships transcends all contexts the icons and interactive elements applicable in the online environment differs to some degree from that in the traditional 'bricks and mortar' realm. While a lot of research has focused on personalization, very few have focused on its application to online banking.

The banking industry has been in the forefront in the migration of services to the Internet. The advantages for banking online as stated above are very obvious; however there is a gradual trend towards the commoditization of this service. This has led banks to push the curve further with regards to their services and how they are rendered. Personalization is crucial to this process, and understandings of which underlying and immediate factors influencing its acceptance are invaluable in this regard.

### 2.8.1. Research questions:

To enable us properly explore the research area we have proposed the following research questions.

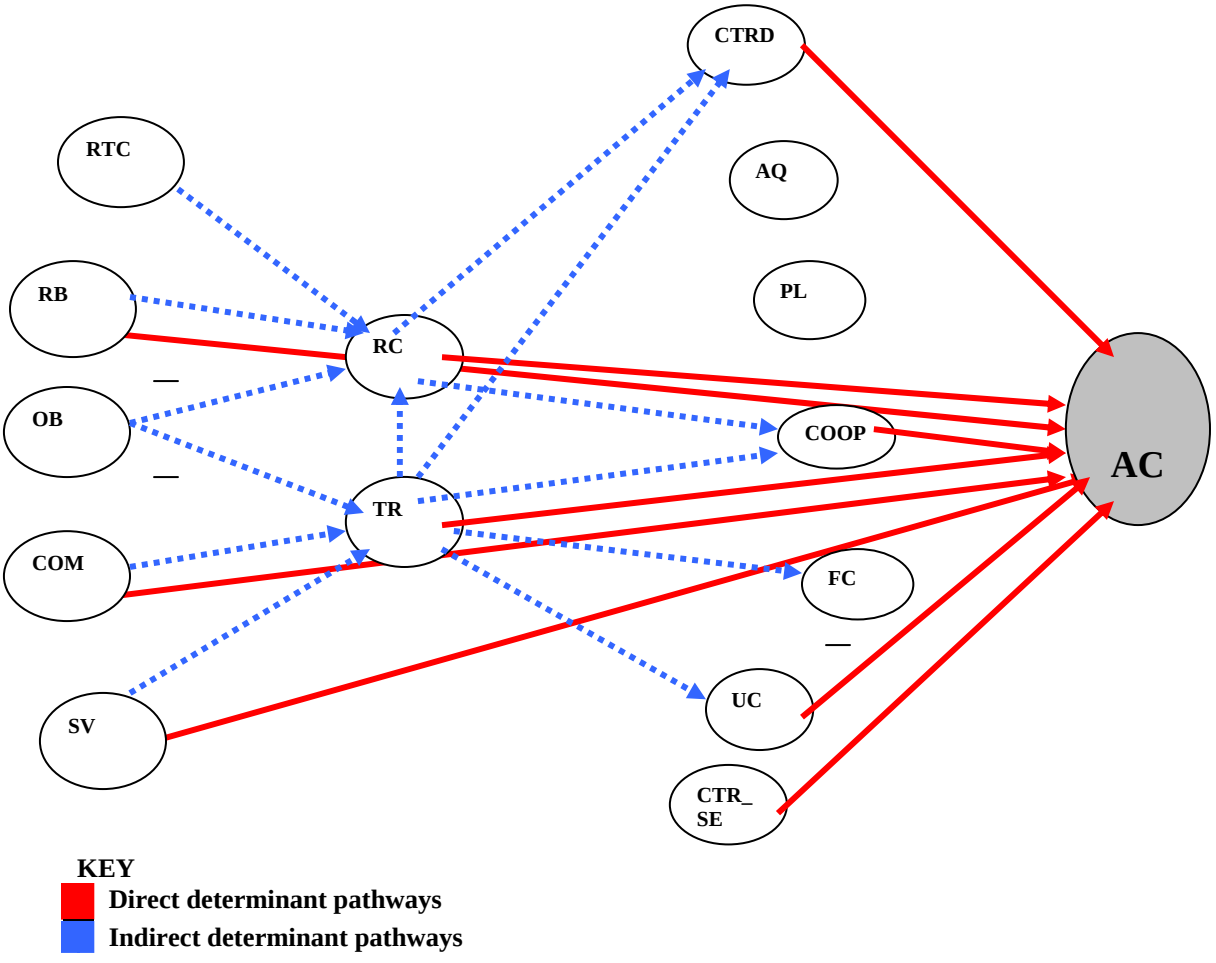
- What are the underlying factors that influence the acceptance of personalization in online banking?
- To what degree do they influence the acceptance of online banking?
- What are the immediate causes of acceptance in online banking?

We have approached this research from the point of view that personalization is a strategy to achieve relationship marketing goals. We have therefore adopted the Commitment-Trust theory as a framework to investigate the acceptance of personalization in online banking. We believe that most of the underlying factors influencing personalization and relationship marketing are identical. It is our view that by using this key relationship marketing framework we will be able to successfully model the determining factors influencing the acceptance of personalization in online banking. While we recognize that not all the constructs measured in the original model developed by Morgan and Hunt (1994) may be relevant to the online environment for completeness we test all relationships highlighted in the model.

We have also adopted the Theory of Planned Behaviour as an alternate theory to predict Acceptance and for comparison. Furthermore we have added the constructs Control (of data) and Control (self-efficacy). We are measuring control as two separate constructs, because while the underlying issue is control the focus in either case is completely different.

We propose the following hypothesis highlighted in the diagram (figure 1) below; all red lines indicate a hypothesized direct predictive relationship between a variable and Acceptance. All blue broken lines indicate all other indirect relationships. Where the expected relationships are negative the (-) sign is inserted.

**Figure 4: Hypothesized pathways**



The above diagram shows all the predicted significant pathways. We have enlarged placed the variables Acceptance further out then the other for emphasis. In the next chapter we look at the methods adopted in carrying out this research.

# 3. Method

We have approached this research from a deductive point of view, testing a number of hypotheses framed on the theoretical background of the Commitment-Trust Theory and the Theory of Planned Behaviour. The research design was crafted in a way as to enable us accomplish the goals of this research as practically as possible within the limitation imposed by the context of the research. This area of research is a highly sensitive and newly evolving one. This posed a lot of challenges, particularly in the area of access. We adopted a multi-method approach in this research so as to enable triangulation as we recognize that each strategy has its unique weaknesses and strengths, (Smith, 1975). For this study we thus combine the Survey, Case study and Explanatory methods, (Saunders, Lewis, Thornhill, 1996, 92-99)

The Survey method was adopted because of the ability it gave us to "*gather large amounts of data from a sizeable population in a highly economical way*" (Saunders, Lewis, Thornhill, 1996, 93, 94). This is the best means of collecting standardized data in a large scale way. It was useful in measuring the constructs under study in this research across a reasonably representative sample. The Case study approach was adopted because it enabled us get some depth in relation to specific personalization issues in a particular bank. This we believe will lead to more concrete results which can also be generalized to other user populations. This research was primarily an explanatory one even though other methods were used. It was thus very important for us to use tools that facilitate the explanatory process. This was very useful as it gave more insight into the concepts and processes under study.

Three instruments were used in this regard, namely structured questionnaires, semi-structured interviews and focus group. These three instruments were employed to correspond to the three different methods highlighted above.

## 3.2. Participants

The first and primary characteristic of the participants in this research was that they were all users of online banking services. They were made up of a mix of men and women within the ages of 18 to 65. The selection of individuals was based on 'Convenience sampling' (Schonlau, Fricker, Elliott, 2002), 'Purposive

sampling' and on 'Self-selection sampling' (Saunders et al, 1996) depending on the instrument being used. These methods have been indicated as being the most practical for business research, market surveys and case studies, where alternative sampling methods may not be possible. This is particularly relevant where the research is exploratory in nature (Saunders et al, 1996).

For the structured questionnaires the 'self-selection sampling' method was adopted. Individuals who fitted the reference frame of having online banking accounts were solicited through various means such as adverts, direct and indirect requests. They were then directed to a particular web address where the questionnaire could be found. The respondents were made up of students, workers, self-employed individuals and the unemployed. The participants for the semi-structured interviews were selected using purposive sampling as they were chosen from a pool of respondents corresponding to the various segments within the bank involved in the research. A total of 7 participants were involved in the semi-structured interviews.

The participants for the Focus groups were chosen using the 'convenience sampling' (Schonlau, et al, 2002) method. Direct solicitations were made to participant who then chose whether to participate or not. One meeting with a group of 5 students of a Dutch university was held.

## 3.3. Instruments

### 3.3.1. Structured questionnaire

A structured questionnaire was developed to measure all the constructs being under study in this research. A modified version of the Morgan and Hunt (1994) instrument was used to measure, Opportunistic behaviour, Trust, Acquiescence, Propensity to leave, Cooperation, Functional conflict, and Uncertainty. A modified version of Odekerken-Schroder and Bloemer (2000) instrument was used to measure Relationship termination cost. Relationship commitment was measured by an instrument developed by Gurviez and Korchia (2003). Relationship benefits and Communication & Information exchange were measured by a modified version of Lancastre and Lages (2004) instrument. Attitude, Subjective Norm, Usage and Intention to use were measured by a modified version of the instrument developed by Shih and Fang (2004).

Control was measured by a modified version of the instrument developed by Dinev and Hart (2003). Lastly Acceptance was measured using an instrument we

developed ourselves. Most of the questionnaires used had to be modified as they could not be applied to online banking in the original form in which they were developed. All these various modified instruments were combined into one and then built into an online questionnaire which could be accessed by clicking on a specified URL. The questionnaire contained 63 questions, 5 were for demographic data and 58 for measuring the various constructs. All 58 questions were graded on a 7-point Likert scale.

### 3.3.2. Semi-structured interviews

The semi-structured interviews were conducted in a quiet room in an office building in Amsterdam. The researchers as well as the host bank involved drew up a list of questions which we thought were relevant to enable us elicit the responses we desired. The interviews were focused on the respondent's interaction with the Bank's website. These questions were primarily aimed at getting the clients to express their understanding and use of the banks website. This was particularly aimed towards getting their responses in relation to the personalization of the site. The main focus here was on five specific personalized aspects of the site namely; the login page, the commercial adverts, email, financial advice and the settings.

The first three of the above personalized features have been implemented to some degree; however the last two are in the pipe line and may be implemented in the near future. The essence of the interviews was to get the client's level of appreciation of the personalization the site currently offers, may be offering in the near future, and most importantly their preferences in relation to this. There were eight general topic areas and 60 sub-areas covered in these interviews. At the end of the interview the participants were thanked and led out of the room. There were seven participants in all that took part in the interviews and they were all drawn from different marketing segments within the Internet banking service.

They were selected using the 'Purposive sampling method', in other words they were chosen by the bank because they were representative of the different client segment groups. They included students, Young professionals, Regular bankers and Preferred bankers. See appendix 11 for a summary of the outcomes of these interviews.

### 3.3.3. Focus group

The Focus group meetings were held at the University of Twente campus in the Netherlands. The individuals used were selected using the 'convenience sampling' method. In other words they fell within the general reference frame and they were available and willing to take part in the research at that time. The participants were informed some days before about the time and place the meeting would be held. They were also given information about how the interviews would proceed and the number of people participating. They were told that the meeting would be recorded on video and that their consent was required. They were also told that they would be given a gift after the meetings. All the participants of the focus groups were given the structured questionnaire fill in before the meeting.

## 3.4. Procedure

The questionnaires were self-administered and could be filled over a period of time. Cookies are stored on the respondent computers which enabled to them to stop and start up again from the stoppage point. All the respondents needed to do was to click on the link to the website and fill-in the questionnaires. All questions but one had the options displayed on the page making it very easy to fill-in.

The interviews were conducted in a quiet room, with the participants sitting across from the interviewers. The interviews lasted approximately 40 minutes. As the participants came in they were taken directly to the interview room where they were asked to sit. They were then offered a drink after which they were informed about how the interview would progress and that they would be recorded on DVD and were asked to give their consent and sign an undertaking to this effect. The interview then started in earnest with the interviewer asking questions point by point based on the highlighted topic areas.

The Focus group meetings were conducted in a quiet reserved room on the university campus. As the participants arrived for the meeting they were welcomed and ushered to their sits. They were then introduced to each other and then instructed on how the meetings would be run. The meeting rooms were equipped with a computer and beamer. With this equipment screen dumps of the personalized features from the bank were shown. The participants were asked to fill a short questionnaire based on each screen shown. Discussions were held after each short questionnaire was filled. This sequence was followed

throughout the meeting, and after all the items were exhausted the participants were thanked, made to sign a consent form and given their gifts.

## 3.5. Data analysis

We used different statistical methods to analyse the collected data. In part A of chapter 4 we looked primarily for statistical differences within the gender and age categories in general and also in relation to their scoring on the questionnaire. We used the T-Test to test for mean variances between the males and females, while we used the Analysis of Variance (ANOVA) to test for mean variances between the three different age groups. In section 4.4 of part A we used Pearson correlation analysis to highlight the linear relationships between the different variables. In section B we used regression analysis to plot the significant determinant pathways between the various variables on the one hand and their relationship with Acceptance (ACC). We also used the SOBEL Test (Sobel, 1982) to highlight the indirect relationships between the variables.

The data from the semi-structured interviews and the Focus groups was analysed qualitatively using a partially ordered matrix, (see appendix 11). We use the results from this matrix to support, emphasise and confirm the results received through the questionnaires. Except of from this source can be found interspersed within the following three chapters.

# 4. Results

The aim of this research was to find out the factors influencing the acceptance of personalization in online banking. To facilitate this process we narrowed our focus to 3 problem questions namely; (1)what are the underlying factors that influence the acceptance of personalization in online banking?, (2)to what degree do they influence the acceptance of online banking?, and (3) what are the immediate causes of acceptance in online banking?. To carry this out we proposed several hypothesis (see figure 1, chapter 2). The results are highlighted in two broad categories namely, Part A and Part B; the first part (sections 4.1 to 4.4) deals with the descriptive data/output, while the second part (sections 4.5 to 4.7) deals with the output from the Commitment-Trust theory and Theory of Planned behaviour models and a comparison between the output of Morgan and Hunt and ours.

In section 4.1 we point out the respondent's characteristics by showing in detail the relevant structure and traits of the actual sample used. In section 4.2 we explain briefly how we have used the two focal variables Acceptance (ACC) and Intention to use (INTU) and why we have chosen to do so. In section 4.3 we look at the output characteristics of the different variables and the underlying questions used to measure them, while in section 4.4 we look at the relationships between Acceptance and the other variables. In section 4.5 and 4.6 we look at the results from the analysis of the models and it is here that the hypotheses are actually tested and the research questions resolved.

Lastly in section 4.7 we compare the output of our modified Morgan and Hunt (1994) model with that of the original model with a view to seeing how well they 'fit' in resolving the problem questions within our specific context (Business to Customer (B2C), online environment).

## Part A: Descriptive results of the respondents and variables in the research.

## 4.1. Characteristics of respondents

For this research we used three categories of respondents, those who filled out the questionnaire, those who took part in a focus group study and those who took part in the in-depth interviews. Out of a total of over 300 solicitations for the questionnaires, 113 responses were received of which 86 were sufficiently completed to be used in this research. The respondents were drawn from a convenience sample of the population of online banking users in the Netherlands. Our sample thus comprises male and female users of different ages and backgrounds currently using online banking facilities in one of the various banks in the Netherlands. The tables 1, 2, 3 and 4 below show some of the demographic characteristics of the respondents.

Five of the respondents who filled-out questionnaires (2 females and 3 males), took part in the focus group study. For the in-depth interviews we had 3 male and 4 female participants. The details in the remaining part of this section (4.1.1 to 4.1.4) are related to those respondents who filled out the questionnaires.

### 4.1.1. Gender of respondents

Out of our total of 86 respondents, 49 (57%) were male, 31 (36%) were female and the remaining 6 (7%) did not specify their gender. The preponderance of male respondents raises questions with regards to our ability to generalize our findings across the population as a strong male skew could obscure results that are specific for female respondents. We found a small but significant difference between the distribution of males and females, with a chi-square figure of ($x^2$= 4.05, d.f. = 1, $p<0.05$), this may have implications for generalizing the results. Therefore in the next section when a variable by variable analysis is done any observed differences will be highlighted. This we believe will be a more relevant measure of the gender differences as it will show which variables had actual significant differences.

### 4.1.2. Age of respondents

The table below highlights the different age categories of the respondents who filled out the questionnaires.

**Table 1: Age groupings of respondents**

| Age | 15-24 | 25-34 | 35-44 | 45-54 | 55-64 | 65-74 |
|---|---|---|---|---|---|---|
| No. of respondents | 22 | 30 | 27 | 5 | 1 | 1 |

The first three age group categories of respondents, 15-24, 25-34, 35-44, were distributed quite normally with a chi-square figure of ($x^2$ = 1.294, d.f. = 2, $p<0.52$), in other words they corresponded with what we would expect from the general population. However those in the other 3 age groups 45-54, 55-64, 65-74 were not distributed normally in the sample, chi-square figure ($x^2$ = 30.076, d.f. = 5, $p<0.001$). This implies that the results can not be generalized to these last three categories of user group. We used also the Deutsche bank as reference values in the analysis (Meyer, Stobbe, Haibach, 2006) We will not be using the last three groups (45-54, 55-64, 65-74) for any inter group comparison because the number of respondent is too small to show statistical difference.

### 4.1.3. Educational level of respondents

The table below highlights the different educational levels of the respondents who filled out the questionnaires.

**Table 2: Educational groupings of respondents**

| Level of Education | University HBO | MBO | HAVO/VWO | LBO/MAVO/VMBO | Other |
|---|---|---|---|---|---|
| No. of Respondents | 68 | 7 | 9 | | 2 |

The table above shows that the majority of the respondents had a university education (University 79%, non-university level 21%) It is therefore highly probable that the observed patterns from the results is due to this factor; especially since factors such as educational level and age have been indicated as influencing some of the variables under consideration such as trust (Dalton, 2005, 140). With a chi-square figure of ($x^2$ = 12.752, d.f. = 2, $p<.001$) it shows the obtained results are heavily skewed towards those with higher education and as such will be only relevant to individuals in this category. We used the findings of the Deutsche bank as reference values in the analysis (Meyer, Stobbe, Haibach, 2006).

### 4.1.4. Level of Internet usage of respondents

The table below highlights the different levels of internet usage among the respondents of the questionnaires.

**Table 3: Internet usage groupings of respondents**

| Level of Internet usage | 1x per day | 2-4x per week | 1x per week | 1x per month |
|---|---|---|---|---|
| No. of respondents | 61 | 17 | 5 | 3 |

The level of internet usage was seen by us as a factor that would influence and be influenced recursively by control (self-efficacy) and trust, the former being a measure of proficiency within the environment and the latter being a perception of the environment. However they did not vary significantly within the groups. We believe that this distribution above is fairly representative of the wider population. Different studies have given conflicting claims which has made it difficult for us to get an accurate reference (Millward Brown, 2004, SPA/Synovate, 2005); however the pattern of internet usage above is roughly between those of these two studies. We thus assume that our respondents are representative for the larger population, with regards to internet usage.

## 4.2. Acceptance (ACC), Acceptability and Intention to use (INTU)

Acceptance (ACC) is the key variable under focus in the research. We are using Acceptability in our model to measure acceptance, and those two constructs for this research should be seen as being synonymous. We will thus confine ourselves to using the term Acceptance. Intention to use (INTU) on the other hand is a technical term derived from the Theory of Reasoned Action/Planned Behaviour (TRA/TPB) (Ajzen 1985, Ajzen 1991), the Technology Acceptance model (TAM) (Davis 1986, Davis 1989) and the Unified Theory of Acceptance and Use of Technology (UTAUT) (Venkatesh, Morris, Davis, Davis, 2003). It has been identified and theorized as a precursor to behaviour, in other words it determines actual behaviour. One of the areas these theories have focused on is how user intention can be modelled to predict usage.

A major thrust of these theories is that usage intentions or actual usage is a measure of acceptance. In line with this in this research we have applied intention to use (INTU) as one of the criteria in Acceptance. We will thus not be using the term Intention to use (INTU), except when special emphasis is being made or there is a need for that distinction.

## 4.3. Characteristics of variables

In the following section we highlight in detail the results related to the variables used in this research. These are the variables drawn from the Commitment – Trust Theory (Morgan and Hunt, 1994), the Theory of Planned behaviour and the variable Control (data). We have hypothesized these variables as being predictive of acceptance of personalization in online banking (See figures 4 or 5).

### 4.3.1. Relationship commitment

One of the variables which we believe influences acceptance of personalization in online banking is Relationship commitment. Relationship commitment (RC) measured the level of commitment of the client to the relationship with the bank; it had a mean of 4.97. This shows that most clients have an above average commitment to their relationship with their banks. This is exemplified in the response on one of the questions measuring this dimension; "I think I will remain a client of my current Internet banking provider for a long time." The mean response to this question was 5.56 which was the second highest of all responses. On average clients were willing to put up with some inconvenience which is good considering that this is banking.

**Table 4: Relationship commitment**

| | **M** | **S.D.** | **Gender** | | **t** | **d.f.** | **Age group** | | | **f** |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | **Males** | **Females** | | | **15-24** | **25-34** | **35-44** | |
| **Relationship commitment** | 4.97 | .94 | 5 | 5.02 | ns | 30 | 5.01 | 5.11 | 4.79 | ns |
| Questions; | | | | | | | | | | |
| 1. Willingness to put up with inconvenience. | 4.22 | 1.14 | 4.31 | 4.10 | ns | 30 | 4.04 | 4.30 | 4.18 | ns |
| 2. Willingness to recommend current banker to others. | 5.20 | 1.19 | 5.18 | 5.23 | ns | 30 | 5.22 | 5.36 | 5.03 | ns |
| 3. Remaining a client over the long term. | 5.56 | 1.33 | 5.43 | 5.77 | ns | 30 | 5.77 | 5.66 | 5.14 | ns |

ns = Not significant
* = p<.05
** = p<.01

There were no significant differences between the genders and the different age groups.

### 4.3.2. Trust

Trust (TR) was another variable we believed would influence acceptance. It measured the confidence the client had in the bank's reliability and integrity had a mean score of 5.14. Interestingly this was the variable with the highest mean score; this shows that in general the clients trust their banks. This was to be expected as the banking industry as a whole is built on trust; it would have been very surprising if the scoring was otherwise. The results of the focus group study gives us some insight into what trust may mean in this context. The participants felt they could trust the bank to handle their finances and information prudently. However in the interviews and focus group respondents were not so sure about trusting the bank to take decisions about their own preferences (user preferences). For instance one respondent said "…the bank should give suggestions as to what can be done but I would want to control what they do."

**Table 5: Trust**

| | **M** | **S.D.** | **Gender** | | **t** | **d.f.** | **Age group** | | | **f** |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | **Males** | **Females** | | | **15-24** | **25-34** | **35-44** | |
| **Trust** | 5.14 | 1.01 | 5.31 | 5.02 | ns | 30 | 5 | 5.22 | 5.17 | ns |
| Questions; | | | | | | | | | | |
| 1. Bank trustworthiness. | 5.33 | 1.10 | 5.41 | 5.19 | ns | 30 | 5.09 | 5.33 | 5.33 | ns |
| 2. Confidence in the bank. | 5.29 | 1.02 | 5.31 | 5.26 | ns | 30 | 5.27 | 5.40 | 5.11 | ns |
| 3. Level of integrity. | 5.24 | 1.05 | 5.33 | 5.10 | ns | 30 | 5 | 5.23 | 5.25 | ns |
| 4. Complete trust | 5.19 | 1.29 | 5.37 | 4.90 | ns | 30 | 5.04 | 5.23 | 5.07 | ns |
| 5. Trusted at all times | 5.21 | 1.33 | 5.39 | 4.94 | ns | 30 | 4.81 | 5.20 | 5.33 | ns |
| 6. Honesty and truthfulness | 4.99 | 1.24 | 5.10 | 4.81 | ns | 30 | 4.77 | 4.96 | 4.96 | ns |

ns = Not significant
* = $p<.05$
** = $p<.01$

While there were no significant differences between the genders, the male respondents showed a slightly higher score on trust than the females. Also those between the ages of 25 to 34 showed a slightly higher level in their scores on trust.

### 4.3.3. Relationship termination cost

Relationship termination cost (RTC) is another variable in the Commitment-Trust theory, which we adopted for completeness. This variable measures the level of ease or difficulty with which clients can withdraw from their current providers (banks in this case). The mean score was 3.55, meaning that termination costs were relatively low. This tells us that the barriers to switching from one online banker to another are low. From the interviews we can see that some individuals hold accounts with different banks. If they are not satisfied with one they can easily switch to the other. However switching becomes more difficult as clients move away from just running a current account to having a mortgage, insurance, loan, stock trading account etc.

For instance one of the respondents for the interviews had this to say. "I am thinking about switching (multiple accounts) and putting all my accounts in this bank. But it would take quite some effort to do it".

**Table 6: Relationship termination cost**

| | **M** | **S.D.** | **Gender** | | **t** | **d.f.** | **Age group** | | | **f** |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | **Males** | **Females** | | | **15-24** | **25-34** | **35-44** | |
| **Relationship termination cost** | 3.55 | 1.21 | 3.61 | 3.46 | ns | 30 | 3.86 | 3.56 | 3.22 | ns |
| Questions; | | | | | | | | | | |
| 1. Level of difficulty in learning to use another system. | 3.21 | 1.58 | 3.43 | 2.87 | ns | 30 | 3.68 | 2.83 | 3 | ns |
| 2. Fear of not being able to get another good provider. | 3.90 | 1.54 | 3.80 | 4.06 | ns | 30 | 4.04 | 4.30 | 3.44 | ns |

ns = Not significant
* = p<.05
** = p<.01

There were no gender or age group differences observed with this variable.

### 4.3.4. Relationship benefit

Relationship benefit (RB) was another construct from the Commitment-Trust theory which we hypothesised would influence acceptance. This construct looked at the benefits derivable from using a particular online banker. The mean score for this variable was 4.97, which was the third highest mean score amongst

all the variables. This means that on average that people perceived that they derived a relatively high benefit from using their particular online banking services.

**Table 7: Relationship benefit**

| | M | S.D. | Gender | | t | d.f. | Age group | | | f |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | Males | Females | | | 15-24 | 25-34 | 35-44 | |
| **Relationship benefit** | 4.97 | .82 | 4.98 | 5.07 | ns | 30 | 5.12 | 4.94 | 4.92 | ns |
| Questions; | | | | | | | | | | |
| 1. Variety of services provided. | 4.99 | 1.32 | 4.90 | 5.13 | ns | 30 | 5.22 | 4.80 | 4.81 | ns |
| 2. Ease of use. | 5.46 | 1.21 | 5.33 | 5.68 | ns | 30 | 5.90 | 5.43 | 5.33 | ns |
| 3. Professionalism of service. | 4.78 | 1.20 | 4.78 | 4.77 | ns | 30 | 4.81 | 4.80 | 4.70 | ns |
| 4. Consistency of service | 5 | 1.13 | 4.96 | 5.06 | ns | 30 | 5.13 | 4.80 | 4.81 | ns |
| 5. Personal identification and communication | 4.84 | 1.52 | 4.92 | 4.71 | ns | 30 | 4.54 | 4.90 | 4.96 | ns |

ns = Not significant
* = p<.05
** = p<.01

There were no significant differences between gender and the age groups in their perception of relationship benefit. From the scores we can see that, 'Ease of use' and 'Consistency of service' were very important in the measurement of this construct. This is an area where the banks are getting it right and it has helped pull the score of this variable upwards. They have thus been relatively more important than the other dimensions in influencing the perception of clients with regards to the benefits they are deriving from the bank.

### 4.3.5. Shared values

Shared values (SV), was one of the constructs used in the Commitment-Trust theory, which we theorized would influence acceptance. It was a measure of the degree to which the clients identified with the values of their online bankers. The mean score was 4.09, which is the mid-point on the scale. This seems to imply that on average clients were neutral; they were not in support or against the values proposed by the banks. This was expected as would be the case in most Business to client (B2C) relationships.

**Table 8: Shared values**

| | M | S.D. | Gender | | t | d.f | Age groups | | | f |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | Males | Females | | | 15-24 | 25-34 | 35-44 | |
| **Shared values** | 4.09 | .98 | 4.33 | 3.73 | -2.79** | 30 | 4.11 | 3.96 | 4.24 | ns |
| Questions; | | | | | | | | | | |
| 1. Identifying with the banks values. | 5.19 | 1.29 | 5.39 | 4.87 | ns | 30 | 5.09 | 5 | 5.55 | ns |
| 2. Feeling more like a partner than a client. | 3.01 | 1.37 | 3.29 | 2.58 | -2.49** | 30 | 3.13 | 2.93 | 2.92 | ns |

ns = Not significant
* = p<.05
** = p<.01

We found significant differences between the overall scores for male and female respondents; this could be traced to the question which was related to whether they felt as partners with the bank. Although the average score on this question was low with a mean of 3, the male respondents felt significantly closer in relationship with the banks than the female. This could be due to different reasons, but one probable reason which was highlighted in the focus group meeting was that the males were more conversant with the operation of the banks than the females. This probably influenced their affinity to the bank.

### 4.3.6. Opportunistic behaviour

Opportunistic behaviour (OB) was derived from the Commitment-Trust theory. It measured whether the clients felt the banks were taking undue advantage of them. It recorded the second lowest score of all the variables with a mean of 3.20. This is good news for the banks as it implies that the majority of the clients view their operations as being fair.

**Table 9: Opportunistic behaviour**

| | M | S.D. | Gender | | t | d.f. | Age group | | | f |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | Males | Females | | | 15-24 | 25-34 | 35-44 | |
| **Opportunistic behaviour** | 3.20 | .87 | 3.16 | 3.24 | ns | 30 | 3.24 | 3.18 | 3.21 | ns |
| Questions; | | | | | | | | | | |
| 1. How forthright the bank is. | 3.17 | 1.43 | 3.06 | 3.28 | ns | 30 | 3.3 | 3.2 | 3.2 | ns |
| 2. Supportiveness and faithfulness of the bank. | 3.09 | 1.33 | 3.03 | 3.15 | ns | 30 | 3.2 | 3 | 3.3 | ns |
| 3. How well the bank fulfils it promises. | 3.23 | 1.12 | 3.12 | 3.34 | ns | 30 | 3.3 | 3.3 | 3.2 | ns |

ns = Not significant
* = p<.05
** = p<.01

We did not find any significant differences among the gender or age groupings with this variable.

### 4.3.7. Communications

Communication (COM) was another construct which was derived from the Commitment-Trust theory. It measured the level of information sharing between the clients and the banks. It had a mean score of 5.00 which was the second highest of all the variables, implying that the level of relevant information interchange was relatively high. This was expected given the type of relationship (banker-client) and the ability of the medium to facilitate high-speed, high-capacity bi-directional communication.

**Table 10: Communications**

| | M | S.D. | Gender | | t | d.f. | Age group | | | f |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | Males | Females | | | 15-24 | 25-34 | 35-44 | |
| **Communications** | 5 | .95 | 5.06 | 5.03 | ns | 30 | 5.14 | 4.99 | 4.96 | ns |
| Questions; | | | | | | | | | | |
| 1. Provision of tailored information. | 4.80 | 1.32 | 4.82 | 4.77 | ns | 30 | 5.04 | 4.80 | 4.55 | ns |
| 2. Provision of relevant information. | 4.70 | 1.18 | 4.71 | 4.68 | ns | 30 | 4.77 | 4.56 | 4.81 | ns |
| 3. Provision of timely information. | 4.64 | 1.23 | 4.65 | 4.61 | ns | 30 | 4.68 | 4.60 | 4.59 | ns |
| 4. Privacy of information | 5.83 | 1.07 | 5.88 | 5.74 | ns | 30 | 5.95 | 5.70 | 5.66 | ns |
| 5. Accuracy of information | 5.31 | 1.15 | 5.29 | 5.35 | ns | 30 | 5.27 | 5.30 | 5.18 | ns |

ns = Not significant
* = p<.05
** = p<.01

We did not find any significant difference between the genders and age grouping. The means of the last two questions measuring this variable are quite high indicating that respondents rate the banks highly in terms of keeping their information private and their ability to supply accurate information.

### 4.3.8. Acquiescence

Acquiescence (ACQ) was also derived from the Commitment-Trust theory and we have thus included it in our model. It measured the level to which clients agreed or disagreed with their banks policies. It had a mean score of 4.60. This is above the average which is 4, showing that clients on average accepted the banks policies.

**Table 11: Acquiescence**

| | M | S.D. | Gender | | t | d.f. | Age group | | | f |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | Males | Females | | | 15-24 | 25-34 | 35-44 | |
| **Acquiescence** | 4.60 | .91 | 4.60 | 4.85 | ns | 30 | 4.88 | 4.73 | 4.33 | ns |
| Questions; | | | | | | | | | | |
| 1. Acceptance of future bank policies. | 4.01 | 1.23 | 3.96 | 4.10 | ns | 30 | 4.45 | 3.90 | 3.63 | ns |
| 2. Acceptance of redesigns to my account portal. | 5.39 | 1.21 | 5.24 | 5.61 | ns | 30 | 5.13 | 5.56 | 5.03 | ns |

ns = Not significant
* = p<.05
** = p<.01

We did not find any significant differences between the different gender and age groups.

### 4.3.9. Propensity to leave

Propensity to leave (PTL) was another variable derived from the Commitment-Trust theory. It measured the likelihood of a client moving to another bank and had a mean score of 2.41. This was the lowest score among all the variables and implies that most clients do not intend to leave their banks anytime soon. One of the questions asked in this variable underscores this point "what do you think are the chances of you ending your relationship with your current Internet banking service in the next 3 years?" the mean response to this was 2.69 which is very low. However with a standard deviation (S.D.) of 1.6, which incidentally is the highest for any variable, there was quite some variability in the answering pattern among the respondents. In general this shows that clients are not likely to move from one bank to another in the short term. We need to bear in mind that a lot of clients already hold accounts in more than one bank.

**Table 12: Propensity to leave**

| | M | S.D. | Gender | | t | d.f. | Age group | | | f |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | Males | Females | | | 15-24 | 25-34 | 35-44 | |
| **Acquiescence** | 4.60 | .91 | 4.60 | 4.85 | ns | 30 | 4.88 | 4.73 | 4.33 | ns |
| Questions; | | | | | | | | | | |
| 1. Acceptance of future bank policies. | 4.01 | 1.23 | 3.96 | 4.10 | ns | 30 | 4.45 | 3.90 | 3.63 | ns |
| 2. Acceptance of redesigns to my account portal. | 5.39 | 1.21 | 5.24 | 5.61 | ns | 30 | 5.13 | 5.56 | 5.03 | ns |

ns = Not significant
* = p<.05
** = p<.01

Again we did not find any significant differences between the different genders and age groupings.

### 4.3.10. Cooperation

Cooperation (COOP) is one of the variables in the Commitment-Trust model and is a key variable in any relationship context. Therefore we have included it as one of our predictors of acceptance. It measured the level to which "parties work together to achieve mutual goals" (Anderson and Narus, 1990). It had a mean score of 4.45. It shows that in general most clients were ready to cooperate with their banks. Banks however need to do much more about providing information that will enable clients improve their use of their accounts. The mean score of 4.03 in the second dimension measuring this construct is just average which is low considering the importance of the dimension.

**Table 13: Cooperation**

| | M | S.D. | Gender | | t | d.f. | Age group | | | f |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | Males | Females | | | 15-24 | 25-34 | 35-44 | |
| **Cooperation** | 4.46 | 1.15 | 4.50 | 4.44 | ns | 30 | 4.61 | 4.31 | 4.42 | ns |
| Questions; | | | | | | | | | | |
| 1. Willingness to provide interactive information. | 4.93 | 1.32 | 4.88 | 5 | ns | 30 | 4.95 | 4.76 | 4.81 | ns |
| 2. I receive information which enables me to improve my use of my account. | 4.03 | 1.47 | 4.12 | 3.87 | ns | 30 | 4.27 | 3.86 | 4.03 | ns |

ns = Not significant
* = p<.05
** = p<.01

We did not find any significant differences between the different genders and age groupings.

### 4.3.11. Functional conflict

Functional conflict (FC) was also derived from the Commitment-Trust theory; it measures the predisposition of the clients to resolve conflicts amicably. It had a mean of 4.61, which is relatively high. This shows that the clients have a positive attitude towards conflict resolution with the bank.

**Table 14: Functional conflict**

| | M | S.D. | Gender | | t | d.f. | Age | | | f |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | Males | Females | | | 15-24 | 25-34 | 35-44 | |
| **Functional conflict** | 4.61 | .94 | 4.75 | 4.45 | | | 4.84 | 4.45 | 4.40 | ns |
| Questions; | | | | | | | | | | |
| 1. Having a difference of opinion with my banker is "just a part of doing business". | 4.50 | 1.20 | 4.65 | 4.26 | ns | 30 | 4.59 | 4.40 | 4.22 | ns |
| 2. Outcomes of conflicts will benefit the bank and I mutually. | 4.41 | 1.30 | 4.59 | 4.13 | ns | 30 | 4.59 | 4.20 | 4.33 | ns |
| 3. Conflicts will be resolved in a satisfactory way. | 5 | 1.23 | 5 | 5 | ns | 30 | 5.36 | 4.76 | 4.66 | ns |

ns = Not significant

* = p<.05
** = p<.01

We did not find any significant differences between the different genders and age groupings.

### 4.3.12. Uncertainty

Uncertainty (UNC) measures the degree to which the client has enough information to confidently make decisions with predictable outcomes. It is one of the constructs incorporated in the Commitment-Trust Theory. It had a mean of 3.5. This is a relatively low score and it shows that uncertainty was low. Therefore clients on average were confident about making decisions based on the information they received. This implies that the banks were giving reliable and sufficient information.

**Table 15: Uncertainty**

| | **M** | **S.D.** | **Gender** | | **t** | **d.f.** | | | | **f** |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | **Males** | **Females** | | | **15-24** | **25-34** | **35-44** | |
| **Uncertainty** | 3.56 | .82 | 3.41 | 3.74 | ns | 30 | 3.50 | 3.61 | 3.55 | ns |
| Questions; | | | | | | | | | | |
| 1. I do not receive sufficient information to make future decisions. | 4.04 | 1.88 | 3.81 | 4.28 | ns | 30 | 3.8 | 4.1 | 3.8 | ns |
| 2. I am not confident in my ability to make future decisions. | 3.17 | 1.54 | 3.09 | 3.25 | ns | 30 | 3.3 | 3.2 | 4.81 | 19.2** |

ns = Not significant
* = p<.05
** = p<.01

We did not find any significant difference between the different genders, but found substantial differences between the 15-24, 25-34 groups and the 35-44 groups. This is a result of a number of reasons however we believe exposure and usage patterns between the groups in terms of computer and Internet usage plays a substantial part in this. Being confident about making future decisions on using the personalized account portal is substantially influenced by the level of understanding and familiarity with the technology. On average individuals in the 15-34 are more conversant and comfortable with new technology than those in the older categories.

### 4.3.13. Attitude

Attitude (ATT) as a variable was derived from the Theory of Planned behaviour (TPB). It is modelled in the theory as a predictor of Intention to use (INTU), which we have also adopted as a measure of acceptance (ACC). The mean score for this variable is 4.8 which is quite high, meaning that clients have a positive attitude towards personalization in online banking.

**Table 16: Attitude**

| | **M** | **S.D.** | **Gender** | | **t** | **d.f.** | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | **Males** | **Females** | | | **15-24** | **25-34** | **35-44** | **f** |
| **Attitude** | 4.8 | 1.01 | 4.66 | 4.87 | ns | 30 | 4.88 | 4.68 | 4.87 | ns |
| Questions; | | | | | | | | | | |
| 1. Personalization of my account is a good idea | 4.91 | 1.35 | 4.87 | 4.96 | ns | 30 | 5.04 | 4.93 | 4.96 | ns |
| 2. Personalization of my account will make it easier to use. | 4.61 | 1.60 | 4.50 | 4.71 | ns | 30 | 4.72 | 4.43 | 4.64 | ns |

ns = Not significant
* = p<.05
** = p<.01

We did not find any significant difference between the different genders and age groupings. However the results show that the females in the gender category and 15-24 in the age category had a slightly more positive attitude towards personalization in online banking.

### 4.3.14. Subjective norm

Subjective norm (SN) as a variable was derived from the Theory of Planned behaviour (TPB) and is a predictor of Intention to use (INTU). It measured the normative influence or the influence of significant others on the client's decisions in relation to personalization of their online banking portal had a mean score of 4.23. The score for this variable is slightly above average see table below.

**Table 17: Subjective norm**

| | M | SD | Gender | | t | d.f. | Age group | | | f |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | Males | Females | | | 15-24 | 25-34 | 35-44 | |
| **Subjective norm** | 4.23 | .90 | 4.34 | 4.13 | ns | 30 | 4.27 | 4.10 | 4.25 | ns |
| Questions; | | | | | | | | | | |
| 1. People who are important to me think personalization of my account is a good idea | 4.33 | .99 | 4.41 | 4.19 | ns | 30 | 4.36 | 4.10 | 4.33 | ns |
| 2. People important to me would agree personalization makes my account easier to use | 4.20 | .97 | 4.29 | 4.06 | ns | 30 | 4.18 | 4.10 | 4.18 | ns |

ns = Not significant
* = p<.05
** = p<.01

We did not find any significant differences between the gender and age groupings. We find it interesting that an above average mean score was recorded for this variable, given that Internet banking is a private issue and this country being very high on the individualism (Hofstede, 1980).

### 4.3.15. Control (data)

Control (data) (CTRD) is one of the new variables we introduced into the Commitment-Trust model. It has been found to influence acceptance in the online environment, and we have consequently included it as a variable. It measured the perceived ability to control. It had a mean score of 4.5. Also the standard deviation of .77 (the lowest of all variables) means most of the clients were clustered around this score. We can infer from this that the clients perceived themselves as having substantial control over their data. This is good news for the banks as it implies their clients feel somewhat empowered with regards to what is done with their data. This will go a long way to alleviate privacy concerns, as control over data is actually the central issue in privacy.

**Table 18: Control (data)**

| | M | S.D. | Gender | | t | d.f | Age group | | | f |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | Males | Females | | | 15-24 | 25-34 | 35-44 | |
| **Control (data)** | 4.51 | .77 | 4.64 | 4.43 | ns | 30 | 4.47 | 4.44 | 4.59 | ns |
| Questions; | | | | | | | | | | |
| 1. Importance of knowing how personal data is used. | 5.35 | 1.41 | 5.22 | 5.55 | ns | 30 | 5.22 | 5.30 | 5.48 | ns |
| 2. Hesitance of giving data if there is no personal control. | 5.34 | 1.32 | 5.51 | 5.06 | ns | 30 | 4.95 | 5.16 | 5.81 | ns |
| 3. Importance of having control over changes of account pages. | 5.25 | 1.10 | 5.27 | 5.23 | ns | 30 | 5.09 | 5.10 | 5.29 | ns |
| 4. Have checked within the year on how personal data is used. | 2.21 | 1.52 | 2.49 | 1.77 | -2.15* | 30 | 2.63 | 2.20 | 1.77 | ns |

ns = Not significant
* = p<.05
** = p<.01

We did find significant differences between the genders on one of the measurements of Control (data) (see question 4 in the table above). The results show that while both groups acknowledge the importance of knowing how their data is being used and controlling it, the male had a higher rate at putting this into action. In other words although the scores in general were low males were more inclined to check whether their banks were complying with the terms of their contract agreement. The implication of this is that as long as there is a perception of compliance people are not really interested in ensuring that the other party (the bank) is in compliance. We found no significant difference between the age groups. The mean score for question four was 2.21 with was much lower than any of the other score on the items measuring Control (data). It shows that while people like to be in control of their data, they actually do very little to ensure the bank is in compliance with this.

### 4.3.16. Control (self-efficacy)

Control (self-efficacy) (CTR_SE) was also derived from the Theory of Planned behaviour (TPB). It is theorized as being a predictor of Intention to use (INTU) which we have subsumed under acceptance. It had a mean score of 4.3. This

variable measured the extent to which the client was proficient in the operation of the online banking portal. An average score of 4.3 implies that the banks still have a lot to do; it means most clients perceive themselves as being of average competence in handling what is offered on the site.

**Table 19: Control (self-efficacy)**

| | M | S.D. | Gender | | t | d.f. | Age group | | | f |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | Males | Females | | | 15-24 | 25-34 | 35-44 | |
| **Control (self-efficacy)** | 4.36 | 1.02 | 4.54 | 4.27 | ns | 30 | 4.18 | 4.32 | 4.72 | |
| Questions; | | | | | | | | | | |
| 1. Capable of effectively using my account. | 5.35 | 1.08 | 5.33 | 5.39 | ns | 30 | 5.18 | 5.20 | 5.44 | ns |
| 2. Have good understanding of how to use features and facilities within my account. | 4.50 | 1.40 | 4.69 | 4.19 | ns | 30 | 4.31 | 4.50 | 4.85 | ns |
| 3. I use most of the available services in my account. | 3.48 | 1.40 | 3.61 | 3.26 | ns | 30 | 3.04 | 3.26 | 3.88 | ns |

ns = Not significant
* = p<.05
** = p<.01

We did not find any significant difference between the gender and age groups.

### 4.3.17. Acceptance

Acceptance (ACC) which measured the degree to which the clients were willing to accept personalization of their accounts had a mean score of 3.55. This was a low score and implies that a lot more needs to be done to change the views of the clients to a more acceptable level. Acceptance was based on the client's level of acceptance of specific personalized items on their bank account portal. The six questions below highlight the specific personalized items that defined Acceptance.

**Table 20: Acceptance**

| | M | S.D. | Gender | | t | d.f. | Age group | | | f |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | **Males** | **Females** | | | **15-24** | **25-34** | **35-44** | |
| **Acceptance** | 3.55 | 1.19 | 3.76 | 3.35 | ns | 30 | 3.74 | 3.56 | 3.66 | ns |
| Questions; | | | | | | | | | | |
| 1. Would like settings modified to my taste. | 3.81 | 1.70 | 3.94 | 3.61 | ns | 30 | 3.45 | 4.20 | 3.81 | ns |
| 2. Would like frequently used features set on higher priority. | 4.95 | 1.32 | 4.86 | 5.10 | ns | 30 | 4.81 | 5.20 | 4.88 | ns |
| 3. Would like to be able to adapt settings. | 3.84 | 1.68 | 4.06 | 3.48 | ns | 30 | 3.81 | 3.96 | 3.55 | ns |
| 4. Would like personal financial advice, based on my financial profile | 3.95 | 1.76 | 4.12 | 3.68 | ns | 30 | 4.36 | 4.13 | 3.25 | ns |
| 5. Would like personal adverts/special offers based on my purchasing behaviour | 2.45 | 1.70 | 2.73 | 2 | ns | 30 | 2.86 | 2.33 | 2.22 | ns |
| 6. Would like a more personalized account | 4.15 | 1.55 | 4.33 | 3.87 | ns | 30 | 4 | 4.76 | 3.40 | 5.85** |
| 7. Plan to fully utilize account features | 3.64 | 1.52 | 3.84 | 3.32 | ns | 30 | 3.72 | 3.40 | 4.07 | ns |

ns = Not significant
* = p<.05
** = p<.01

We did not find any significant difference between the genders, however we found a significant difference between age groupings on one of the measurements of this dimension, namely the question; 'would you like a more personalized account'. There was a substantial difference between the age groups 24-34 and 35-44. Those on the former group were more adverse to more personalization of their accounts. There are various probable causes for this, but one strong possibility is that this particular group may be less proficient with the computerized environment and would therefore be more adverse to changes. The responses to questions two and five clearly show an interesting aspect of the client's behaviour. The score of 4.95 in question two shows that clients appreciate it when the banks actively support them by facilitating the use of the site along line they have already chosen. Highlighting and giving quicker access to frequently used items.

Responses to question five show that clients have a strong dislike for banner adverts. There seems to be an underlying principle here that in general clients do not like unsolicited interference in their use of their accounts unless they have initiated it.

In the above section we looked at the differences between the means of the different variables and the questions measuring them. The only significant difference among the genders was found in the variable Shared values (SV) ($t= 2.79$, $p<.01$). The difference could be traced to how the female and male clients view their relationship with the bank, the male felt more like partners with the bank then the females. This has various implications with regards to how banks should approach and relate to the different genders, they need to work on changing the perception the female clients have about their relationship with them. We also found differences between the age groups on the level of Uncertainty (UNC) and Acceptance (ACC).

In the previous section we looked generally at the variables as separate entities however in the next section we broaden our approach by looking only at the variables and not the underlying questions. At the same time we narrow our focus by examining only their relationship with Acceptance.

## 4.4. Relationships with Acceptance

In this section we want to look briefly at the relationship between the variables and Acceptance (ACC) to see if any differences show up within the different groups. In total, there were six variables that had significant correlations with Acceptance (see the correlation matrix in appendix 2). These were, Control (data) ($r= .445$, $p<.01$), Relationship termination cost (RTC) ($r= .282$, $p<.01$), Shared values (SV) ($r= .273$, $p<.05$), Attitude (ATT) ($r= .278$, $p<.01$), Control (self-efficacy) ($r= .267$, $p<.05$) and Subjective norm (SN) ($r= .259$, $p<.05$). When we look at the correlation values at the gender and age group categories we see certain interesting differences which will enable us appreciate better where the weighting is coming from when we do general multiple regressions in the section on modelling (PART B).

The male and female respondents showed clear differences in their correlation values. In the female group only Functional conflict (FC) ($r= .376$, $p<.05$) correlated significantly with Acceptance (ACC). With the male group however five variables correlated with Acceptance (ACC); Shared values (SV) ($r= .330$, $p<.05$), Relationship termination cost (RTC) ($r= .431$, $p<.01$), Control (data) ($r=$

.573, p<.01), Attitude (ATT) (r= .298, p<.05) and Subjective norm (SN) (r= .301, p<.05).
This output shows that males had a much higher number of variables which were related with Acceptance than females. They were all positive relationship

The age groups also showed distinctly different patterns. In the 15-24 age group Control (data) CTRD (r= .471, p<.05) and Control (self-efficacy) CTR_SE (r= .519, p<.05) correlated significantly with Acceptance. In the 25-34 group Control (data) CTRD (r= .751, p<.01), Acquiescence (ACQ) (r= -.404, p<.05), Cooperation (COOP) (r= .399, p<.05) and Subjective norm (SN) (r= .389, p<.05) correlated significantly with Acceptance (ACC). In the 35-44 age group Shared value (SV) (r= .391, p<.05), Relation termination cost (RTC) (r= .544, p<.01), Cooperation (COOP) (r=411, p<.05), Attitude (ATT) (r= .448, p<.05) and Subjective norm (SN) (r= .381, p<.05) were significant. As we will see from the next section all the significant predictors of Acceptance are among those factors with which it had the highest correlations. From the group results it shows that there are clear differences among the groups as to how the variables are related to Acceptance.

In this section we have looked only at linear relationships. Linear relationships only show which variables are related and the direction of the relationship. However for us to understand which independent variables determine a particular dependent variable we need look for relationships based on causality. Causality is essential to differentiating which variables are related by chance and those that are predictive. In the next section we use multiple regressions to enable us highlight causal relationships among the variables under study.

## Part B: Modelling results

This section looks into the output of the different models used as tools to answer the research questions. We show the results of our hypothesis and see whether the outcomes are the same as what we expected. Firstly we look at the Commitment-Trust theory with its modifications, secondly we look at the Theory of Planned behaviour and its outcomes, thirdly we look at how well they adapted to the context in which we used them. Lastly we do a comparative analysis of the results from Morgan and Hunt (1994) and our observed results.

## 4.5. Model 1: Modified Commitment-Trust theory model

In this section we use a modified version of Morgan and Hunt (1994) Commitment-Trust theory model. We add four new variables; Control (data), Control (self-efficacy), Subjective norm (SN) and Acceptance (ACC) to the original model and check for all direct and indirect determinant pathways. Our focus is to look for significant (at $p<.05$) predictors of Acceptance (ACC). We then go a step further to look for predictors of those variables that were significant predictors of Acceptance. The output of the multiple regressions is shown in appendix 3, with the full details of the variables that were significant in predicting Acceptance (ACC). The first diagram below shows the original hypothesised pathways, while the second diagram shows the actual significant pathways highlighted in red. Out of the ten hypothesised pathways only five were significant.

**Figure 5: Hypothesised significant pathways to Acceptance**

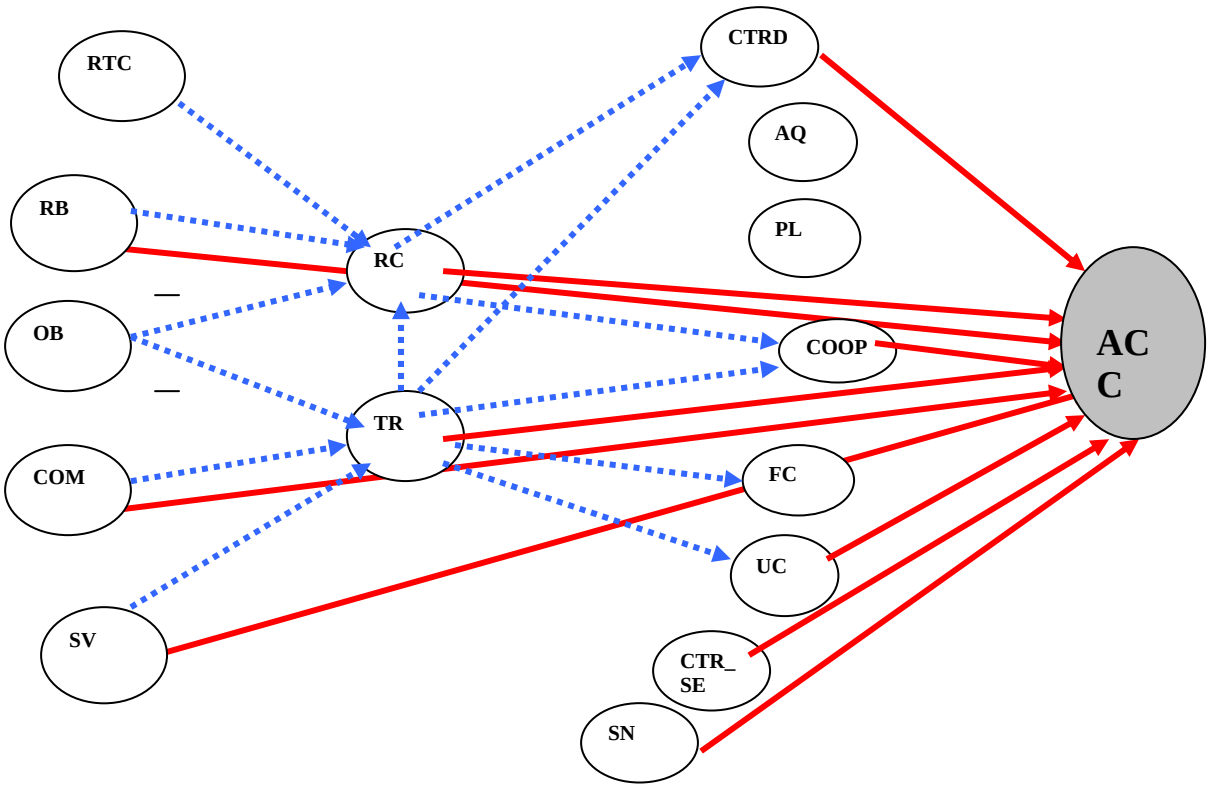
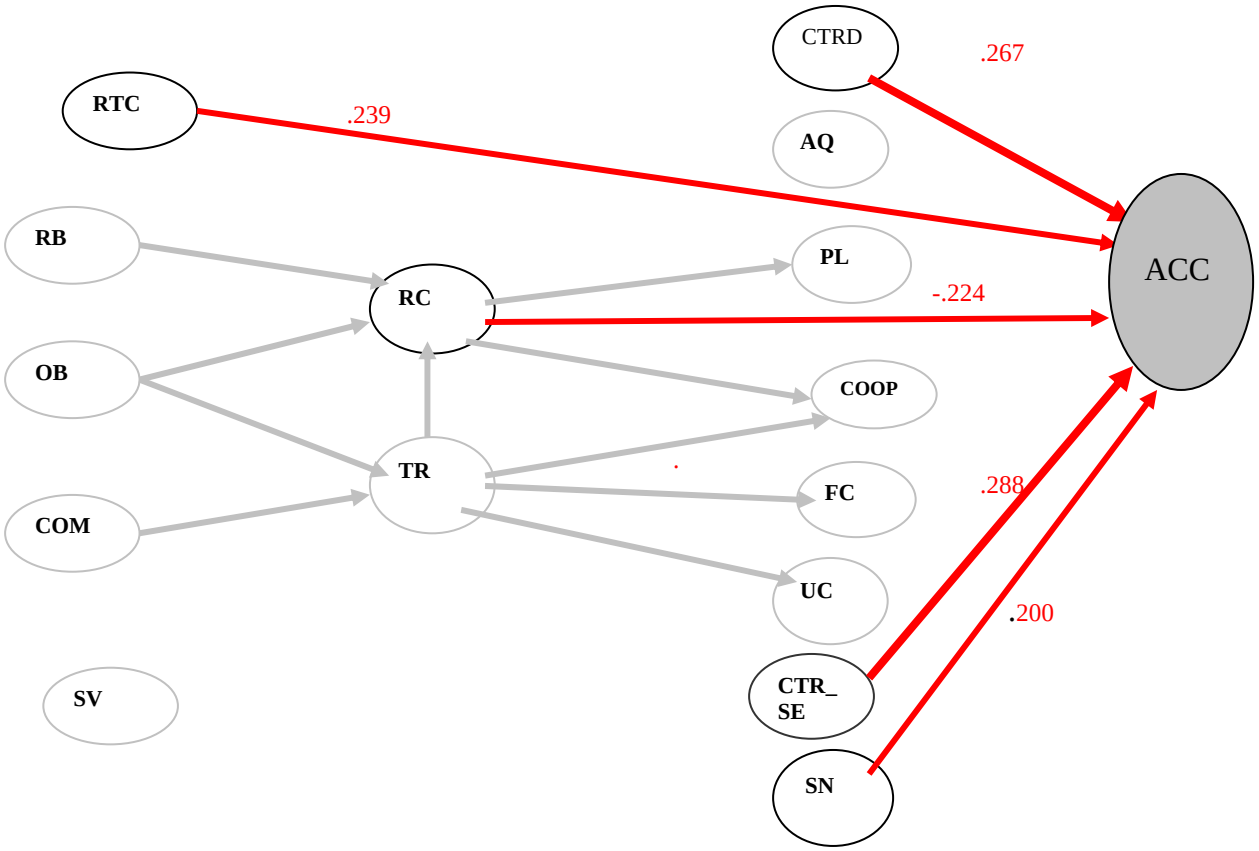


**Figure 6: Observed significant pathways to Acceptance**




(p<.05)

### 4.5.1. Determinants of Acceptance (ACC)

Using regression analysis we found five main predictors of Acceptance (ACC); they were, Control (self-efficacy) (b=.288, p<.01), Control (data) (b=.267, p<.01), Relationship termination cost (b=.239, <.01)), Relationship commitment (b=-.224), and Subjective norm (b=.200). All five variables together accounted for over 30% ($r^2_{adj}$= .315) of the variance in Acceptance (ACC). We can therefore say that in our model, Control (self-efficacy), Control (data), Relationship termination cost, Relationship commitment and Subjective norm together determine about one third of any change in the value of Acceptance. Control (self-efficacy) (CTR_SE) had the highest predictive value (t=2.97), followed by CTRD (t= 2.70) then RTC (t= 2.52), and then RC (t= -2.30) and lastly SN (t= 2.15). See appendix 3 for details.

The beta figures show what each variable contributed to the model. Interestingly all variables except for Relationship commitment (RC) had a positive relationship with Acceptance (ACC). Various reasons can be adduced for this; we will go into more details about this in the discussion section. From the above figures we can say that about 30% of the reason why people accept personalization of their online banking portal can be accounted for by, the amount of control they have over their data, their level of proficiency in using the site, the level of difficulty involved in closing their accounts, the level of commitment they have towards the provider and the influence significant others have over them.

### 4.5.2. Determinants of Control (self-efficacy) (CTR_SE)

The main predictors of Control (self-efficacy) (CTR_SE) were Trust (TR) (b= .351, p<.01), Relationship benefits (RB) (b= .331, p<.01), Control (data) (CTRD) (b= .223, p<.01) and Functional conflict (FC) (b= -.243, p<.05), see appendix 5. The variables highlighted above account for 30% ($r^2_{adj}$= .307) of the observed variance. Trust (TR) (t= 2.993) was the strongest predictor followed by Relationship benefit (RB) (t= 2.860), and then Functional conflict (FC) (t= -2.362) and lastly Control (data) (CTRD) (t= 2.437). We can therefore say that the degree to which clients trust their banks, the benefits derivable from their relationship, the perceived level of control they have over their data and their perception of how conflicts will be resolved will have a 30% determinant factor on the level of control (self-efficacy) the clients perceived themselves to have.

### 4.5.3. Determinants of Control (data) (CTRD)

The main predictors of Control (data) were Shared values (SV) (b= .487,p<.001), Relationship commitment (RC) (b= -.262, p<.01), and Control (self-efficacy) (CTR_SE) (b= .243, p<.01). Although Communication (COM) was included in the original model it was discarded because it was not significant at p<0.05, see appendix 4 for details. These variables highlighted above account for 27% ($r^2_{adj}$= .27) of the variance observed in Control (data). Shared values (SV) was the strongest predictor (t= 4.724), followed by Relationship commitment (RC) (t= -2.582)), and lastly Control (self-efficacy) (CTR_SE) (t= 2.512. What this implies is that the level to which clients identify with the values of their banks, their degree of proficiency with the banking portal and the level of the commitment to the bank will determine about 27% of the level of their perceived control over their data.

### 4.5.4. Determinants of Relationship termination cost (RTC)

There were no significant determinants of Relationship termination cost (RTC).

### 4.5.5. Determinants of Relationship commitment (RC)

We found three main predictors of Relationship commitment (RC). They were, Relationship benefit (RB) (b=.316, p<.01), Shared values (SV) (b= -.244, p<.05) and Opportunistic behaviour (OB) (b= -.375, p<.01). Although Relationship termination cost (RTC) was included in the original model we discarded it because it was not significant at p<0.05 see appendix 6. These highlighted variables account for 28% ($r^2_{adj}$= .284) of the variance observed in the model. The strongest predictor was Opportunistic behaviour (t= -2.844), followed by Relationship benefit (t=2.498), and lastly Shared values (t= -2.142). We can therefore say that 28% of the value of Relationship commitment is determined by the client's perception of whether the bank was taking undue advantage of them, the degree to which they identified with the policies and practices of the bank and the perceived benefits derivable from the relationship.

### 4.5.6. Determinants of Subjective norm (SN)

We found three main predictors of Subjective norm (SN). They were Attitude (ATT) (b= .421, p<.001), Uncertainty (UNC), (b= -.242, p<.01), and Control (self-efficacy) (CTR_SE) (b= -.213, p<.05). Propensity to leave was included in the

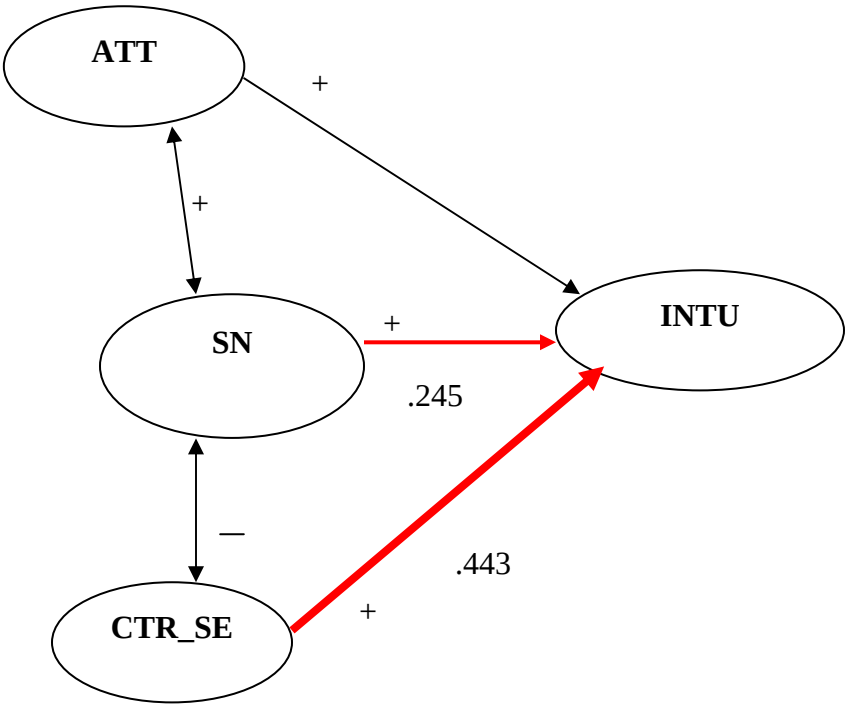
original model, however we have excluded it because it was not significant at $p<.05$. These variables accounted for about 27% ($r^2_{adj}= .27$) of the variance observed in the model. The strength of the predictors was in the following order; Attitude ($t= 4.380$, $p<.001$), Uncertainty ($t= -2.442$, $p<.01$) and Control (self-efficacy) ($t= -2.180$, $p<.05$). We can conclude from this that 27% of the value of Subjective norm is determined by their clients attitude towards the bank, the level of uncertainty involved in the relationship and the perceived capability of the client in operating their accounts.

In this section we have used the Commitment-Trust theory as a basis to model the predictors of Acceptance (ACC). The model accounted for slightly over 30% of the total predictive value and we were able to identify five predictor variables. In the next section we use another model, the Theory of Planned behaviour, to determine Intention to use (INTU). As we have said earlier (section 4.2) Intention to use is being used here as a component of Acceptance (ACC).

## 4.6. Model 2 (Theory of Planned behaviour)

A simplified model of the Theory of Planned behaviour was also used to analyse the data. Attitude (ATT), Subjective norm (SN) and Control (self-efficacy) (CTR_SE) were regressed against Intention to use (INTU), to assess for determinant relationships. The results for this model show that Control (self-efficacy ($b= .443$, $p<.001$) and SN ($b= .245$, $p>.05$) were the main determinants of INTU. CTR_SE was a stronger predictor ($t=4.596$), than SN ($t=2.545$). The model account for about 22% ($r^2_{adj}= .219$) of the observed variance, see appendix 7. It is interesting that Attitude turned out to be insignificant in predicting Intention to use (INTU). Various reasons can be adduced for this, however the two which we think are most important here are, (1) the clients may not have formed significant attitudes for or against personalization within the account portal to make a difference and (2), their attitudes may reflect their attitudes towards the banks in general which may be neutral, and not towards personalization of the account portal.

**Figure 7: Observed output of Theory of Planned behaviour model**

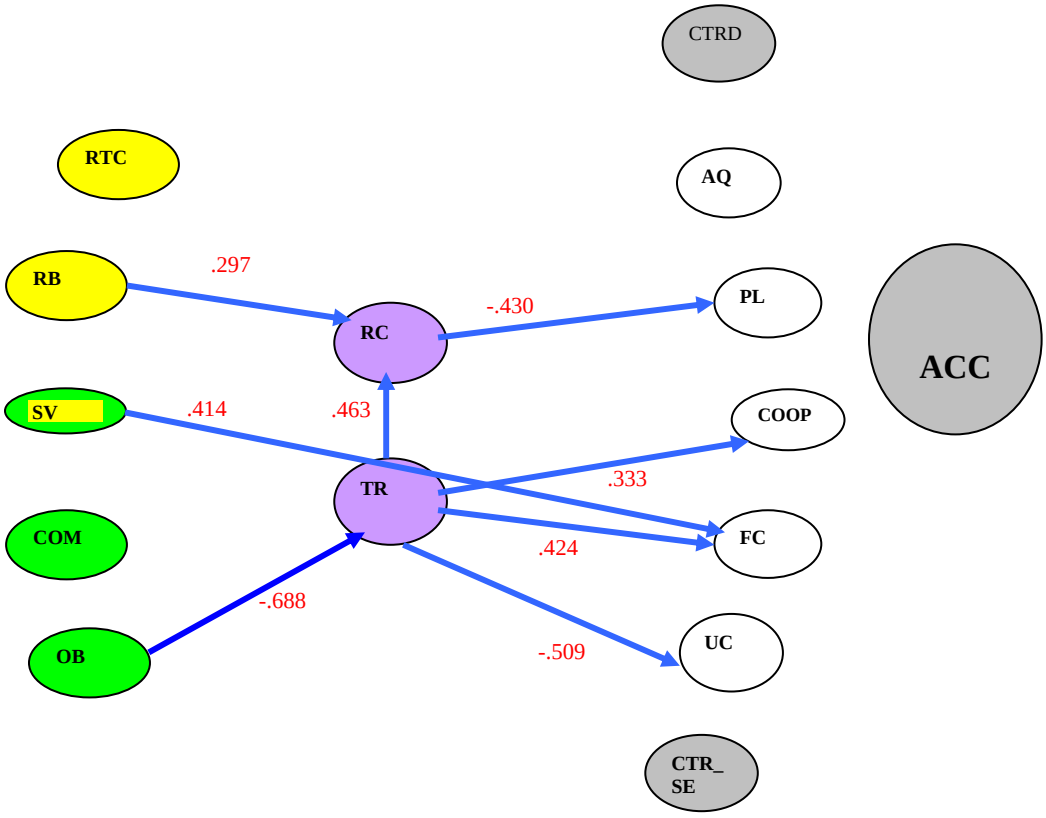



(p<.05)

## 4.7. Comparison with Morgan and Hunt (1994) KMV model

In this section we highlight our observed results and do a comparative analysis with the results of Morgan and Hunt (1994). Their results were obtained in a business to business (B2B) environment as opposed to ours which is from a business to customer (B2C) setting. Their context was also in the traditional direct contact pre-Internet environment unlike ours with is Internet based. It was thus interesting to see the utility of their model within this new environment. We compare the level of congruence between their outputs on both the direct and indirect pathways between the variables. Figure 4 below shows all the relationships between predictor variables and the dependent variables within their various clusters (i.e. Relationship termination cost (RTC), Relationship benefit (RB) and Shared values (SV) in one cluster are regressed against Relationship commitment). The different clusters are highlighted by their colours, Shared values falls into two clusters which is why it contains yellow and green.

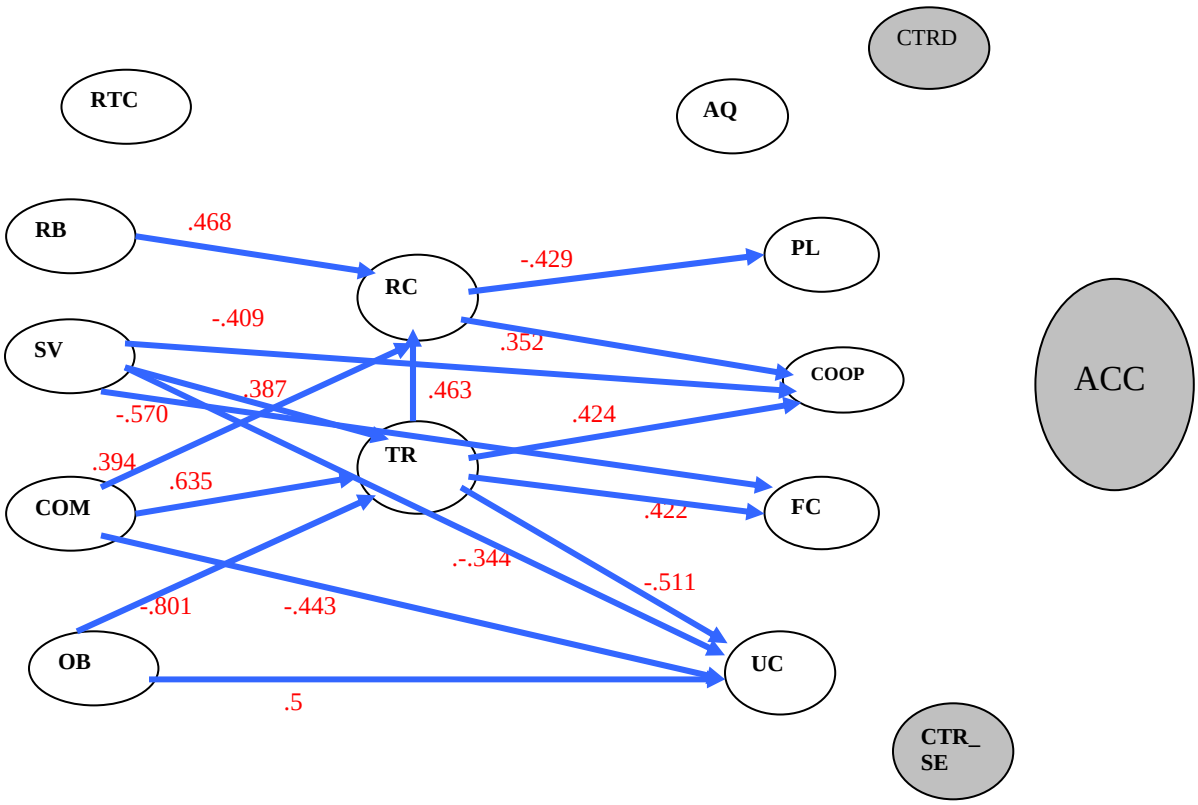
**Figure 8: Relationship between all predictor variables within their clusters and the dependent variable**




(p<.05)

In the above model we have looked at the direct relationships between the variables by regressing them against each other in their clusters. This produced the seven significant relationships shown above. However we recognize that not all relationships are direct, some relationships are mediated by third variables. In order to show mediated effects we need to first look at the relationships between the variables, separately and not in clusters. Figure 5 below shows all direct one to one relationships between the predictor variables and the dependent variables (i.e. Relationship benefit (RB) is regressed alone against Relationship commitment (RC)). This is to highlight relationships which would otherwise be hidden as a result of mediation with other variables.

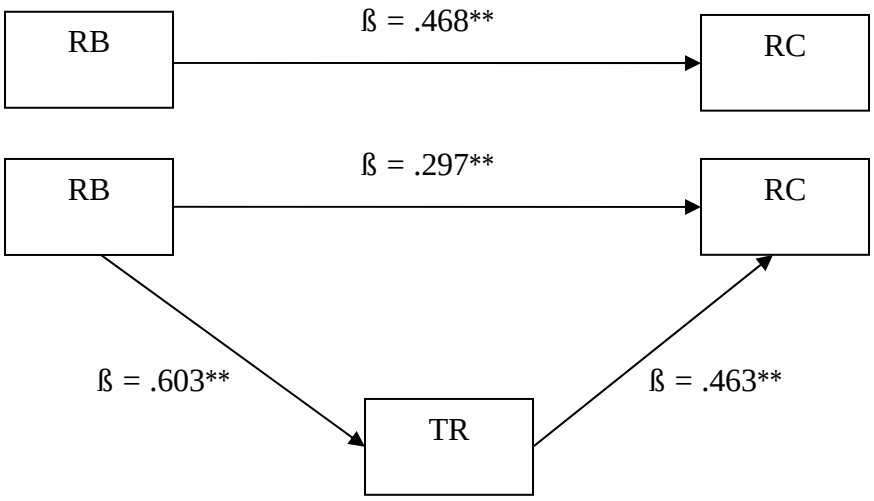
**Figure 9: Relationship between individual predictor variables and dependent variables**




(p<.05)

To see the actual mediation effect we need to look at those variables whose values were significantly increased or became significant when regressed directly as opposed to when they were regressed in their clusters. We use the model popularized by Baron and Kenny (1986, 1176), to assess for indirect (mediation) effects. According to them a variable Z is considered a mediator between an independent variable X and dependent variable Y if, (1) X significantly predicts Y, (2) X significantly predicts Z, and (3) Z significantly predicts Y controlling for X, (Preacher and Hayes, 2004, 717). In the diagram below (fig 10) we highlight this by displaying the relationship between Relationship benefit (RB) and Relationship commitment (RC) mediated by Trust (TR).

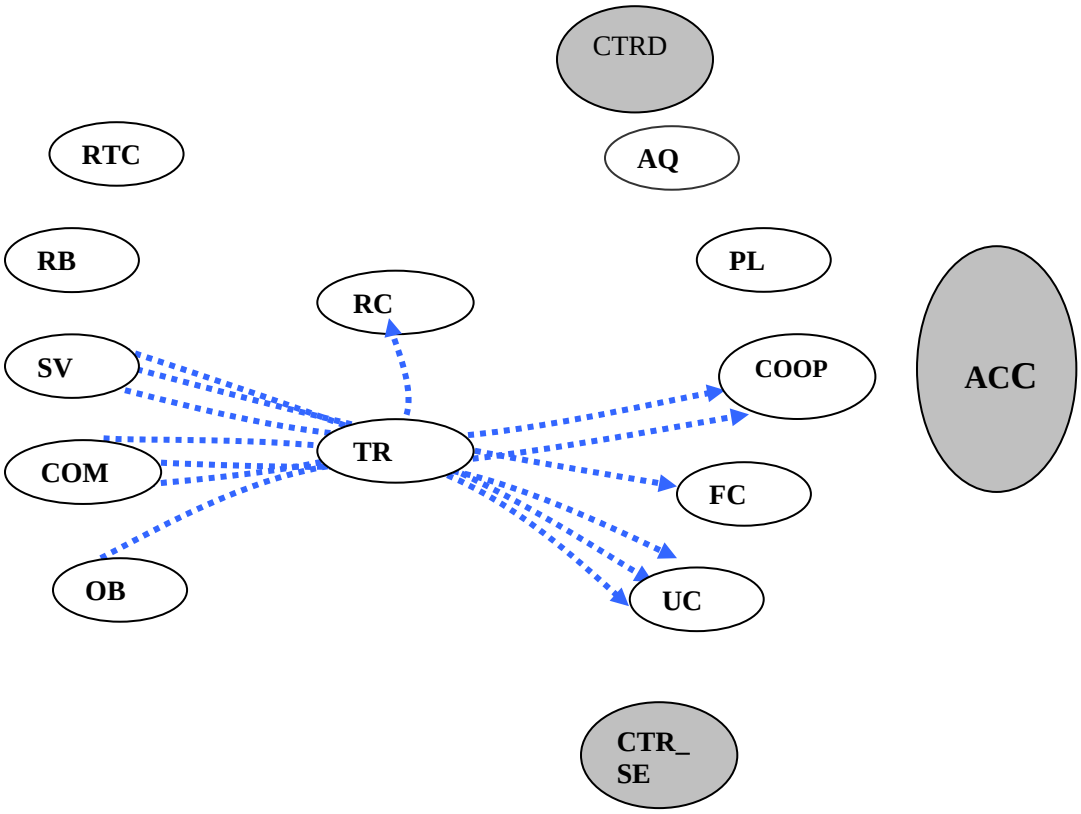
**Figure 10: Trust as a mediator between Relationship benefits and Relationship costs.**




* p<.05
** p<.01

We found seven such indirect relationships (see figure 11 below), however after using the SOBEL test (Sobel, 1982) we discovered that only six were significant. The SOBEL test measures whether a mediator (variable) influences the relationship between an independent variable and a dependent variable. For full detail of all significant mediated relationships and the accompanying details see appendix 9.

**Figure 11: All mediated relationships using The Commitment-Trust theory model**




The results show fifteen significant direct predictive relationships (fig.9, above). However when the variables were regressed in their various clusters this reduced to seven (fig.8). This however is not too far from the twelve significant relationships Morgan and Hunt (1994) discovered. We also found six significant indirect relationships which was a large drop from the 24 highlighted in the Morgan and Hunt (1994) research, see appendix 8 for details. Our results show that trust was an important mediator variable between Communication (COM), Shared values (SV) and to a lesser extent Relationship benefit (RB), Opportunistic behaviour(OB) on one hand and Uncertainty (UNC), Functional conflict (FC), Cooperation (COOP) and Relationship commitment (RC) on the other. Our results did not show any significant mediation through Relationship commitment (RC).

# 5. Discussion and Conclusion

## 5.1. Acceptance

In this study we have approached the issue of acceptance of personalization by looking at the underlying factors influencing the relationship between the bank and their clients. It is important to look at factors influencing the relationships and match them to the personalization items to see whether there is a fit before the relevant technology involved is deployed. It would be very unwise for instance to implement a personalization system that requires large amounts of user data if the users do not want to cede control of the kind of data specifically requested, or when there is a problem of trust. It would also be very unwise to implement expensive personalization systems without finding out whether the users see any perceived benefit in operating a relationship at that level.

These are just a few examples of the scenarios which need to be thoroughly looked into before planning a personalization intervention. This is one of the causes why some personalization efforts have failed or under-performed. The main purpose of this study was to determine the underlying factors influencing the acceptance of personalization in online banking, the degree to which they affect acceptance and to ascertain which factors had an immediate (or direct) effect on it. In the context of this research personalization was restricted to five specific bank defined criteria, namely: adaptation of the settings of the account portal, the order of presentation of the page and items within the pages, dynamic financial advice, personalized adverts (delivered as banner adverts.) and other unspecified personalization of the account portal.

It is obvious from the data that clients would like the page and items within the page order to be structured dynamically according to usage history (mean= 4.95 on a scale of 7). This brings obvious benefits to the users as it would remember their preferences and frequently used items. This would speed up the user's ability to accomplish tasks. This can be contrasted to the reverse situation when it come to adverts (mean = 2.45) and financial advise (mean = 3.95). This shows clearly that clients are much more sensitive when it comes to control of content as opposed to control of the interface. The model by Wu et al (2003) (see figure 1 in chapter 2) is very instructive in this regard. It does not just distinguish functionally what parties are involved in the personalization, but it also provides a frame of reference for determining the sensitivity of the action involved.

Adaptation of the settings was however an exception here. Users were not enthusiastic about the adaptation of the settings irrespective of whether it was user or bank controlled. Various explanations can be given for this; the users may not see it as being relevant but as being very cosmetic. They may have grown familiar with the current system and view any change to it adversely. They however were unequivocal in their aversion to adverts and special offers based on usage history (mean= 2.45). The first and last items stand out very clearly, it shows that user behaviour with regards to online banking is much focused and goal oriented. This finding is in line with that of a previous study by Wolfinbarger and Gilly, (2001) which showed that online consumers tend to be goal-oriented.

The fact that online banking users were goal-oriented in their behaviour stood out clearly in the focus group meeting and the interviews. All of the respondents accessed their accounts to accomplish specific tasks, such as making a payment or checking their balances. They all wanted to complete these predetermined tasks as quickly and effortlessly as possible, and considered the banks attempts to catch their attention through emails, banners etc as distracting.
It is also clear that clients are really not ready to receive banner (and other adverts) in their account portal in the way in which they are currently presented. Banner adverts which are associated with obtrusive e-marketing just seem out of place in the banking portal. Various reasons have been given to explain consumer aversion to banner adverts, but we believe three are very relevant here.

Firstly they have acquired a reputation for not delivering what they promise (Nielsen, 1997, Drèze and Hussherr, 1999). This point was corroborated by one of the clients involved in the interviews. He had this to say about such adverts, “I don’t look at this often...But I never trust it much”. Secondly the consumer is not interested in what is being offered. This fact was expressed by almost all the respondents in the interviews and focus groups. 4 out of 5 members of the focus group thought it was annoying, ‘highly irritating’ and the consensus was that it would need to be very relevant to be useful. Thirdly goal oriented consumers hardly notice such adverts (Pagendarm, Schaumburg, Heike, 2001).

All the respondents involved in the focus groups and the interviews indicated that they were very goal oriented in the use of the internet banking services. A majority of them said they did not even notice them, meaning that they did not even register or acknowledge them. This however may not be as accurate as they are making it out to be, as some of them had at least clicked on them and one respondent in particular had even taken an offer for a free product. The key to

the success or failure of this approach is relevance and timeliness, with these two ingredients present the level of acceptance will increase.

Financial advice received a mean score of 3.95, which was a barely at the mid point of the seven point scale. On face value it seems that this was not a priority for most of the online bank users. However during the interviews when respondents were introduced given more details and prodded on how they would react to this the response was substantially different. While the clients initial response was to be wary of any 'free' financial advice, as they were confronted with the facts and potential benefits the majority gradually bought into idea. Lack of awareness and narrowly defined user goals contributed substantially to the response of the users to this feature.

The dimension which measured the desirability for more personalization received a mean score of 4.15, which means that most respondents desired more personalization. The key factor here is what kind of features will be involved and how will it be implemented.

**Predictors of acceptance**

In the section above we have looked at the various items that define personalization in the context of this research. In the following section we look at the connection between these items and the underlying variables determining them. The Morgan and Hunt (1994) commitment-Trust Theory and the Theory of Planned behaviour model (TPB) used for this analysis showed five significant direct predictors of acceptance of personalization in online banking namely; Control (self-efficacy) (CTR_SE), Control (data) (CTRD), Relationship termination cost (RTC) and Relationship benefits (RC) and Subjective norm (SN).

Control (self-efficacy) (CTR_SE) was the highest predictor of acceptance. This has become an increasingly important factor as a result of the complexity of modern day systems. The results show that the higher the level of CTR_SE the higher the level of acceptance. The mean score for Control (self-efficacy) was 4.3 which is not a high score. Self-efficacy is important because it "regulates the way in which an individual perceives his or her competency." (Irizarry, 2002) "This [Control self-efficacy] perception influences an individual's ability to complete a task and a set, attainable goal" (Pajares and Schunk, 2001). The level of perceived competence of the client will determine how effectively they utilize the services in the online banking portal. Our model highlighted four significant predictors of CTR_SE, namely, Trust, Relationship benefit, Functional conflict, and Control (data).

Control (data) (CTRD) as we hypothesised was a significant predictor variable, it was the second highest predictor of Acceptance. The results show that the higher the perceived control of data the higher the level of Acceptance. People are very concerned about what is done with their data particularly in commercial relationships (Ponemon, 2005, Roy Morgan Research, 2001). This is one of the central issues in privacy (Ackerman, Darrell and Weltzner, 2001), i.e. where does 'ownership of control' reside with the bank or with the client (Byford, 1998). However for banks to be able to personalize proactively they need to have access to sufficient data (Hiltunen et al, 2004, 126) and the authority (or client's permission) to interact based on the data. This usually is not a problem if applied within strictly defined banking operations, for instance warning about a payment, credit limits, or interest rates. However with banks sites gradually turning into financial management portals, with issues of cross-selling and up-selling, the line between what is banking and merchant shop becomes blurred.

These personalization services highlighted in the previous paragraph require the use of demographic and historic data which are sensitive. It is in this key new growth area for banks that data control issues become very important (Hiltunen et al, 2004). The extraction and usage of client data needs to be handled with utmost care, especially in banks, because of the amount of client data they possess and the sensitivity of their services. Since the issue is one of perception and not necessarily a real one, banks if done subtly can use client personal data, for instance sending a very personal, targeted message in a relatively impersonal way. For example if a client buys a flight ticket and the bank wants to propose a travel insurance package to the clients. It would be important to de-emphasise the connection between the purchase (the client's data) and the offer (the usage of the client data). For instance it appears an adverts may be received better on the clients account portal if it says; "we have special travel insurance offers for this season". Rather than "we notice you are travelling and we can offer you a special travel insurance".

It's a bit like the art of applying makeup, its present but in a subtle way. Even thought client data is being used subtly the client should always be informed upfront of this possibility, for instance in the privacy clauses with an opt-out option. From the focus group meeting and in-depth interviews it was clear that individuals were very particular about how 'personally' they were addressed. They felt more comfortable when they thought they were being addressed personally as a group (however the real issue was the anxiety they felt at being singled out and targeted within the context). This dislike or anxiety was more pronounced with age. We are however not clear whether it was strictly due to age or as a result of familiarity with the context (Internet) and system (electronic messaging; text and pictorial), because the younger clients tend to be more accustomed to the electronic environment. The banks need to look for innovative

ways to improve the perception their clients have over their control of data, which in turn will positively influence acceptance.

Relationship termination cost (RTC) was the third most important predictor of acceptance. This was a very interesting result, as it implied that as the cost of closing an account went up the more likely the clients were to accept personalization. This switching cost serves as an incentive to the clients to be positively inclined to personalization of their account portals. Raising the switching cost is one of the fundamental goals of relationship marketing i.e. to 'lock the client' (Beatty, Mayers, Coleman, Reynolds and Lee, 1996, 233, Rowe and Barnes, 1998). There are two sides to this, one positive and the other negative. Organizations (banks in this context) can engage their clients in a learning process such that they are able to anticipate and meet the need of their clients in a proactive way. In doing this, they can deepen the loyalty and relationship between them and the client to a point where the benefits to both parties are so high it would be very counterproductive to terminate the relationship.

Organizations can also act predatorily and make the client dependent on them, such that client have to stay not because they are deriving some extra benefit but because they would incur huge costs to change. Both situations involve Relationship terminations cost (mean= 3.5), which was relatively low. The bank has a lot of room here to develop their relationship with the clients and thus increase termination costs.

Relationship commitment (RC) was the fourth strongest predictor of acceptance. Interestingly it had a negative relationship with acceptance. This was the reverse to what we had hypothesised, so we had to look extra closely to see what was happening. With a mean of 4.97 it had the 3rd highest score of all the variables in the model, meaning that relationship commitment was above average. This on face value was a good sign for the bank. However the results show that those with the highest scores in Relationship commitment had some of the lowest scores in Acceptance and Control (data). The data from the Focus groups and interviews gave some insight into this situation. The clients who were very committed were more likely to use the traditional channels for communication and information. For instance, call the bank rather than use the email option.

They were also more irritated with new additions to the account portal, e.g. banner adverts etc. The conclusion from all this is that those with a high level of RC were very demanding and perceived the situation as if they did not have enough control. They were also more likely to be fixated to the current services and features and would be more resistant to change, especially with regards to the introduction of personalization. They would likely be difficult to please.

Consequently although they scored high on RC they were likely to score low on ACC and CTRD. In personalizing for these users the banks need to be extra sensitive and adopt new features in subtly and incremental measures.

Subjective norm (SN) was the last variable that significantly determined Acceptance. Subjective norm can be characterized as the influence significant others have on an individual. It is interesting that the effect of this variable was significant. The Netherlands is a country with a high individualism index (Hofstede, 1980) and therefore conventional wisdom would say significant others would have none or very little influence over ones decisions. However, Subjective norm as we can see from our results is still very relevant in predicting acceptance even in a highly individualistic society. However this may be as a result of the novelty of the technology and the kind of skills necessary, which has led many users to rely on the judgement of others to enable them make up their minds about acceptance.

These are the significant underlying predictors of Acceptance of personalization in online banking. These factors were derived from the two models used in this study. The predictive values of the models were $r^2_{adj}$=.31 for the Commitment-Theory model and $r^2_{adj}$=.22 for the Theory of Planned behaviour model. This shows that our models account for about 30% of the value of Acceptance. This answers the second problem question; the degree to which the underlying predictive variables affect acceptance. To answer the question what are the immediate causes we need to look at the responses to the dimensions of Acceptance and the recurring responses in the in-depth interviews and focus group meeting.

**Assessing the immediate causes of acceptance of personalization**

When looking at the scores on the dimensions measuring Acceptance and the responses from the interviews and focus group meeting, certain key issues stand out as major immediate / directly influencing factors. The first thing is that online banking users are very goal directed in their use of the system. Therefore features that will facilitate and enhance this process will be quickly accepted and those that do not will be ignored. We will buttress this by three quotes from the interviews and focus group meeting. One of the respondents had this to say about this "*I work in a very structural manner and am precise at doing what I have to d*o", another one said this "*I want to be able to access the site fast and leave it fast as well.*" We can also see from the dimensions measuring Acceptance that highest score was on the question "*Would you like frequently used features set on a higher priority?*" the mean score was 4.95.

A key issue for personalization acceptance in this context is that the banks should have a good understanding of what the clients use the site for and a detailed picture of how they use it. They should then build their personalization efforts to enhance this process. The second important issue which dovetails the first is that clients should be made aware of what is on offer and how it will help them in their use of the site. Another major immediate influencing factor is the relevance of the offer or communication to the client. Clients are trying to accomplish tasks quickly and at the same time they are scanning everything in view for relevance. Any form of communication should be brief and to the point. Like one of the interviewee's said "*if they are smart, any message they send will highlight the relevance in the first few seconds otherwise it is shut out*".

Another direct influence on acceptance of personalization is the targeting of the message. All messages must be very well targeted for two reasons firstly if the organisation has a history of sending irrelevant messages people tend to filter out all the communication. One thing the banks need to avoid is to create a situation where people stop listening. Secondly they need to be sensitive about how they present information so as to diffuse the "big brother is watching you" feeling. Banks have a rich trough of client data but how they use it is very important to the acceptance of personalization. The layout of the account portal, the speed at which pages load and commands are executed all influence the general attitude towards the site and the confidence they have towards it. These things are all factors that also affect immediate acceptance.

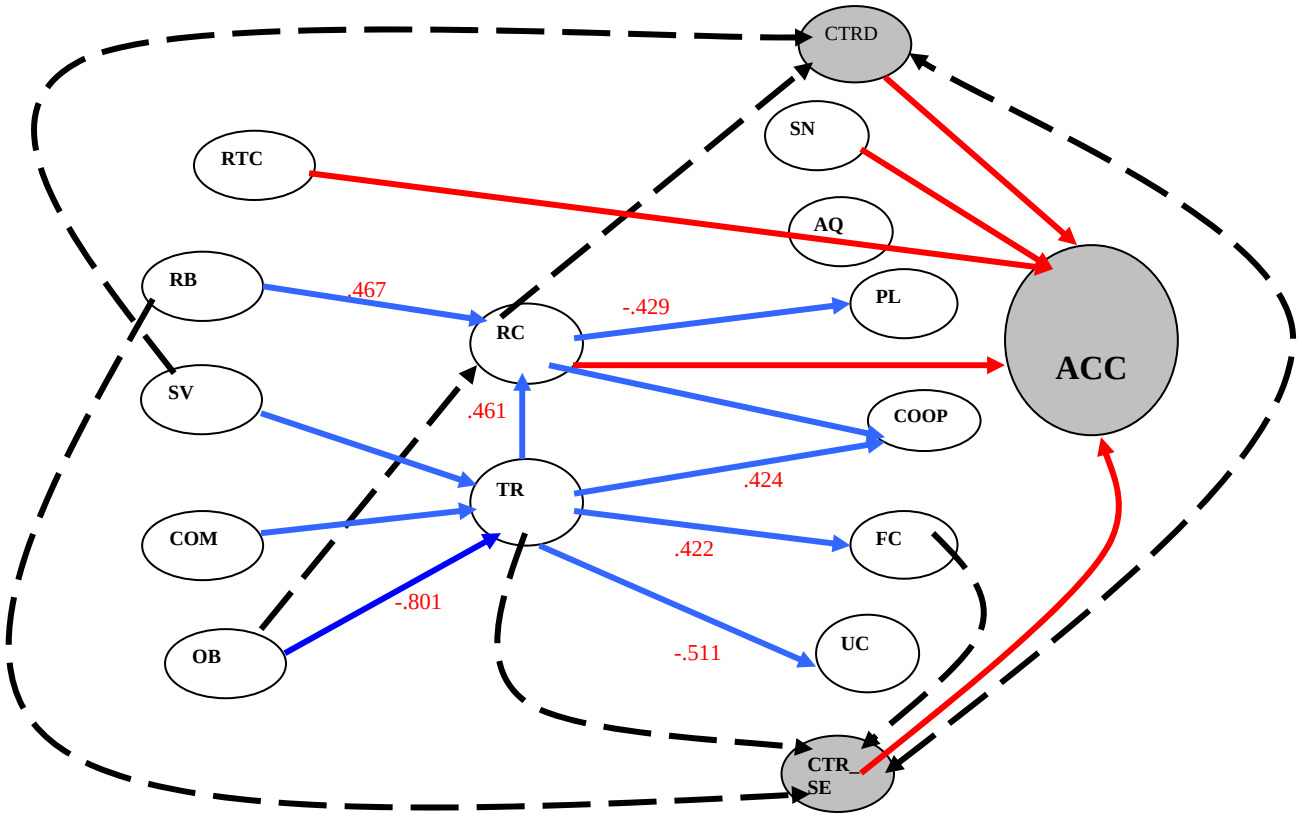
## 5.2. Effectiveness of models

Lastly in this section we want to see how well the models used have fit the purpose for their adoption. The traditional Morgan and Hunt (1994) model as we see from the results requires significant modification before it can be adopted in the context under review, i.e. Internet banking. Traditional business models such as that developed by Morgan and Hunt (1994) were developed for a pre-Internet, pre-electronically mediated era. Issues of data management/control and computer proficiency were not as wide spread and relevant at that time. While the key variables in their model were relevant for general commercial relationships, they are not as effective on their own when transferred into the Internet realm. Here issues of data control, computer proficiency and their antecedents become critical to successful adaptive/adaptable electronic relationships.

The Theory of Planned behaviour was even weaker than that of Morgan and Hunt (1994) in predicting acceptance. Attitude which is one of the key factors in this model was found to be insignificant. Both models were not as strong as expected in their ability to predicting personalization in the current context. We believe the traditional Theory of Planned behaviour in its original form is not a good framework to predict the acceptance of personalization in online banking. The Commitment-Trust theory with modifications is more useful within this context.

In the diagram (figure 7) below we have tried to model the relevant observed pathways based on the introduction of the new and critical variables Control (data) and Control (self-efficacy). From the diagram we can see that a lot of the original pathways which were significant in the Morgan and Hunt (1994) model were not significant. The blue arrows show those relationships that coincided with those of Morgan and Hunt (1994). The red arrows show those variables that predicted Acceptance (ACC). The black dotted arrows showed the new significant pathways relevant for the effective implementation of this model.

**Figure 7: A model of all relevant pathways**



The above model incorporates the relevant elements from both the Commitment-Trust theory (KMV) model and that of the Theory of Planned Behaviour. It shows all the pathways from the previous models that we found significant and quite a number of new pathways as expressed by the red and black dotted lines. The addition of the variables, Control (self-efficacy) (CTR_SE), Control (data) (CTRD) and Subjective norm (SN) play a significant role in this transformation. This new model we believe is more robust and would produce better results than the original two models.

## 5.3. Opportunities for further research

Some of the outcomes of this study highlight a need for further research. Our models, the Commitment-Trust Theory and The Theory of Planned Behaviour explained 30% and 21% of the observed variance in acceptance respectively. It would be worth investigating whether other models would be more effective at predicting acceptance without being overly complicated. We were looking at underlying relationship concepts in connection to specific personalized features. A proper assessment of this would require a very integrated approach with all relationship variables and personalized variables being involved. The Unified Theory of Acceptance and Use of Technology (UTAUT) model may be useful here as it has been shown to out-perform the Theory of Planned Behaviour (TPB) (Venkatesh, Morris, Davis, and Davis, 2003). However how well it integrates relationship concepts is yet to be seen.

Acceptance in this research was the degree to which the respondents were willing to adopt the five personalized features highlighted earlier in the research. However our approach was primarily from a relationship point of view. In other words we looked at the primarily relationship variables and how their various strengths / weaknesses were related to acceptance of these personalized features. We also looked at how these specific personalised features were received, and how they influenced Acceptance all in relation to the characteristics of the individuals. Further research is needed to ascertain in detail how the user interface design integrates with the relationship aspects to influence Acceptance.

The research also produced some unexpected but interesting outcomes. Our results showed that as Relationship commitment increased the level of acceptance of personalization decreased. This was contrary to all our predictions and was quite a surprise. We discovered from the data from the interviews and focus group that clients who were very committed to their banks were more resistant to change. This throws up many interesting questions, was the commitment as a result of a fixation to the current organisation of the services? Was it there because they were identifying with the bank? Was it there because

the bank was providing them an excellent service? More research needs to be done to confirm the underlying cause behind this result. Also because this research was skewed towards individuals in the highly educated segment more research needs to be done to find how those in the less highly educated segment are influenced with regards to acceptance of personalization.

The new model developed as the outcome of this research (figure 7) needs to be rigorously tested. It integrates the features of Commitment-Trust Theory and that of the Theory of Planned Behaviour highlighting all the observed significant pathways. It needs to be tested for its predictive value and its usability across multiple contexts.

## 5.4. Limitations

The significant difference between the distribution of males and females respondents on one hand and highly and less highly educated individuals on the other hand makes it difficult to generalize the outcomes of this research to all the segments of the online population. Since there is an almost even balance between male and female online banking users there is a need for an accurate assessment of the female users and the impact they would have on acceptance of personalization across the population. We have had to restrict our analysis and conclusion to those in the highly educated sector of the population because we did not have enough respondents in the less highly educated category.

This study was cross-sectional in design and therefore has presented a snapshot view of the actual situation. Longitudinal studies may actually produce a much more accurate picture. Morgan and Hunt (1994, 34) have suggested that longitudinal studies provide much stronger inferences when modelling causality.

## 5.5. Conclusion

In this research we investigated the determinants of acceptance of personalization in online banking. We conceptualized personalization as five tailored adaptive/adaptable features proposed by the ABNAMRO bank for adoption on their banking portal as a measure of personalization. These were adaptive login feature, adaptable settings, emails, adaptive banners adverts and adaptive financial advice. Our findings show that in general the clients desire

more personalization. This shows that personalization is a good strategy to adopt in online banking portals. For this to be adopted effectively the banks need to understand the factors influencing their clients relationship with the bank, because this is what determines their perception and react towards the bank.

Banks need to work in particular on the five following areas; the perception the clients have of their ability to use the site effectively, the perception of who is control of their data and how it is used. Also the ease to which the clients can terminate their relationship with the bank, the level of commitment of the clients towards the bank and the influence significant others have on their clients. The banks need to work towards enhancing these factors that influence the client – bank relationship. This research shows that increased focus needs to be directed towards the factors the influence the clients (client variables) rather than just system variables (design, information systems, and human-computer interaction). While the later is very important the former needs to be brought up to the same level of prominence.

One area where the banks need to look at more closely is their segmenting structure; in some areas we found significant differences between perceptions among the gender and different age groups. This shows that when grouping clients their actual (natural) segments may not necessarily follow that of the financial status. Therefore for personalization to be properly implemented the banks need to look very carefully at the client characteristics and then target them accordingly. Going forward success in personalization will be determined by how well the banks can define the client's characteristics and match the personalization efforts to suit this. One central factor banks (and other organisations in personalization) need to appreciate is that clients are at the centre and the market is gradually becoming demand-driven. Therefore more emphasis should be placed on how to develop, cultivate and manage the client's characteristics.

# 6. Recommendations

This research was an exploration into the factor influencing the acceptance of personalization in online banking. Using the Commitment-Trust Theory and The Theory of Planned Behaviour we were able to distil some variables that predict acceptance of personalization within this context. Our model was able to account for about 30% of the variance in acceptance. This confirmed to us that underlying variables substantially influence the relationships customers have with their banks. This shows that personalization of the banking portal is not just about web design, efficiency and integrity of the system, but about understanding what the customer thinks about the bank, what s/he wants from the bank and how s/he perceives the bank is going about achieving this.

Finally we have some recommendations for our host bank the ABNAMRO.
As a basis for any personalization intervention a sample assessment of how their clients score on Control (self-efficacy), Control (data), Relationship termination cost, Relationship commitment and subjective norm should be done. These variables have all been indicated as predicting acceptance and would form a good basis to start new personalization strategies. The following 18 general recommendations if adopted will go along way to address any deficiencies in the clients score in the above five factors and will also enhance the clients experience with the site.

- Clients desire more personalization and new and innovative ways of delivering this should be adopted.

- Any personalization effort should be under-girded by a good idea of what the clients use the site for, and how they actually use it.

- Most of the clients have a desire for items on their account pages to be structured dynamically in reference to their usage history. In other words they want frequently used items placed in more prominent positions than those not frequently used.

- Clients will be encouraged to use new and novel features as well adopt personalized features if the bank could provide a simulated trial platform through which clients can test out features safely without login into their accounts.

- Real-time online help will also be useful (It could be in form of chat).

- Clients using the online banking portal are very goal directed and any personalization feature being implemented should be directed towards facilitating this process.

- Any form of personalized interactive communication should be brief, relevant and to the point, such that it can be taken in at a glance. Clients scan the webpage very fast and take in and block out information very quickly.

- All personalized interaction (information, special offers etc) should be presented in a way that avoids the 'big brother is watching you' perception.

- Clients are unanimous in their aversion towards banner adverts (and other similar approaches). However a key to the success or failure of such approaches is it relevance and the timeliness of its offer. It needs to be very relevant and timely.

- A follow up to the above point is that strenuous efforts need to be made to de-emphasise the connection between the client's data and the offer being made to them until the client is actively engaged in the process.

- In relating to the clients the bank should adopt a stepped approach whereby clients are address gradually with decreasing levels of formality.

- Clients are much more sensitive to the control of the content than the control of the interface. The bank thus has more flexibility with how it personalizes the interface in relation to how it personalizes the content.

- The bank should look for ways to transfer 'ownership' of the personalized interaction / control of the process to the clients. Clients who have taken ownership are much more motivated than those who have not.

- Implementing personalized features, changes and services should be done incrementally with precise and concise information being given to the client. This will minimize the alienation of the most committed clients who are most sensitive to change.

- The banks should make all features, services, changes intuitive and clear. It should also offer help and tutorial services on how to use the site. This is

because the level of perceived competence of the client in operating the site will determine how effectively they utilize the services.

- There are observed differences between how the different genders view their relationship with the bank. For instance the males were more inclined to share common values with the bank than females. This could be interpreted various ways, but the bank needs to work on the perception the females have towards it. We need to be also mindful that it may be a general perception of banking as a whole by females; however this shows there is room for change. This is one very important avenue for competitive advantage

- The bank should strive to deepen its relationship with its clients, in personalized offers through cross / up selling. As it does so it will increase its termination cost and create further barriers for the client to leave.

Lastly the banks should try out sensitive personalization features with the 15-24 age groups they are the least sensitive and the most cooperative. They may not be the most profitable segment but they are the most resilient and if for any reason things go wrong they are the least likely to leave.

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# Appendix

## Appendix 1

### All items and their questions

### Relationship Benefits (RB)

1. My bank provides a wide variety of services
2. My bank site is easy to use
3. My bank is professional in the provision of its services
4. My bank is consistent in the provision of its service
5. My bank identifies and treats me

### Relationship Commitment (RC)

1. I would be willing to put up with some inconveniences to keep my current Internet banking services.
2. I would recommend my Internet banking provider to anyone who is thinking about opening an Internet banking account.
3. I think I will remain a client of my current Internet banking provider for a long time.

### Shared Values (SV)

1. I believe, respect, integrity, teamwork and professionalism are important for the success of the online relationship between my bank and myself.
2. I feel more like a partner of my current Internet bank, than just a client.

### Opportunistic behaviour (OB)

1. My Internet banking provider is always direct and straightforward when dealing with me.
2. In carrying out their duties my Internet banking provider is very supportive and always fulfill their obligations to me.
3. In achieving their goals, my Internet banking provider always fulfills their promises towards their clients.

### Relationship termination cost (RTC)

1. If I were to change my current Internet banking provider, I would have to spend a lot of time learning how to use another online banking service.
2. I fear that if I change from my current Internet banking provider I may not get another provider that is just as good.

## Communication (COM)

1. My bank provides information that fits my particular situation
2. My bank gives relevant information
3. My bank gives timely information
4. My bank guarantees privacy when dealing with my account.
5. My bank provides accurate and reliable information which can be acted on with confidence.

## Control (data) (CTRD)

1. It is important I know what my Internet banking provider is does with my data.
2. I would be hesitant at giving more personal information to my Internet banking provider if I can not control what they do with it.
3. It is important to be able to control the changes my bank makes to my personal account pages as I use my Internet banking services.
4. I have taken steps within the last year to find out how my bank uses my online data

## Trust (TR)

1. My current Internet banking provider is always trustworthy.
2. I have a lot confidence in my Internet banking provider.
3. My Internet banking provider has a high level of integrity.
4. My Internet banking provider can be trusted completely.
5. My Internet banking services provider can be trusted at times
6. My Internet banking services provider is perfectly honest and truthful.

## Acquiescence (ACQ)

1. I will probably accept all future policies which my Internet banking provider establishes for using its services.
2. I will probably accept new styles and redesigns which my Internet banking provider applies to my personal account pages in order to improve their services.

## Propensity to leave (PTL)

1. What do you think are the chances of you ending your relationship with your current Internet banking service in the next 1 year?
2. What do you think are the chances of you ending your relationship with your current Internet banking service in the next 1 year?
3. What do you think are the chances of you ending your relationship with your current Internet banking service in the next 1 year?

## Cooperation (COOP)

1. I am willing to give my Internet banking provider feedback which enables them to improve their personalized services to me.

2. I receive information from my Internet banking provider which enables me to improve my use of their services.

## Functional Conflict (FC)

1. If I were to have a difference of opinion with my Internet banking provider, I would view it as "just a part of doing business."
2. If I were to have a difference of opinion with my Internet banking provider, I expect the outcome to benefit us mutually.
3. If my Internet banking provider and I were to disagree, I expect we could resolve the matter in a satisfactory way.

## Uncertainty (UNC)

1. I do not receive sufficient information to enable me make future decisions about using my personalized Internet banking account?
2. I am not confident in my ability to make future decisions about using my personalized Internet banking account.

## Acceptance (ACC)

1. Would you like to have the layout of your personal Internet account pages adapted to display the colours / fonts you like best?
2. Would you like your personal Internet banking account pages to be adapted so that the features you use most often are put on a higher priority than others when you login?
3. Would you like to be able to change by yourself, the layout and features within your personal Internet banking account pages?
4. Would you like your Internet banking provider to give you personal financial advice based on your current financial profile / transactions?
5. Would you like your personal Internet banking pages to show advertisements and special offers that maybe interesting to you based on your current purchasing behaviour?
6. Would you like more areas of your Internet banking account pages designed more towards your specific needs?

## Attitude (ATT)

1. I feel the personalization of my current Internet banking account is a good idea.
2. I feel that the personalization of my Internet banking account will make it easier for me to use.

## Subjective Norm (SN)

1. Most people who are important to me would think that the personalization of my Internet banking account is a good idea.

2. Most people who are important to me would agree that the personalization of my Internet banking account will make it easier to use.

## Intention to use (INTU)

1. I plan to make full use of the features in my personal Internet banking account pages.

## Control (Self-efficacy) (CTR_SE)

1. I am capable of effectively using my personal Internet banking account.
2. I have a good understanding of how to use the features and facilities available in my personal account pages of my Internet banking service.
3. I use most of the facilities available in my personal Internet banking account pages.

# Appendix 2

Correlation of all variables

## Table 1: Correlation Matrix

| | Mean | SD | RB | RC | SV | OB | RTC | COM | CTRD | TR | ACQ | PTL | COOP | FC | UNC | ATT | SN | CTR_SE | ACC |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| RB | 4.970 | .820 | 1 | | | | | | | | | | | | | | | | |
| RC | 4.977 | .942 | .467 | 1 | | | | | | | | | | | | | | | |
| SV | 4.093 | .989 | .431 | .137 | 1 | | | | | | | | | | | | | | |
| OB | 3.202 | .878 | -.673 | -.482 | -.513 | 1 | | | | | | | | | | | | | |
| RTC | 3.552 | 1.217 | .019 | .138 | .316 | -.118 | 1 | | | | | | | | | | | | |
| COM | 5 | .958 | .765 | .389 | .437 | -.686 | .045 | 1 | | | | | | | | | | | |
| CTRD | 4.515 | .774 | .040 | -.220 | .399 | -.040 | .180 | -.019 | 1 | | | | | | | | | | |
| TR | 5.143 | 1.016 | .603 | .461 | .387 | -.801 | .117 | .635 | .045 | 1 | | | | | | | | | |
| ACQ | 4.605 | .917 | .234 | .187 | .038 | -.185 | .137 | .247 | -.089 | .188 | 1 | | | | | | | | |
| PTL | 2.419 | 1.600 | -.183 | -.429 | .089 | .069 | .024 | -.151 | .227 | -.256 | -.089 | 1 | | | | | | | |
| COOP | 4.465 | 1.155 | .474 | .352 | .409 | -.567 | .183 | .303 | .083 | .424 | .081 | .025 | 1 | | | | | | |
| FC | 4.616 | .949 | .403 | .304 | .567 | -.511 | .130 | .441 | .101 | .422 | .150 | .076 | .481 | 1 | | | | | |
| UNC | 3.564 | .828 | -.430 | -.184 | -.344 | .499 | .026 | -.443 | -.040 | -.511 | -.079 | .096 | -.354 | -.425 | 1 | | | | |
| ATT | 4.802 | 1.015 | .334 | .075 | .379 | -.449 | .232 | .287 | .267 | .383 | .076 | .048 | .348 | .134 | -.229 | 1 | | | |
| SN | 4.238 | .903 | .126 | -.014 | .327 | -.197 | .202 | .171 | .140 | .171 | -.091 | .189 | .219 | .193 | -.260 | .450 | 1 | | |
| CTR_SE | 4.360 | 1.024 | .430 | .209 | -.133 | -.288 | -.051 | .263 | .202 | .426 | .057 | -.109 | .123 | .026 | -.288 | .162 | -.096 | 1 | |
| ACC | 3.553 | 1.1943 | .052 | -.193 | 273 | -.099 | .282 | -.028 | .445 | .151 | .020 | .125 | .117 | .081 | -.188 | .278 | .259 | .267 | 1 |

**Key**

| | |
|---|---|
| | Significant at a p value of 0.01 |
| | Significant at a p value of 0.05 |

# Appendix 3

**Predictors of Acceptance**

**Model summary**

| Model | R | R Square | Adjusted R Square | Std. Error of the Estimate | Change Statistics | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | | | | | R Square Change | F Change | df1 | df2 | Sig. F Change |
| 1 | .596(a) | .356 | .315 | .9881 | .356 | 8.833 | 5 | 80 | .000 |

a. Predictors: (Constant), CTR_SE, CTRD, RTC, RC, SN,
b. Dependent Variable: ACC

**ANOVA**

| Model | | Sum of Squares | df | Mean Square | F | Sig. |
|---|---|---|---|---|---|---|
| 1 | Regression | 43.124 | 5 | 8.625 | 8.833 | .000(a) |
| | Residual | 78.110 | 80 | .976 | | |
| | Total | 121.234 | 85 | | | |

a. Predictors: (Constant), CTR_SE, CTRD, RTC, RC, SN
b. Dependent Variable: ACC

**Coefficients**

| Model | | Unstandardized Coefficients | | Standardized Coefficients | | |
|---|---|---|---|---|---|---|
| | | B | Std. Error | Beta | t | Sig. |
| 1 | (Constant) | -.310 | 1.058 | | -.293 | .770 |
| | RC | -.283 | .123 | -.224 | -2.307 | .024 |
| | RTC | .235 | .093 | .239 | 2.521 | .014 |
| | CTRD | .410 | .152 | .267 | 2.702 | .008 |
| | SN | .264 | .123 | .200 | 2.157 | .034 |
| | CTR_SE | .335 | .113 | .288 | 2.977 | .004 |

a. Dependent Variable: ACC

## Appendix 4

### Predictors of Control (data)

### Model Summary

| Model | R | R Square | Adjusted R Square | Std. Error of the Estimate | Change Statistics | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | | | | | R Square Change | F Change | df1 | df2 | Sig. F Change |
| 1 | .552(a) | .305 | .270 | .6620 | .305 | 8.872 | 4 | 81 | .000 |

a. Predictors: (Constant), SV, CTR_SE, RC, COM
b. Dependent Variable: CTRD

### ANOVA

| Model | | Sum of Squares | df | Mean Square | F | Sig. |
|---|---|---|---|---|---|---|
| 1 | Regression | 15.550 | 4 | 3.888 | 8.872 | .000(a) |
| | Residual | 35.494 | 81 | .438 | | |
| | Total | 51.044 | 85 | | | |

a. Predictors: (Constant), SV, CTR_SE, RC, COM
b. Dependent Variable: CTRD

**Coefficients**

| Model | | Unstandardized Coefficients | | Standardized Coefficients | t | Sig. |
|---|---|---|---|---|---|---|
| | | B | Std. Error | Beta | | |
| 1 | (Constant) | 4.006 | .517 | | 7.743 | .000 |
| | CTR_SE | .184 | .073 | .243 | 2.512 | .014 |
| | COM | -.157 | .091 | -.194 | -1.721 | .089 |
| | RC | -.215 | .083 | -.262 | -2.582 | .012 |
| | SV | .381 | .081 | .487 | 4.724 | .000 |

a. Dependent Variable: CTRD

## Appendix: 5

**Predictors of Control (self-efficacy)**

**Model Summary**

| Model | R | R Square | Adjusted R Square | Std. Error of the Estimate | Change Statistics | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | | | | | R Square Change | F Change | df1 | df2 | Sig. F Change |
| 1 | .590(a) | .348 | .307 | .8524 | .348 | 8.541 | 5 | 80 | .000 |

a. Predictors: (Constant), SN, RB, CTRD, FC, TR
b. Dependent Variable: CTR_SE

**ANOVA**

| Model | | Sum of Squares | df | Mean Square | F | Sig. |
|---|---|---|---|---|---|---|
| 1 | Regression | 31.029 | 5 | 6.206 | 8.541 | .000(a) |
| | Residual | 58.130 | 80 | .727 | | |
| | Total | 89.159 | 85 | | | |

a. Predictors: (Constant), SN, RB, CTRD, FC, TR
b. Dependent Variable: CTR_SE

**Coefficients**

| Model | | Unstandardized Coefficients | | Standardized Coefficients | t | Sig. |
|---|---|---|---|---|---|---|
| | | B | Std. Error | Beta | | |
| 1 | (Constant) | 1.248 | .842 | | 1.482 | .142 |
| | RB | .413 | .144 | .331 | 2.860 | .005 |
| | CTRD | .294 | .121 | .223 | 2.437 | .017 |
| | TR | .353 | .118 | .351 | 2.993 | .004 |
| | FC | -.262 | .111 | -.243 | -2.362 | .021 |
| | SN | -.206 | .106 | -.182 | -1.951 | .055 |

a. Dependent Variable: CTR_SE

## Appendix 6

### Predictors of Relationship commitment

**Model Summary**

| Model | R | R Square | Adjusted R Square | Std. Error of the Estimate | Change Statistics | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | | | | | R Square Change | F Change | df1 | df2 | Sig. F Change |
| 1 | .563(a) | .317 | .284 | .7977 | .317 | 9.415 | 4 | 81 | .000 |

a. Predictors: (Constant), RTC, RB, SV, OB
b. Dependent Variable: RC

**ANOVA**

| Model | | Sum of Squares | df | Mean Square | F | Sig. |
|---|---|---|---|---|---|---|
| 1 | Regression | 23.964 | 4 | 5.991 | 9.415 | .000(a) |
| | Residual | 51.545 | 81 | .636 | | |
| | Total | 75.509 | 85 | | | |

a. Predictors: (Constant), RTC, RB, SV, OB
b. Dependent Variable: RC

**Coefficients**

| Model | | Unstandardized Coefficients | Standardized Coefficients | t | Sig. |
|---|---|---|---|---|---|

| | | B | Std. Error | Beta | | |
|---|---|---|---|---|---|---|
| 1 | (Constant) | 4.960 | 1.176 | | 4.219 | .000 |
| | RB | .363 | .145 | .316 | 2.498 | .015 |
| | SV | -.232 | .108 | -.244 | -2.142 | .035 |
| | OB | -.402 | .141 | -.375 | -2.844 | .006 |
| | RTC | .127 | .076 | .164 | 1.681 | .097 |

a. Dependent Variable: RC

## Appendix 7

### Predictors of Subjective norm

### Model summary

| Model | R | R Square | Adjusted R Square | Std. Error of the Estimate | Change Statistics | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | | | | | R Square Change | F Change | df1 | df2 | Sig. F Change |
| 1 | .552(a) | .304 | .270 | .7718 | .304 | 8.860 | 4 | 81 | .000 |

a. Predictors: (Constant), PTL, ATT, CTR_SE, UNC
b. Dependent Variable: SN

### ANOVA

| Model | | Sum of Squares | df | Mean Square | F | Sig. |
|---|---|---|---|---|---|---|
| 1 | Regression | 21.111 | 4 | 5.278 | 8.860 | .000 |
| | Residual | 48.252 | 81 | .596 | | |
| | Total | 69.363 | 85 | | | |

a. Predictors: (Constant), PTL, ATT, CTR_SE, UNC
b. Dependent Variable: SN

Coefficients

| Model | | Unstandardized Coefficients | | Standardized Coefficients | t | Sig. |
|---|---|---|---|---|---|---|
| | | B | Std. Error | Beta | | |
| 1 | (Constant) | 3.966 | .758 | | 5.231 | .000 |
| | UNC | -.264 | .108 | -.242 | -2.442 | .017 |
| | ATT | .374 | .085 | .421 | 4.380 | .000 |
| | CTR_SE | -.188 | .086 | -.213 | -2.180 | .032 |
| | PTL | .097 | .053 | .171 | 1.824 | .072 |

a. Dependent Variable: SN

## Appendix 8

**Predictors of Intention to use**

**Model Summary**

| Model | R | R Square | Adjusted R Square | Std. Error of the Estimate | Change Statistics | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | | | | | R Square Change | F Change | df1 | df2 | Sig. F Change |
| 1 | .497(a) | .247 | .219 | 1.3379 | .247 | 8.967 | 3 | 82 | .000 |
| 2 | .485(b) | .236 | .217 | 1.3398 | -.011 | 1.235 | 1 | 82 | .270 |

a. Predictors: (Constant), CTR_SE, SN, ATT
b. Predictors: (Constant), CTR_SE, SN
c. Dependent Variable: INTU

**ANOVA**

| Model | | Sum of Squares | df | Mean Square | F | Sig. |
|---|---|---|---|---|---|---|
| 1 | Regression | 48.151 | 3 | 16.050 | 8.967 | .000(a) |
| | Residual | 146.779 | 82 | 1.790 | | |
| | Total | 194.930 | 85 | | | |
| 2 | Regression | 45.940 | 2 | 22.970 | 12.796 | .000(b) |
| | Residual | 148.990 | 83 | 1.795 | | |
| | Total | 194.930 | 85 | | | |

a. Predictors: (Constant), CTR_SE, SN, ATT
b. Predictors: (Constant), CTR_SE, SN
c .Dependent Variable: INTU

**Coefficients**

| Model | | Unstandardized Coefficients | | Standardized Coefficients | t | Sig. |
|---|---|---|---|---|---|---|
| | | B | Std. Error | Beta | | |
| 1 | | | | | | |
| | (Constant) | -1.325 | 1.015 | | -1.304 | .196 |
| | ATT | .183 | .164 | .123 | 1.111 | .270 |
| | SN | .315 | .183 | .188 | 1.719 | .089 |
| | CTR_SE | .618 | .146 | .418 | 4.223 | .000 |
| 2 | (Constant) | -1.019 | .979 | | -1.041 | .301 |
| | SN | .411 | .162 | .245 | 2.545 | .013 |
| | CTR_SE | .655 | .143 | .443 | 4.596 | .000 |

a. Dependent Variable: INTU

# Appendix 9

### 4.3.1. Direct pathways

| | **Observed output** | | | **Morgan and Hunt (1994)** | |
|---|---|---|---|---|---|
| | Path | Estimate | | Path | Estimate |
| 1 | Relationship termination costs → Relationship commitment | .173 | | Relationship termination costs → Relationship commitment | .367** |
| 2 | Relationship benefits → Relationship commitment | .467** | | Relationship benefits → Relationship commitment | -.006 |
| 3 | Shared values → relationship commitment | -.144 | | Shared values → relationship commitment | .189** |
| 4 | Shared values → Trust | .387** | | Shared values → Trust | .192** |
| 5 | Communications → Trust | .635** | | Communications → Trust | .184** |
| 6 | Opportunistic behaviour → Trust | -.801** | | Opportunistic behaviour → Trust | -.618** |
| 7 | Relationship commitment → Acquiescence | .187 | | Relationship commitment → Acquiescence | .561** |
| 8 | Relationship commitment → Propensity to leave | -.429** | | Relationship commitment → Propensity to leave | -.550** |
| 9 | Relationship commitment → Cooperation | .199 | | Relationship commitment → Cooperation | .252** |
| 10 | Trust → Relationship commitment | .461** | | Trust → Relationship commitment | .531** |
| 11 | Trust → Cooperation | .424** | | Trust → Cooperation | .507** |

| | | | | | |
|---|---|---|---|---|---|
| 12 | Trust → Functional conflict | .422** | | Trust → Functional conflict | .448** |
| 13 | Trust → Uncertainty | -.511** | | Trust → Uncertainty | -.331** |

### 4.3.2. Indirect pathways

| | **Observed output** | | | | | **SOBEL** | | **Morgan and Hunt (1994) Output** | |
|---|---|---|---|---|---|---|---|---|---|
| | **Path** | **Unmediated** | **Mediated by Trust (TR)** | **α** | **β** | **Estimate** | | **Path** | **Estimate** |
| 1 | Relationship termination costs → Acquiescence | | | | | - | | Relationship termination costs → Acquiescence | .206** |
| 2 | Relationship termination cost → Propensity to leave | | | | | - | | Relationship termination cost → Propensity to leave | -.202** |
| 3 | Relationship termination cost | | | | | - | | Relationship termination cost → Cooperation | .093** |

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | → Cooperation | | | | | | | | |
| 4 | Shared values → Relationship commitment | | | | | | | Shared values → Relationship commitment | .102** |
| 5 | Shared values → Acquiescence | | | | | - | | Shared values → Acquiescence | .163** |
| 6 | Shared values → Propensity to leave | | | | | - | | Shared values → Propensity to leave | -.160** |
| 7 | Shared values → Cooperation | SV→COOP b=.409** | SV→COOP b=.289** | SV→TR b=.386** | TR→COOP b=.424** | 2.3881** | | Shared values → Cooperation | .171** |
| 8 | Shared values → Functional conflict | SV→FC b=.57** | SV→FC b=.478** | SV→TR b=.386** | TR→FC b=.424** | 2.1190* | | Shared values → Functional conflict | .448** |
| 9 | Shared value → Uncertainty | SV→UNC b=-.344** | SV→UNC b=-.174 | SV→TR b=.386** | TR→UNC b=-.509 | 2.9910 | | Shared value → Uncertainty | -.064** |
| 10 | Communication → relationship commitment | COM→RC b=.394** | COM→RC b=.166 | COM→TR b=.637** | TR→RC b=.463** | .2.6767** | | Communication → relationship commitment | .097** |
| 11 | Communication → Acquiescence | | | | | | | Communication → Acquiescence | .055** |
| 12 | Communication → Propensity to leave | | | | | - | | Communication → Propensity to leave | -.054** |
| 13 | Communication → Uncertainty | COM→UNC b=-.443** | COM→UNC b=-.2 | COM→TR b=.637** | TR→UNC b=-509 | 2.9581** | | Communication → Uncertainty | -.061** |

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| 15 | Opportunistic behaviour → Relationship commitment | | | | | - | | Opportunistic behaviour → Relationship commitment | -.327** |
| 16 | Opportunistic behaviour →Acquiescence | | | | | - | | Opportunistic behaviour → Acquiescence | -.184** |
| 17 | Opportunistic behaviour → Propensity to leave | | | | | - | | Opportunistic behaviour → Propensity to leave | .180** |
| 18 | Opportunistic behaviour → Cooperation | | | | | - | | Opportunistic behaviour → Cooperation | -.396** |
| 19 | Opportunistic behaviour → Functional conflict | | | | | - | | Opportunistic behaviour → Functional conflict | -.277** |
| 20 | Opportunistic behaviour → Uncertainty | OB→UNC b=.5** | OB→UNC b=.257 | OB→TR b=-801** | TR→UNC b=-509** | 1.9743* | | Opportunistic behaviour → Uncertainty | -.204** |
| 21 | Trust → Acquiescence | | | | | - | | Trust→Acquiescence | .299** |
| 22 | Trust → Propensity to leave | | | | | - | | Trust → Propensity to leave | -.292** |

* = p<.05
** = p<.01

## Appendix 10

### Correlations of all variables for females

| Female | RB | RC | SV | OB | RTC | COM | CTRD | TR | ACQ | PTL | COOP | FC | UNC | ATT | SN | CTR_SE | ACC* |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| RB | 1 | | | | | | | | | | | | | | | | |
| RC | .362* | 1 | | | | | | | | | | | | | | | |
| SV | .456** | .266 | 1 | | | | | | | | | | | | | | |
| OB | -.614** | -.389* | -.630** | 1 | | | | | | | | | | | | | |
| RTC | .294 | .326 | .387* | -.383* | 1 | | | | | | | | | | | | |
| COM | .666** | .365* | .446* | -.682** | .174 | 1 | | | | | | | | | | | |
| CTRD | -.076 | -.284 | .465** | -.169 | .236 | -.104 | 1 | | | | | | | | | | |
| TR | .521** | .300 | .487** | -.830** | .380* | .637** | .050 | 1 | | | | | | | | | |
| ACQ | .177 | .397* | .178 | -.277 | .298 | .145 | -.094 | .149 | 1 | | | | | | | | |
| PTL | -.524** | -.454* | -.037 | .243 | -.133 | -.402* | .339 | -.332 | -.299 | 1 | | | | | | | |
| COOP | .340 | .415* | .316 | -.560** | .277 | .253 | -.054 | .418* | .246 | -.153 | 1 | | | | | | |
| FC | .383* | .429* | .603** | -.560** | .179 | .427* | .125 | .452* | .184 | -.064 | .638** | 1 | | | | | |
| UNC | -.555** | -.418* | -.416* | .600** | -.217 | -.464** | .086 | -.577** | -.144 | .400* | -.419* | -.557** | 1 | | | | |
| ATT | .527** | -.108 | .457** | -.614** | .442* | .395* | .371* | .633** | -.004 | -.163 | .161 | .136 | -.284 | 1 | | | |
| SN | .406* | -.090 | .447* | -.337 | .060 | .402* | .091 | .342 | -.009 | -.083 | .292 | .500** | -.565** | .272 | 1 | | |
| CTR_SE | .148 | .135 | .205 | -.083 | .149 | -.070 | .229 | .237 | -.276 | -.094 | -.113 | .086 | -.103 | .223 | -.035 | 1 | |
| ACC* | .092 | -.145 | .110 | -.292 | .043 | -.132 | .251 | .251 | -.030 | -.007 | .221 | .376* | -.331 | .284 | .175 | .222 | 1 |

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

## Correlations of all variables for males

| Male | RB | RC | SV | OB | RTC | COM | CTRD | TR | ACQ | PTL | COOP | FC | UNC | ATT | SN | CTR_SE | ACC* |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| RB | 1 | | | | | | | | | | | | | | | | |
| RC | .467** | 1 | | | | | | | | | | | | | | | |
| SV | .527** | .074 | 1 | | | | | | | | | | | | | | |
| OB | -.700** | -.471** | -.498** | 1 | | | | | | | | | | | | | |
| RTC | -.142 | -.037 | .283* | .068 | 1 | | | | | | | | | | | | |
| COM | .802** | .388** | .504** | -.719** | -.077 | 1 | | | | | | | | | | | |
| CTRD | .115 | -.233 | .298* | .049 | .159 | .044 | 1 | | | | | | | | | | |
| TR | .637** | .540** | .330* | -.818** | -.128 | .595** | .022 | 1 | | | | | | | | | |
| ACQ | .235 | .172 | .042 | -.233 | .120 | .254 | -.151 | .183 | 1 | | | | | | | | |
| PTL | -.028 | -.468** | .214 | -.032 | .195 | .032 | .160 | -.203 | -.002 | 1 | | | | | | | |
| COOP | .536** | .253 | .466** | -.534** | .125 | .340* | .114 | .430** | .066 | .103 | 1 | | | | | | |
| FC | .465** | .129 | .540** | -.471** | .031 | .499** | -.030 | .368** | .233 | .220 | .348* | 1 | | | | | |
| UNC | -.426** | -.056 | -.302* | .484** | .276 | -.408** | -.150 | -.409** | -.053 | -.179 | -.378** | -.348* | 1 | | | | |
| ATT | .238 | .105 | .353* | -.378** | .159 | .242 | .123 | .261 | .046 | .162 | .410** | .087 | -.325* | 1 | | | |
| SN | .010 | -.052 | .204 | -.116 | .289* | .065 | .048 | .048 | -.156 | .383** | .135 | -.070 | -.148 | .487** | 1 | | |
| CTR_SE | .533** | .291* | .116 | -.476** | -.241 | .321* | .295* | .485** | .065 | -.045 | .337* | .020 | -.311* | .198 | -.128 | 1 | |
| ACC* | .015 | -.201 | .330* | -.059 | .431** | -.046 | .573** | .050 | -.043 | .258 | .124 | -.035 | -.078 | .298* | .301* | .182 | 1 |

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

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

## Correlation for all variables ages 15-24

| | RB | RC | SV | OB | RTC | COM | CTRD | TR | ACQ | PTL | COOP | FC | UNC | ATT | SN | CTR_SE | ACC* |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| RB | 1 | | | | | | | | | | | | | | | | |
| RC | .269 | 1 | | | | | | | | | | | | | | | |
| SV | .392 | -.240 | 1 | | | | | | | | | | | | | | |
| OB | -.647** | -.238 | -.518* | 1 | | | | | | | | | | | | | |
| RTC | .116 | -.176 | .525* | -.343 | 1 | | | | | | | | | | | | |
| COM | .797** | .218 | .484* | -.561** | .128 | 1 | | | | | | | | | | | |
| CTRD | .009 | -.308 | .664** | -.341 | .642** | .124 | 1 | | | | | | | | | | |
| TR | .507* | .153 | .414 | -.644** | .364 | .432* | .195 | 1 | | | | | | | | | |
| ACQ | .379 | .219 | .235 | -.467* | .142 | .405 | .240 | .041 | 1 | | | | | | | | |
| PTL | -.462* | -.335 | -.052 | .192 | -.122 | -.365 | .187 | -.417 | .105 | 1 | | | | | | | |
| COOP | .153 | .365 | .184 | -.482* | .082 | .087 | .079 | .240 | .403 | .096 | 1 | | | | | | |
| FC | .465* | .257 | .478* | -.543** | .170 | .558** | .217 | .371 | .609** | .028 | .360 | 1 | | | | | |
| UNC | -.696** | -.053 | -.295 | .752** | -.389 | -.499* | -.068 | -.678** | -.242 | .446* | -.234 | -.297 | 1 | | | | |
| ATT | .500* | .056 | .662** | -.576** | .609** | .405 | .376 | .651** | -.154 | -.481* | .216 | .292 | -.612** | 1 | | | |
| SN | .420 | -.089 | .491* | -.524* | .432* | .268 | .205 | .464* | .219 | -.196 | .420 | .334 | -.505* | .520* | 1 | | |
| CTR_SE | .312 | .067 | .252 | -.208 | .296 | .150 | .227 | .514* | .019 | -.050 | -.039 | .437* | -.326 | .371 | .249 | 1 | |
| ACC* | -.012 | -.419 | .247 | -.150 | .410 | -.165 | .471* | .155 | -.046 | .082 | -.176 | .103 | -.271 | .346 | .149 | .519* | 1 |

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

## Correlations for all variables ages 25-34

| | RB | RC | SV | OB | RTC | COM | CTRD | TR | ACQ | PTL | COOP | FC | UNC | ATT | SN | CTR_SE | ACC* |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| RB | 1 | | | | | | | | | | | | | | | | |
| RC | .476** | 1 | | | | | | | | | | | | | | | |
| SV | .287 | .108 | 1 | | | | | | | | | | | | | | |
| OB | -.555** | -.497** | -.318 | 1 | | | | | | | | | | | | | |
| RTC | -.041 | .169 | .086 | .117 | 1 | | | | | | | | | | | | |
| COM | .686** | .422* | .378* | -.694** | -.233 | 1 | | | | | | | | | | | |
| CTRD | .067 | -.359 | .389* | .082 | .004 | -.180 | 1 | | | | | | | | | | |
| TR | .518** | .489** | .314 | -.751** | -.038 | .493** | .065 | 1 | | | | | | | | | |
| ACQ | .142 | .309 | -.352 | -.067 | -.187 | .077 | -.178 | .119 | 1 | | | | | | | | |
| PTL | -.206 | -.500** | -.008 | -.020 | -.219 | -.208 | .257 | -.137 | -.251 | 1 | | | | | | | |
| COOP | .255 | .168 | .271 | -.379* | .357 | -.032 | .181 | .412* | -.162 | .013 | 1 | | | | | | |
| FC | .195 | .245 | .503** | -.550** | -.254 | .502** | .075 | .548** | -.192 | .116 | .269 | 1 | | | | | |
| UNC | -.218 | -.218 | -.409* | .331 | .289 | -.339 | -.131 | -.367* | .179 | -.093 | -.233 | -.519** | 1 | | | | |
| ATT | .127 | -.062 | -.003 | -.255 | .283 | .088 | .292 | .154 | .225 | .094 | .196 | .059 | .111 | 1 | | | |
| SN | .069 | -.060 | .400* | .170 | .013 | .092 | .370* | .061 | -.293 | .088 | .199 | .357 | -.299 | -.016 | 1 | | |
| CTR_SE | .433* | .378* | .186 | -.260 | -.125 | .115 | .160 | .232 | -.102 | .010 | .078 | .098 | -.193 | -.092 | -.087 | 1 | |
| ACC* | -.011 | -.338 | .307 | .009 | .138 | -.179 | .751** | .098 | -.404* | .259 | .399* | .164 | -.150 | .346 | .389* | .091 | 1 |

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

Correlations for all variables ages 35-44

| | RBs | RC | SV | OB | RTC | COM | CTRD | TR | ACQ | PTL | COOP | FC | UNC | ATT | SN | CTR_SE | ACC* |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| RBs | 1 | | | | | | | | | | | | | | | | |
| RC | .582** | 1 | | | | | | | | | | | | | | | |
| SV | .589** | .204 | 1 | | | | | | | | | | | | | | |
| OB | -.762** | -.520** | -.601** | 1 | | | | | | | | | | | | | |
| RTC | .007 | .031 | .317 | -.129 | 1 | | | | | | | | | | | | |

| | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| COM | .808** | .405* | .473* | -.819** | .075 | 1 | | | | | | | | | | | |
| CTRD | .027 | -.309 | .103 | .152 | -.131 | -.030 | 1 | | | | | | | | | | |
| TR | .715** | .601** | .416* | -.899** | .081 | .843** | -.100 | 1 | | | | | | | | | |
| ACQ | .202 | .195 | .310 | -.261 | .351 | .218 | -.170 | .324 | 1 | | | | | | | | |
| PTL | -.055 | -.510** | .186 | .101 | .093 | .018 | .161 | -.295 | -.068 | 1 | | | | | | | |
| COOP | .659** | .502** | .679** | -.696** | .240 | .649** | -.045 | .588** | .278 | .068 | 1 | | | | | | |
| FC | .580** | .361 | .784** | -.521** | .369 | .540** | .057 | .509** | .356 | .008 | .654** | 1 | | | | | |
| UNC | -.409* | -.350 | -.473* | .614** | -.084 | -.497** | -.001 | -.585** | -.125 | .025 | -.556** | -.529** | 1 | | | | |
| ATT | .361 | .133 | .361 | -.454* | -.039 | .392* | .068 | .382* | .226 | .221 | .406* | .075 | -.368 | 1 | | | |
| SN | .178 | -.010 | .284 | -.283 | .259 | .310 | -.096 | .203 | -.026 | .388* | .310 | .013 | -.281 | .783** | 1 | | |
| CTR_SE | .504** | .442* | .061 | -.433* | -.039 | .361 | .409* | .480* | .120 | -.208 | .254 | .123 | -.278 | .225 | -.053 | 1 | |
| ACC* | .229 | .022 | .391* | -.339 | .544** | .206 | .328 | .279 | .352 | .141 | .411* | .261 | -.241 | .448* | .381* | .296 | 1 |

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

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

## Appendix 11

Mr A. Age 47 M Lawyer (regular banker)
Mr B. Age 56 M Manager social work (preferred banker)
Mr C. Age 27 M works part-time in bookstore (Young Prof.)
Ms D. Age 34 F, registered accountant and forensic researcher.
Mr E. Age 24 M, part-time as senior advisor for Vodafone.
Ms F. Age**, F, ambulance accompanist / counsellor / therapist
Ms G. Age 24 F, Student commercial Economics

Std A-E were all students of the university of Twente.

| Acceptance | | **Important issues** | **Who is involved** | **Interface or content** | **Relevant variable** | **Current situation** | **What is desirable** | **High/ low sensitivity** |
|---|---|---|---|---|---|---|---|---|
| 1. Average level of usage of online account. (Minimum) | Mr A | 2 per week | | | | | | |
| | Mr B | 1 per week | | | | | | |
| | Mr C | 2-3 per week | | | | | | |
| | Ms D | --- | | | | | | |
| | Mr E | 1 per day | | | | | | |
| | Ms F | 2 per month | | | | | | |
| | Ms G | 2-3 per week | | | | | | |
| | Std A | 1 per day | | | | | | |
| | Std B | 1 per day | | | | | | |
| | Std C | 1 per day | | | | | | |
| | Std D | 1 per day | | | | | | |
| | Std E | 1 per day | | | | | | |
| | | | | | | | | |
| 2. Main purpose of using the online account. | Mr A | To check current balance and control incoming and out going payments. | | | | | | |
| | Mr B | Savings and stock trading. | | | | | | |

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | Mr C | To check balance and control incoming and out going payments. | | | | | | |
| | Ms D | To check balance and control outgoing and incoming payments. | | | | | | |
| | Mr E | To check balance and control incoming and outgoing payments. | | | | | | |
| | Ms F | To make payments, transfers and checking of balance. | | | | | | |
| | Ms G | To make payment and check balance | | | | | | |
| | Std A | To make payments, transfers and checking of balance. | | | | | | |
| | Std B | To make payments, transfers and checking of balance. | | | | | | |
| | Std C | To make payments, transfers and checking of balance. | | | | | | |
| | Std D | To make payments, transfers and checking of balance. | | | | | | |
| | Std E | To check balance and control incoming and out going payments. | | | | | | |
| | | | | | | | | |
| 3. Communication / interaction with the bank.<br><br>- login<br>- email<br>- dynamic information | Mr A | Not aware of any online communication, excerpt for emails. Does not read them. | Bank | Content | COM | Medium | Low communication | Medium |
| | Mr B | Not aware of some of the modes of comm. He doesn't trust all there information. He prefers traditional methods of comm. Such a telephone, which is what he uses. He however scans for relevant messages. | Bank | Content | COM, TR | Medium | High communication | High |
| | Mr C | Aware of some communication but was distrustful of it. He was a bit averse to unsolicited communication. | Bank | Content | COM, TR | Medium | High communication | Neutral |

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | Ms D | Not really aware of any relevant communication. Has not noticed the email section. Would like fast access to relevant personnel, when necessary. | | | COM, TR, RC | Medium | High communication | Neutral |
| | Mr E | He is aware of most of the different forms of communication on the site. He however has a grudge against the bank so he blocks out all communication that is not relevant to what he is doing. He prefers when searching for information to talk with a person. According to him all communication should be relevant, quick and to the point or it will be shut out. | | | RB, RTC, RC, TR, COM, ATT | Medium | Low communication | Medium |
| | Ms F | Not really aware of the other forms of communication on the site. She does not feel she needs to communicate with her bank, because she has the impression they don't have any offer worth communicating about; "but I also don't feel the need to communicate like that with my bank." Also; "I am not such a fan of internet. So I'm not very interested in other things and I don't click on other links." | | | RB, COM, CTR_SE | Medium | Not important | Medium |

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | Ms G | She is not very knowledgeable about the portal/banking. She is not really aware of the information directed towards her on the site, for instance she has never noticed the emails. For her information sent to her directly by post is more relevant and easier to manage than that which comes through the website. | | | CTR_SE, COM, | Medium | Not interested | Medium |
| | Std A | Aware of some communication, but was not really interested. Felt the emails were irrelevant. | | | CTR_SE, COM, ATT | Medium | High, but unobtrusive | Low |
| | Std B | Not really aware of any communication. Did not notice the emails. She was very quick in her interaction with the site and did not think she would react to any communication. | | | ATT, CTR_SE, COM, RB, TR | Medium | Not interested | Low |
| | Std C | Not really aware of any communication. Did not notice the emails. | | | ATT, CTR_SE, COM, RB | Medium | Low | Low |
| | Std D | Not really aware of any communication. Did not notice the emails. | | | CTR_SE, COM | Medium | High | Low |
| | Std E | Not really aware of any communication. Did not notice the emails. | | | CTR_SE, COM | Medium | Medium | Low |
| | | | | | | | | |
| 4. Modifying settings | Mr A | He expects them to be done properly for him. If properly set out the customer can take control. | Bank/ customer | Interface | TR CTR_SE | n/a | A good system | Neutral |
| | Mr B | Would like this service. | Bank/ customer | Interface | CTR_SE | | Unsure | Neutral |
| | Mr C | Welcomes this service, and thinks it's useful. | Bank/ customer | Interface | CTR_SE | | A good system | Neutral |

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | Ms D | Welcomes this service and already knows what she will change. | | | CTR_SE | | A good system | Neutral |
| | Mr E | He thinks this feature will be useful if properly implemented. | | | CTR_SE | | A good system | Neutral |
| | Ms F | She thinks this service is irrelevant. She is more concerned with the speed at which the page loads and the practicality of the site. | | | CTR_SE, | | Irrelevant | Neutral |
| | Ms G | She thinks it's attractive but does not give any indication of its functionality. | | | CTR_SE | | Unsure | Neutral |
| | Std A | He felt it would be very useful especially for those with seeing problems. | | | CTR_SE | | A good system | Neutral |
| | Std B | She was not sure of its usefulness as she felt what was provided was good enough. | | | CTR_SE, ATT | | Unsure | Neutral |
| | Std C | She felt it was a good idea if it was easy to use. But felt it would be most relevant for those with sight problems as they could change to large font sizes. | | | CTR_SE | | A good system | Neutral |
| | Std D | He felt it was a good idea | | | CTR_SE | | A good system | Neutral |
| | Std E | He felt it was a good idea. | | | CTR_SE | | A good system | Neutral |
| | | | | | | | | |
| 5. Setting frequently used features on higher priority. | Std A-E | All the students felt it was a good idea | | | CTR_SE | | A good system | Medium |
| 6. Personal financial advice. | Mr A | He thinks the initiative should come from the customer. Expresses doubt about their intentions | bank | content | COM TR, RB | n/a | Some personalizati on | Sensitive |
| | Mr B | Would like this service | | | COM, TR, RB | | Some personalizati | Sensitive |

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | | | | | | | on | |
| | Mr C | He is not particularly enthusiastic because he has a small income | | | TR, COM | | Unsure | Sensitive |
| | Ms D | She thinks it's a good service and would be happy if presented in graphic form. | | | COM, | | Some personalization | Neutral |
| | Mr E | He thinks this is a very good idea "I think this is the first genius idea that I've seen so far." | | | COM, RB, | | High personalization | Neutral |
| | Ms F | She thinks this is a good thing, if it is personalized properly. | | | COM, RB, | | High personalization | Sensitive |
| | Ms G | She thinks this is a good thing and that it would be useful. She thinks text supported by a graphic display would be desirable. | | | RB, COM, | | High personalization | Neutral |
| | Std A | He thinks it is good idea. However he felt it was not very relevant for now. | | | ATT | | High on personalization | Neutral |
| | Std B | She feels that it would be useful later. | | | ATT, RB | | Unsure | Neutral |
| | Std C | She feels that it would be very useful, but was not ready to use it. | | | | | High personalization | Neutral |
| | Std D | He thinks it is a very good idea | | | RB, COM | | High on personalization | Sensitive |
| | Std E | He thinks it is okay if implemented properly | | | ATT, COM | | Unsure | Sensitive |
| | | | | | | | | |
| 7. Personal adverts/special offers (banner ads) | Mr A | He is not aware. Messages do not communicate. Commercial tricks. He feels as if he is being watched if they are very personal. Seeks information and offers only when there is need. | bank | content | COM TR, CTRD | Limited personalization | No personalization | Sensitive |

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| | Mr B | He is aware of the ads, thinks some are out of place and wants them removed. He however has reacted to at least one. | | | TR, COM | | No personalization | Sensitive |
| | Mr C | Aware of the adverts but blocks them out. He did not like the idea of them using his data to target him. | | | TR, COM, CTRD | | Relevant personalization | Sensitive |
| | Ms D | She does not notice the banner ads. She does not like the banner with the animated lady talking, she doesn't like the sound | | | COM, | | Relevant personalization | Neutral |
| | Mr E | He has set his computer to 'block' all banners ads. He finds them annoying; however he goes on to say that if the banners are to be of any effect they must be catching and relevant. | | | COM, TR, ATT | | Very accurate personalization | Neutral |
| | Ms F | She does not read them and thinks they are not really relevant to her. | | | COM, TR, ATT, | | Very accurate personalization | Neutral |
| | Ms G | She doesn't notice them "I just log in and do what I have to do. I don't have time for it actually." She is not aware they are targeted at her | | | CTR_SE, ATT, COM, | | Very accurate personalization | Neutral |
| | Std A | He notices them but thinks they are a nuisance. He does not think the targeting is smart | | | TR, ATT, COM | | Very accurate personalization | Neutral |
| | Std B | She does not really notice them as she is too busy concentrating on her main purpose | | | COM, CTR_SE | | Relevant personalization | Neutral |
| | Std C | She notices them but does not think they are addressed to her. She feels it is not relevant | | | ATT, COM | | Very accurate personalization | Neutral |
| | Std D | He notices them but ignores them | | | COM, ATT | | Relevant personalization | Neutral |

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| | Std E | He is indifferent towards them. He feels they are alright as long as they don't hinder him. | | | ATT, COM | | Very accurate personalization | Neutral |
| | | | | | | | | |
| 8. More personalized account and other interesting statements. | Mr A | Not very enthusiastic | bank | Interface /content | RB, RC, COM, TR, CTRD, CTR_SE | Very limited | Some personalization | Sensitive |
| | Mr B | A little enthusiastic | | | COM, TR, | | Some personalization | Sensitive |
| | Mr C | A little enthusiastic, but has a deep suspicion of their intentions. He is also suspicious of the Internet. **Quote**: "Then I don't think internet is good. Because you don't know who is on the other side. You don't know what they do with your information" | | | COM, TR, CTRD, CTR_SE | | Some personalization | Sensitive |
| | Ms D | She is has used the same bank all her life and feels some bonding. She would like alerts as to the status of her credit. **Quote**: "I don't want anything else from the ABN AMRO next to my payment account." "I work very structural and precise to do what I have to do." | | | COM, RC, TR, CTR_SE | | Some personalization | Neutral |
| | Mr E | Would want more relevant targeting **Quote**: I think this is the first genius idea that I've seen so far. | | | COM, | | Some personalization | Neutral |
| | Ms F | She does not like frequent communication with the bank or things that require effort on her part with out any special commensurate benefit. **Quote**: "I want to be able to access the site fast and leave it fast as well." | | | RB, COM, | | Very well targeted personalization | Neutral |

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| | Ms G | She feels any personalization should be well targeted. She believes that if she was aware that the messages were targeted at her she would pay more attention to them (this a double edged sword). | | | COM, CTR_SE, RB, | | | Neutral |
| | Std A | | | | | | | |
| | Std B | | | | | | | |
| | Std C | | | | | | | |
| | Std D | | | | | | | |
| | Std E | | | | | | | |
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| 9. Plan to fully utilize account features | | | | | | | | |