

**INTENTION TO USE INTERNET BANKING: DIFFERENCES  
BETWEEN USERS AND NON USERS AND  
THE MODERATING ROLE OF FELT WANT**

**A Thesis submitted to Goa University for the Award of the Degree of  
DOCTOR OF PHILOSOPHY**

**In**

**MANAGEMENT**

**By**

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Research Guide

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**Goa University,  
Taleigao Goa  
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# DEDICATION

This thesis is dedicated to my parents

*Mr. Inacio M. Braganza and (late) Mrs. Maria S. Braganza,*

To my husband, *Francis,*

And to my children,

*Daniola and Daylane,*

who always encouraged me towards higher academic pursuits.

# DECLARATION

I, Ms Prisca Isidore Braganza, do hereby declare that this dissertation titled **“Intention to Use Internet Banking: Differences Between Users and Non Users and the Moderating Role of Felt Want”** is a record of original research work done by me under the supervision of Dr. Nandakumar Mekoth, Professor, Department of Management Studies, Goa University.

I also declare that this dissertation or any part thereof has not been submitted by me for the award of any Degree, Diploma, Title or Recognition before.

Prisca Isidore Braganza

Place: Goa University

Dated: \_\_\_\_\_

# CERTIFICATE

This is to certify that the Ph.D. thesis titled “**Intention to Use Internet Banking: Differences Between Users and Non Users and the Moderating Role of Felt Want**” is an original work carried out by Ms Prisca Isidore Braganza under my guidance, at the Department of Management studies, Goa University.

This dissertation or any part thereof has not formed the basis for the award of any Degree, Diploma, Title or Recognition before.

Prof. Nandakumar Mekoth

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Place: Goa University

Date : \_\_\_\_\_

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Ms Prisca Isidore Braganza

# **Intention to Use Internet Banking: Differences Between Users and Non Users and the Moderating Role of Felt Want**

**By**

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## **ABSTRACT**

With the rapid developments in the field of Information and communication Technologies, internet banking has become a popular banking channel worldwide. This study examines the factors influencing the bank customers' intentions to adopt and use internet banking.

The review of literature relating to the factors influencing the adoption and use of internet banking indicates that there are numerous studies that have tried to identify the factors affecting the adoption and use and non adoption of internet banking, however limited research shows how the moderator variables influence the relationship between intention and the factors influencing intention. Also there is limited study conducted on the extensive comparison between the factors influencing the behaviour of the users and non users of internet banking. Hence, the present study provides additional insights into this issue.

Research model for the intention to adopt and use internet banking has been developed in the study. This research examines the moderating role of felt want in the Theory of Planned Behaviour and makes a comparative study of the factors influencing the behaviour of the users and the non users of internet banking in a comprehensive manner.

The subjects for this study were the bank customers having knowledge of internet banking. A total of 850 completed questionnaires were collected from 450 users and 400 non users of internet banking. Structural equation modelling (SEM) was the statistical technique employed in this study and the statistical package SPSS Version 21 and AMOS Version 22 were used to perform the required statistical tests.

The measurement models were validated by testing for convergent and discriminant validity. The structural models and hypotheses were tested and conclusions were drawn.

The main results of this study suggest that:

Felt Want for internet banking developed in the study is found to be influenced by the 4 factors; the services used/felt required, satisfaction with branch banking, nature and number of bank transactions and the use of internet banking by family members.

Perceived benefits and perceived risks have an influence on attitude, however perceived security and financial risk and perceived benefit of user friendliness have a very strong influence on the attitude of both the users and the non users of internet banking.

Self efficacy and facilitating conditions have a significant influence on perceived behavioral control for the users as well as the non users of internet banking.

The non users data is supported by the Theory of Planned Behaviour whereas our study on users data does not fully support the Theory of Planned Behaviour.

Felt want moderates the relationships between attitude, subjective norms and perceived behavioral control and the intention to use internet banking, in the theory of planned behavior for the non users of internet banking whereas the moderating role of felt want for the users is not significant enough.

The study found significant differences in the factors influencing Felt Want, attitude and intention, and also in the moderating role of Felt Want, for the users and the non users.

Based on the findings, managerial implications have been provided and areas for future research have been identified.

**Key Words:** Internet banking, users, non users, Theory of Planned Behaviour, intentions to adopt and use, Felt Want, Attitude

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# ABBREVIATIONS

<b>AGFI</b>	Adjusted Goodness of Fit Index
<b>AMOS</b>	Analysis of Moment Structures
<b>ATM</b>	Automated Teller Machine
<b>AVE</b>	Average Variance Extracted
<b>BI</b>	Behavioral Intention
<b>CFA</b>	Confirmatory Factor Analysis
<b>CFI</b>	Comparative Fit Index
<b>CVI</b>	Content Validity Index
<b>CR</b>	Construct Reliability
<b>C.R.</b>	Critical Ratio
<b>DOI</b>	Diffusion of Innovations
<b>DTPB</b>	Decomposed Theory of Planned Behavior
<b>EFA</b>	The Exploratory Factor Analysis
<b>GFI</b>	Goodness of Fit Index
<b>IFI</b>	Incremental Fit Index
<b>IB</b>	Internet Banking
<b>NFI</b>	Normal Fit Index
<b>RMSEA</b>	Root Mean Square Error of Approximation
<b>S-CVI-Avg</b>	Scale-Content Validity Index/ Average
<b>SEM</b>	Structural Equation Modeling
<b>S.E.</b>	Standard Error
<b>SPSS</b>	Statistical Package for Social Sciences
<b>UTAUT</b>	Theory of Unified Theory of Acceptance and Use of Technology
<b>I-CVI</b>	Item- Content Validity Index
<b>P</b>	Probability

<b>TLI</b>	Tucker Lewis Index
<b>TPB</b>	Theory of Planned Behavior
<b>TRA</b>	Theory of Reasoned Action
<b>TAM</b>	Technology Acceptance Model



# CHAPTER 1

## INTRODUCTION

### 1.1 BACKGROUND OF THE STUDY

Over the last few decades, the rapid advancements in electronics and information technology have brought about tremendous changes in the banking operations. The impressive progress in the field of technology has resulted in remarkable changes in the banking sector and has reduced the world to a global village (Lal & Saluja, 2012). Banks have introduced different electronic delivery channels such as telephone banking, automated teller machines, online banking, mobile banking, debit card and credit card to facilitate the customers to avail of the banking products and services at their convenience. Electronic banking has gained wide acceptance internationally and the advent of internet banking has led to a major banking revolution (Sikdar & Makkad, 2013).

Electronic Banking Services are predominantly based on the use of automated systems for providing banking products and services, thus providing customers with differentiated and systematic ways to avail of banking facilities at ease and convenience. Electronic banking has been adopted by the banking sector worldwide since it provides a wider scope for the bank customers as well as for the banks (Kaur & Kaur, 2011).

“Electronic innovation in banking can be traced back to the 1970s when the computerization of financial institutions gained momentum. However, a visible presence of this was evident to the customers since 1981, with the introduction of the automated teller machine” (I-Baghdadi, Rizvi, & Rizvi, 2009, p. 235). Electronic

banking has developed and grown over the years and has provided various banking channels for the customers to meet their varying needs.

Mermod (2011) observed that globalization and the development of new technologies led the banks to launch new channels in order to gain competitive advantage, reduce costs, improve the financial services provided, increase their customers and enhance their general customer loyalty. Electronic banking has broken the barriers of branch banking and has transformed branch banking in the brick and mortar mode into the click and order channel mode (Lal & Saluja, 2012).

The study by Loonam and O'Loughlin (2008) highlighted that technological advancements, changing social trends and increased preferences for convenience have caused the banks to re-evaluate their marketing strategies and have subsequently led them to the adoption of self-service banking technologies.

Internet banking is a popular form of electronic banking which is being increasingly used by the bank customers. Internet banking is the facility provided by the banks and financial institutions that enables the users to perform banking related transactions by using a personal computer or any mobile device offering internet connectivity (Singh, 2013). Internet banking has become the self - service delivery channel allowing banks to provide various services to their customers with more convenience through the web services technology (Safeena, Hema, & Abdullah, 2010).

Advances in electronic banking technology have created novel ways of handling daily banking affairs, especially via the online banking channel (Pikkarainen et al., 2004). Online banking or Internet Banking is a convenient form of electronic banking that

allows bank customers to conduct financial transactions from anywhere and at any time through the Internet on a secure website operated by the bank. Internet banking both as a transactional medium as well as an informational medium enables the user to execute bank related transactions through the Internet (Singh, 2013).

Internet banking facilitates direct access to account details, enables transfer of funds, facilitates making of fixed deposits, allows for multiple bills payment, buying of tickets, payment of fees, download of statements and allows the customer to perform an array of other banking transactions from the comfort of their home or work place or while travelling. By using internet banking, the customers can view their bank account and keep a track of all the transactions without visiting the bank. Internet banking is designed to streamline the performance of banking transactions that would otherwise require considerable time and effort.

During the last few decades, banks have brought about important changes in the banking sector and have adopted advanced technology in order to create a convenient and a more flexible banking structure which no longer requires the customers to travel to the bank to receive the banking services (Alexandris, Dimopoulou, & Giannikos, 2008). Internet banking allows the banking transactions online without restrictions of time and place, thus reducing the number of physical visits to the bank (Sharma & Sharma, 2011). Thus internet banking provides the place and time utility to the customers provided they have the internet access (Singh, 2012).

Online banking is an important channel in retail banking services. Banks of late have been switching to multi-channel distribution of their financial services through the

internet (Mermod, 2011). Internet has opened up new horizons for the banks and has moved them from the local frontiers to the global frontiers (Marvi & Ioannou, 2006).

Today, most of the banks offer internet banking services. Using internet banking or online banking provides the customers various benefits; it is a convenient form of banking and saves the customer's time, effort and cost in performing banking transactions. However the bank customers do perceive risks in the online banking usage. They are concerned about the security of their account information and banking transactions, since they are conducted via the internet. Hassan (2012) felt that it is very important for the bank customers that their transactions and personal information should be fully secured. The customers are also concerned about their ability to perform the online banking transactions accurately.

The use of internet banking by the bank customers is influenced by various factors such as their awareness of the features of internet banking and their perceptions of the benefits and risks in internet banking. The terms; internet banking and online banking, mean the same service and are synonymously used in this thesis.

The developments in Electronic banking have provided an innovative growth to the banking sector and have thus broken the barriers and limitations of branch banking. In recent times, internet banking has gained popularity and increasing number of bank customers has been adopting the service.

## **1.2 SIGNIFICANCE OF THE STUDY**

An effective banking system plays a significant role in the economic development of a country (Al-Qasa, Isa, Othman, & Faaeq, 2013). Banks, of late, are becoming more

customer-centered, along with the primary functions of accepting deposits and providing loans, banks also perform various agency functions and general utility functions such as collecting and clearing of cheques, dividends and interest warrant, making payments of insurance premium, rent, phone bills, electricity bills, water bills etc. (Saini & Sindhu, 2014). The role of the banks has evolved over the years and their activities have been widened to not only providing the debit card and credit card, but also to providing investment opportunities in financial products like mutual funds, stocks, life and non life insurance policies.

With the advancements in technology, the banking industry has been a leader in the electronic business world in recent years. The electronic banking revolution which allows for the conduct of banking transactions via the electronic delivery channels, has fundamentally changed the banking business and provided banks with new opportunities (Chavan, 2013). Internet banking which facilitates the performance of banking transactions via the internet is a popular form of e-banking which provides various benefits for the bank customers as well as for the bankers. For the bank customers the adoption and use of internet banking provides access to the bank account and allows the conduct of various financial transactions with convenience and ease thus saving their time and effort. For the banks, Internet banking has created value in terms of reducing cost, enhancing customer service and increasing their long-term profit. Thus banks are trying to get more and more people to use the internet banking service. However the adoption level of Internet banking by the customers has not been very high. Some researchers have found that the success of Internet banking is based on the customer's willingness to adopt and use the service and not only on the banks' strategies adopted (Chaipoopirutana, Combs, Chatchawanwan, & Vij, 2009; Hosein, 2009).

A significant number of internet users do not use Internet Banking, and hence there is a need to understand the reasons for not using the service (Geetika et al., 2008; Hosein, 2009). Recently, although the banks are making considerable effort to popularize internet banking among the customers, some consumers have not adopted internet banking in spite of being aware of the same. The academic studies on the acceptance and use of Online banking, which offers many benefits to the banks as well as to customers has gained special attention during the past several years as the banks have been implementing internet banking as part of their overall strategy (Hosein, 2009; Pikkarainen et al., 2004 ).

Since internet banking is a popular and fast growing delivery channel by banks, it was felt that a comprehensive study of the factors that affect consumer's intention to use the internet banking services would be of great significance to both the academicians and bankers alike. This research by applying the Theory of Planned Behaviour and by studying the moderating role of Felt Want would throw some light on the factors influencing the intention of the bank customers to use internet banking. The measurement scales to be developed for Felt Want and its determinants and also the comparative study between the users and the non users and the low want and high want users and non users would add to the existing body of knowledge in the area of behavioural intention in the context of banking services. Also the contribution of this study shall provide a significant base for conducting future research.

### **1.3 SCOPE OF THE STUDY**

This study is restricted to the bank customers having adequate knowledge of internet banking. The geographic area of the study is limited to the state of Goa in India. The

study covers the intentions of the bank customers to adopt and use internet banking and the determinants thereof by applying the Theory of Planned Behavior. The concept of Felt Want is introduced in this study and the factors determining Felt want are studied. The moderating role of felt want is tested in the theory of planned behavior. Also a comparative study is done between the users and the non users and also between the low want and high want users and non users.

#### **1. 4 RESEARCH PROBLEM**

Extensive research has been carried out on customer behavior in using the internet banking services. However few researchers have made a comparative study between the users and the non users of internet banking on the basis of factors such as self efficacy, accessibility to the computer and internet, demographic characteristics, level of trust, perceived benefits and perceived risks (Ozdemir & Paul, (2008); Mirza et al., (2009). Lichtenstein & Williamson, (2006); Demirdogen, et al., (2010)). Also very few studies have examined the moderating role of variables like age, gender, experience and self efficacy in similar studies (Tsai, Zhu, & Jang, 2013; Venkatesh, Thong, & Xu, 2012; AbuShanab, Pearson, & Setterstrom, 2010). However the moderating role of Felt Want for internet banking was not found to be studied. It was thus felt that an extensive study of the differences between the users and the non users regarding the factors influencing their intentions to adopt and use internet banking along with the moderating role of felt Want was not covered.

Customer behavior in using internet banking services has been studied by applying different Technology Adoption Theories such as; Theory of Reasoned Action (TRA), Technology Acceptance Model (TAM), Theory of Planned Behavior (TPB),

Decomposed Theory of planned Behaviour (DTPB), Diffusion of Innovations (DOI) Theory and Unified Theory of Acceptance and Use of Technology (UTAUT). From among the existing theories, this study adopted the Theory of Planned Behavior (TPB) (Ajzen, 1991) as its theoretical framework since it was felt that this theory would best suit the intended study.

“Past research has proved that the TPB is a well-constructed model for predicting and explaining human behaviours” (Shee & Wu, 2008, p.1396). The TPB with a strong predictive utility has been accepted as a well-established model for the prediction of intention, however some researchers have argued and criticised the narrow view of the TPB’s sufficiency and have suggested relevant external factors beyond the three components of the model in order to help in improving the model’s predictive ability on intention (Hasbullah, Mahajar, & Salleh, 2004). Ajzen (1991) has suggested that the Theory of Planned Behaviour is open to the inclusion of additional predictors if they could capture a significant proportion of the variance in intention.

This research work therefore intended to study the factors influencing the intentions of the bank customers by adopting the Theory of Planned Behaviour. The study also identified perceived benefits and perceived risks as determinants of attitude and examines the moderating role of felt Want in the theory of Planned Behaviour in order to provide a better and deeper understanding of the factors influencing the intention to use internet banking. Also this research intends to conduct a comprehensive study of the differences between the users and the non users regarding the influence of the various factors on their intentions to adopt and use internet banking.

**Research Questions**

This study is intended to seek answers to the following research questions:

1. What are the factors that influence the bank customers' intentions to adopt and use internet banking?
2. Does the Theory of Planned Behaviour (TPB) apply to the intentions to adopt and use internet banking?
3. Do factors determining intention to use internet banking differ between the users and non users of internet banking?
4. Does Felt want have a moderating effect on the relationship between attitude, subjective norm and perceived behavioural control and intention to use internet banking?
5. How is the moderating role of Felt Want different for the users and the non users?

**1.5 OBJECTIVES OF THE STUDY.**

The overall aim of this research is to extend our understanding of the factors influencing the intentions of the bank customers towards the adoption and use of internet banking. This study also intends to examine the moderating role of Felt Want and to make a comparative study of the influence of the factors on the intentions of the users and the non users of internet banking. This study is basically designed to achieve the following objectives:

1. To identify the factors influencing the intentions of the bank customers towards the adoption and use of internet banking by applying the Theory of Planned Behaviour.

2. To test the influence of the factors determining Felt want and attitude.
3. To examine the role of Felt want as a moderating variable on the relationship between attitude, subjective norm and perceived behavioural control and intention to use internet banking.
4. To identify the similarities and differences in the behaviour of the users and non users regarding internet banking adoption and use by comparing the structural models and the moderating role of felt want.

### **1.6 RESEARCH PLAN**

In the initial stage of this research work, the existing literature was reviewed on customer behavior in using electronic banking services. The factors influencing internet banking adoption and use were reviewed in more detail in order to have adequate knowledge on the determinants of the intention to use internet banking. Also the websites of the banks were being browsed to have an understanding of the various internet banking services provided by the banks. The researcher also availed of the internet banking services in order to experience the operation of the internet banking services.

In the second stage, an exploratory study was undertaken in order to gain first-hand knowledge of the reasons why customers have been using internet banking or not using internet banking, their perceptions of benefits and risks in using internet banking and also their extent of usage of the internet banking services. With this in mind, the semi-structured in-depth interviews were conducted with the bank customers using internet banking as well as not using internet banking. The responses

were summarized and conclusions were drawn which facilitated the development of the Hypotheses and the framing of the scale items.

The third stage of the research was to review the existing theories applied to the studies on internet banking adoption in order to understand the theoretical background adopted to predict customer's intentions to use internet banking. The scales to measure the constructs and variables used in similar studies were reviewed. The existing scales were modified for some constructs whereas for the others new scales were developed. Content Validity and face validity was ascertained to test the validity of the newly developed scale.

In the fourth stage, a quantitative study was undertaken wherein the questionnaires were personally administered to the bank customers. The responses on the 450 questionnaires of the users and on the 400 questionnaires of the non users were entered using SPSS and the data analysis was done using SPSS AMOS software. The Hypotheses were tested and the conclusions were drawn.

## **1.7 ORGANIZATION OF THE THESIS**

The thesis is organized into six chapters. A brief outline of each of them is given below:

**Chapter 1: Introduction:** This chapter includes the background of the study, scope of the study, significance of the study, research problem, objectives of the study, research plan and organization of the thesis.

**Chapter 2: Literature Review:** This chapter presents a review of the relevant literature in the areas of technology acceptance theories applied to consumer behavior in using internet banking services, factors influencing adoption and use and non adoption of internet banking, factors influencing attitude, moderator effects and the Research gap.

**Chapter 3: Research Methodology:** This chapter provides an outline of the research methodology adopted in the study. It contains details of the research design adopted, data collection tools and procedure and data analysis techniques.

**Chapter 4: Development of hypotheses and Scale:** This chapter deals with the development of hypotheses, the definition of terms, the development of scales for the constructs and the development of the measurement model and also presents the proposed model for the study.

**Chapter 5: Analysis and Results:** This chapter provides a detailed understanding of the analysis and results of the qualitative study and of the quantitative study. Data analysis is done by using SPSS and SEM using AMOS software for the structural models and for the multi-group analysis.

**Chapter 6: Discussions and Conclusions:** This chapter summarizes the findings of the study, provides the theoretical contributions, managerial implications of the study, limitations of the study, suggestions for future research work in the area and the conclusions of the study.



## CHAPTER 2

### LITERATURE REVIEW

This chapter aims at providing the foundation for developing a theoretical framework for the empirical investigation of bank customer's intentions of internet banking adoption and use. Therefore this chapter presents a review of the relevant literature in the areas of customer behaviour in using Electronic banking services and the Technology Adoption Theories applied to similar studies. Also literature review is provided of the factors influencing adoption and use and non adoption of internet banking, factors influencing attitude, the role of moderator variables and the studies relating to felt want. This chapter also provides the Research Gap.

#### 2.1 THEORETICAL BACKGROUND

Abundant studies aimed at understanding customer adoption of technology have been conducted in the past, in diverse research disciplines. Some of these studies are conducted on the adoption and use of the Internet Banking services by applying and extending the well-established Technology Adoption Theories such as; (i) Theory of Reasoned Action (TRA), (ii) Technology Acceptance Model (TAM), (iii) Theory of Planned Behaviour (TPB), (iv) Diffusion of Innovations (DOI), (v) Unified Theory of Acceptance and Use of Technology (UTAUT) and (vi) Decomposed Theory of Planned Behaviour (DTPB). These theories are widely used in predicting behavioural intentions.

**1. The Theory of Reasoned Action (TRA)** was developed by Martin Fishbein and Icek Ajzen in 1975. TRA posits that individual behaviour is driven by behavioral

intentions where behavioural intentions are a function of an individual's attitude towards the behaviour and subjective norms surrounding the performance of the behaviour. According to the theory of reasoned action, if people evaluate the suggested behaviour as positive (attitude), and if they think their significant others want them to perform the behaviour (subjective norm), this results in a higher intention (motivations) and they are more likely to do so.

**2. The Technology Acceptance Model (TAM)** by Fred Davis (1989) is the most influential extensions of TRA. The (TAM) is an information systems theory model which states that an individual's acceptance and use of technology is determined by behavioural intentions, which, in turn, is determined by his attitude towards the behaviour. Attitude in turn is determined by two beliefs: perceived usefulness (PU) and perceived ease of use (PEOU). PU refers to the extent to which a person believes that using the system will improve his or her job performance. PEOU refers to the extent to which a person believes that using the system will be free of effort. Davis posited in TAM that the two theoretical constructs, Perceived Usefulness and Perceived Ease of Use, are fundamental determinants of system use in an organization.

**3. The Theory of Reasoned Action (TRA)** was revised and extended and later modified by Azjen (1991) to become the **Theory of Planned Behaviour (TPB)** by adding the construct perceived behavioural control to take into account the situation that occurs when complete control over behaviour is not possible, as in the case of an individual lacking necessary resources or skill to perform a behaviour. Perceived behavioral control is an individual's perceived ease or difficulty of performing the particular behaviour.

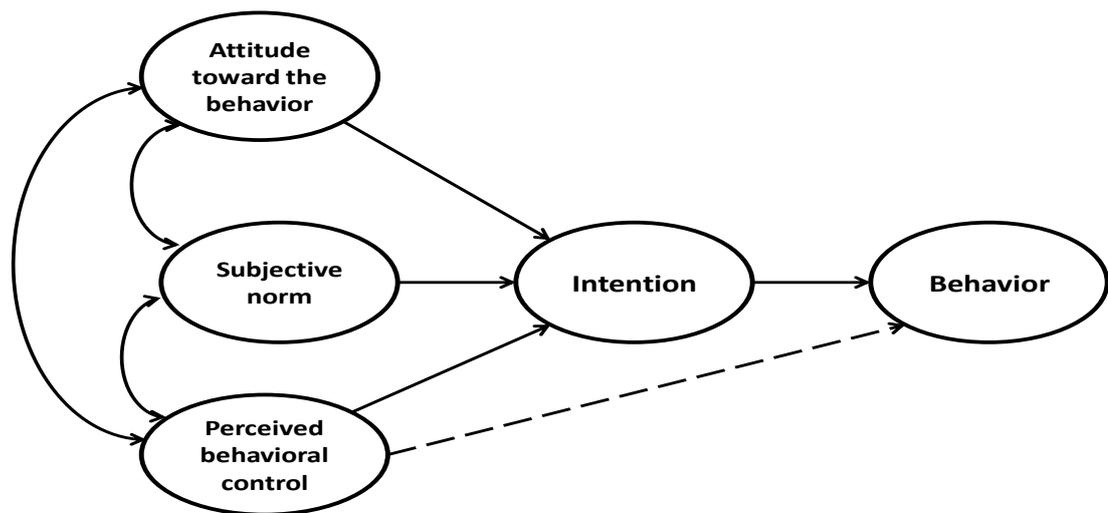


Figure 2.1. The Theory of Planned Behaviour (TPB) (Source: Ajzen 1991)

**4. The Unified Theory of Acceptance and Use of Technology (UTAUT)** formulated by Venkatesh and others (2003), is a Technology Acceptance Model. The UTAUT aims to explain the user intentions to use an information system and its subsequent usage behaviour. The theory proposes four key constructs. The first three constructs; performance expectancy, effort expectancy and social influence being direct determinants of usage intention and behaviour and the fourth construct; facilitating conditions being a direct determinant of use behaviour. The theory posits the factors; gender, age, experience and voluntariness of use to moderate the influence of the four key constructs on the usage intention and behaviour.

### **5. Diffusion of Innovations Theory (DOI)**

According to Rogers' (1983) Diffusion of Innovations theory, the innovation-decision process occurs overtime and involves five stages: 1) knowledge, 2) persuasion, 3) decision, 4) implementation and 5) confirmation. Rogers (1983) stated that "diffusion is the process by which an innovation is communicated through certain channels over

time among the members of a social system” (p. 5) and “an innovation is an idea, practice, or object perceived as new by an individual or other unit of adoption” (p. 11). Rogers (1983) has proposed five characteristics of innovations: 1) relative advantage, 2) compatibility, 3) complexity, 4) trialability and 5) observability. These five factors would shape the rate and likelihood of adoption of innovation.

### **6. The Decomposed Theory of Planned Behaviour (DTPB).**

Taylor and Todd (1995) proposed the decomposed TPB (DTPB) by recommending a set of decomposed belief structures for the TPB. This Theory focuses on the identification of beliefs and factors which would influence the three determinants of behaviour, namely; attitudes, subjective norms and perceived behavioural control. Thus the Theory proposes the attitudinal, normative and control beliefs to be decomposed into multi-dimensional belief constructs

## **2.2 TECHNOLOGY ADOPTION THEORIES APPLIED TO ELECTRONIC BANKING**

Sommer (2011) stated that the Theory of Planned Behaviour (TPB) has been successfully applied to explain human behaviour and that while it is generally accepted to adopt the main elements of the theory, it has been suggested on many occasions that the explanatory quality of the model would benefit by the inclusion of more constructs. A number of studies have adopted the Theory of Planned Behaviour and many of these studies have included additional constructs in studying their influence on intentions to use internet banking. Many studies have also adopted TAM and have integrated the TAM with TPB and other theories and constructs. Some studies have also adopted TRA, UTAUT, DTPB and DOI to understand customer

behaviour in using internet banking services. Some of such studies undertaken and the findings of the study are stated below.

AL-Muala, AL-Majali, & AL Ziadat (2012) have empirically tested the research model based on the theory of Reasoned action in Jordan as the sampling frame and for Internet banking as the target technology. The results have supported the theory's proposition that individuals' behavioural intention to use Internet banking service is influenced by their attitude and subjective norm. The results indicate the applicability and ability of the Theory of Reasoned Action to predict adoption intentions.

Shih & Fang (2006) also replicated the Theory of Reasoned Action (TRA) to probe the influence of attitude and subjective norm factors on the adoption intention of Internet Banking. The analytical results using Structural equation modelling however found that Attitude was significantly related to the intention to adopt internet banking whereas subjective norm was not found to be significantly related to the intention to adopt internet banking.

Bhatt (2011) applied the Theory of Planned Behaviour to understand the Perspective in India's Internet Banking service and found that attitude, subjective norms and perceived behavioural control have a significant relationship with behavioural intention. The study also observed that perceived behavioural control and subjective norms have a very strong relationship with behavioural intention.

The study by AL-Majali, & Mat (2010) investigates into the predictors of internet banking services adoption in Jordan by applying the TPB model. The findings indicate that all the predictors; attitude, subjective norm and perceived behavioral control are found to have a significant and positive influence on the intention to use

internet banking services in Jordan. This finding of the study suggested that positive attitude, support from subjective norms and perceived behavioural control are important for positive behavioural intention towards Internet Banking Services and that family members and mass media play an important role in influencing customers to adopt this technology.

The study by Zolait (2014) adopted the Theory of Planned Behaviour to predict the intentions of bank customers to adopt Internet banking and attempted to investigate the nature and components of Perceived Behavioural Control. This study identified two determinants: (1) self-efficacy and (2) facilitating conditions. Facilitation conditions were studied under 3 dimensions: (1) resources, (2) technology and (3) government support. The findings revealed that Perceived behavioural control over the use of internet banking services is influenced by self efficacy and facilitating conditions and that the influence of self efficacy on Perceived behavioural control is more significant. In a similar study by Al-Majali and Mat (2010) it was found that Perceived behavioural control is found to be significantly influenced by both self-efficacy and government support and not by technical support.

The study on internet banking in Taiwan by Shih and Fang (2004) observed that self efficacy is a significant determinant of the Perceived behavioural control however facilitating conditions is not a significant determinant. Similarly Mirza, Beheshti, Wallstrom, & Mirza (2009) found that the Computer proficiency has a significant influence on adoption and that people with higher personal computer self efficacy are more readily prepared to use the internet banking services. The study also stated that the level of personal computer skill differs between the users and the non users.

The study by Takele and Sira (2013) analysed the factors that influence customers' intention to adopt e-banking service by integrating six variables from the Theory of Planned Behaviour, Technology Acceptance Model and previous studies. The findings of this study revealed that attitude, subjective norm, perceived behavioural control, perceived usefulness, perceived ease of use and perceived risk were significant in affecting users' intention to use e-banking service channels and that the construct perceived behavioral control emerged as a dominant factor followed by attitudes and perceived usefulness in predicting an individual's intention.

The study by Safeena, Date, Hundewale & Kammani (2013) examined the influence of perceived ease of use, perceived usefulness, attitude, subjective norm and perceived behavioral control of Internet banking on the use of internet banking through an integration of TAM and TPB. The results showed that all the factors; perceived ease of use, perceived usefulness, attitude, subjective norm and perceived behavioral control have a positive effect on the use of internet banking.

Rouibah, Ramayah & May (2011) used three models (TAM, TPB and TRA) to test the impact of five factors; perceived ease of use, perceived usefulness, attitude, subjective norms and perceived behavioral control on intention to adopt e-banking. The results showed that attitude, subjective norm, perceived behavioral control, perceived usefulness and perceived ease of use exert a positive direct effect on behavioral intention. It was also observed that attitude towards behavior has the highest beta, followed by perceived usefulness and subjective norm, while perceived behavioral control exerts the weakest effect.

The integrated model of Technology Acceptance Model and Theory of Planned Behaviour was used by Yaghoubi & Bahmani (2010) as the underlying framework of the study on factors influencing the customers' adoption of internet banking services in Iran. The results showed that the proposed model has good explanatory power and confirms its robustness in predicting customers' intentions to use online banking services and demonstrated that online banking services adoption can be explained in terms of perceived behavioral control, perceived usefulness, perceived ease of use, subjective norm and attitude. The results indicated that the intention to use online banking is positively affected mainly by perceived behavioral control and perceived usefulness.

The study by Aboelmaged & Gebba (2013) aims at extending our understanding regarding the adoption of mobile banking by integrating the Technology Acceptance Model (TAM) and the Theory of Planned Behavior (TPB). The results of the study indicated that there is a significant positive impact of attitude toward mobile banking and subjective norm on mobile banking adoption. However the effects of behavioral control and usefulness on mobile banking adoption were insignificant. The results also indicated a significant impact of perceived usefulness on attitude toward mobile banking while the effect of perceived ease of use on attitude toward mobile banking was not supported.

Another study by Yaghoubi & Bahmani (2011) combined the Theory of Perceived Risk (TPR) with the Theory of planned Behavior (TPB) to understand customers' adoption of internet banking in Iran. The findings of the study revealed that attitude, subjective norm and perceived behavioural control have an influence on the intention

to use internet banking and that time risk, social risk, performance risk, security risk and financial risk have an influence on attitude.

Sanayei and Bahmani (2012) used the technology acceptance model, theory of planned behaviour and theory of perceived risk to build a comprehensive model to measure customers' acceptance of internet banking. The results of this study suggests that attitude, subjective norm, perceived behavioural control, financial risk and security risk have an influence on customers' behavioural intentions to adopt internet banking, however perceived usefulness is the most important positive predictor and security risk is the most important negative predictor of the intention to use internet banking.

The study by Al-Smadi (2012) on the factors affecting adoption of electronic banking, integrates the Technology Acceptance Model (TAM) with the theory of planned behaviour model (TPB) and incorporates five cultural dimensions and perceived risk to propose a theoretical model. The study found that attitude, subjective norm, and perceived behavioural control have a significant influence on the customer's intention to use electronic banking. However intention was mostly determined by their attitude and less by subjective norm and perceived behavioural control.

By integrating the TAM and TPB with perceived benefits and perceived risk, Lee (2008) tried to propose a theoretical model to explain customers' intentions to use online banking by finding out the relationship between attitude, subjective norm, perceived behavioural control, perceived usefulness, perceived benefits, perceived financial risk and security risk on intention. The results indicated that the intention to use internet banking was jointly predicted by all the 7 factors and that intention is

adversely affected mainly by the security/privacy risk, as well as financial risk and is positively affected mainly by perceived benefit.

The study by Khanifar et al. (2012) integrates electronic service quality with Technology Acceptance Model and Theory of Planned Behavior model to identify and explain the factors affecting customers' intention to use e-banking. This study investigated the influence of perceived usefulness and perceived ease of use, subjective norm and perceived behavioural control on attitude and the influence of electronic service quality, attitude, subjective norm and perceived behavioural control on intention. The results from path analysis showed that perceived e-service quality and subjective norm have significant direct influences on intention to use. However, the findings indicate that perceived behavioural control has a significant indirect influence on intention to use e-banking through subjective norm.

The study by Nasri & Zarai (2014) attempted to identify the factors that encourage customers to adopt Internet Banking in Tunisia by extending the Technology Acceptance Model (TAM). The results show that intention to adopt Internet banking can be predicted by perceived usefulness and perceived ease of use. Perceived usefulness appeared to be an important predictor of intention to use Internet banking as compared to perceived ease of use. The study also stated that perceived usefulness can be determined by ease of use, awareness of the service and its benefits and social influence while their perceived ease of use is affected by privacy and security and computer self efficacy.

The study by Wu, Lin, Li, & Lin (2010) considered the Technology Adoption Model and intended to develop a comprehensive conceptual framework for examining and explaining the relationship between customers' perceived usefulness of online banking and its influencing factors; the relative advantages of online banking, knowledge & support, its website quality, perceived ease of use, information quality and customer trust in Taiwan. The results of the regression analysis conducted on the six factors indicates that relative advantages, perceived ease of use and trust were the most influential factors explaining perceived usefulness of online banking services and that the benefits provided by online banking, influence customer's intention to adopt online banking.

The study by Maditinos, Chatzoudes, & Sarigiannidis (2013) developed and tested an extension of the TAM by incorporating perceived enjoyment, perceived risk and quality of the internet connection to the TAM for examining the factors that influence the adoption of internet banking in Greece. In this research, Risk was studied in 5 dimensions; performance risk, social risk, time risk, financial risk and security risk. The results showed the important impact of perceived usefulness, Perceived enjoyment, security risk and performance risk on the intention to use internet banking. On the contrary, perceived ease of use and the quality of the internet connection seemed to have only an indirect effect through perceived usefulness on the intention to use internet banking.

The study investigating the Determinants of Internet Banking Adoption in Greece by Santouridis & Kyritsi (2014) confirmed that the customer perceptions about easiness of use, usefulness and credibility have a significant influence on the intentions towards using the Internet Banking channel. The results showed that the most

significant determinant of Behavioural intention was proved to be Perceived Usefulness. Perceived ease of use was found to have a less effect on Behavioural Intention as compared to Perceived Usefulness. The findings also revealed that changes in Perceived Credibility will exhibit a greater effect on Behavioural Intention as compared to that caused by a change in Perceived Ease of Use. Moreover it was also proved that domain specific innovativeness and satisfaction with ATMs were strong predictors of customer's intentions to use internet banking.

An extended Technology Acceptance Model was developed by Singh (2012) as a conceptual framework to analyze the factors influencing users' acceptance and intention to use electronic banking. The model employed Perceived Credibility and Customer Attitude as extensions to the two constructs for TAM model: Perceived Usefulness and Perceived Ease of Use, to better reflect the users' views. The results showed that customer attitude, perceived usefulness and perceived ease of use are critical factors that affect the user acceptance of e-banking. However although perceived credibility was found to be significantly and positively correlated with the user acceptance of E-Banking, the relationship was found to be relatively weak.

Pikkarainen et al. (2004) conducted a study on consumer acceptance of online banking by extending the Technology Acceptance Model with the inclusion of 3 other variables; security and privacy, perceived enjoyment and information on online banking. The results of the regression analysis conducted on the five factors found that Perceived Usefulness and the amount of information on online banking were the most influential factors explaining the use of online banking services. However, Perceived Ease of use, security and privacy and perceived enjoyment were not found to have a statistically significant influence on the use of online banking.

The study by Intana & Chansangavej (2014) extended the Technology Acceptance Model by considering two additional constructs namely Perceived Privacy and Normative Belief along with Perceived Usefulness and Perceived Ease of Use, to understand its influence on the Intention to use internet banking. The results using SEM suggested that the extended TAM provides better explanatory power by the addition of Normative Belief however the influence of Perceived Privacy to explain Internet banking adoption is not supported by the empirical data.

Daud et al. (2011) conducted a study to examine critical success factors that influence the adoption of mobile banking in Malaysia by using the extended Technology Acceptance Model (TAM) to include perceived credibility, customer awareness and perceived risk. The findings indicate that this model can predict consumer intention to use mobile banking, specifically, the factors perceived usefulness, perceived credibility and awareness about mobile banking have a significant effect on the intention to adopt mobile banking.

The research by Tan, Potamites, & Wens-Chi (2012) based on the technology acceptance model (TAM) examined the factors influencing the online banking adoption behavior of clients in the Pescadores. The results showed that perceived usefulness and attitude have positive influences on the intention to use online banking services.

The study by Amin, Baba, & Muhammad (2007) adopts the Technology Acceptance Model to investigate factors that determine an individual's intention to use mobile banking by including additional factors; perceived credibility, perceived self-efficacy and normative pressure. The results support the extended TAM in predicting bank

customers' behavioural intention to use mobile banking. The determinants; perceived usefulness, perceived ease of use, perceived credibility and perceived self-efficacy were found to have an influence on intention whereas normative pressure was found to be a weak determinant in explaining bank customers' intention to use mobile banking. The study also demonstrated the significant effect of perceived ease of use on behavioural intention through perceived usefulness.

The study on E-banking in Jordan by Abbad (2013) examined the factors underlying customers' adoption of technology by extending the Technology Acceptance Model and found that the factors perceived ease of use, perceived usefulness, subjective norms, security and trust, internet experience and enjoyment were the important factors affecting customers' adoption of Electronic banking in Jordan.

Ariff et al. (2013) attempted to examine the impact of Computer Self Efficacy and the extended Technology Acceptance Model on the behavioral intention to use the internet banking systems. The conceptual model of this study included Perceived credibility as the additional dimension to the Technology Acceptance Model. The findings of the study indicated that Computer Self Efficacy, perceived usefulness, perceived ease of use and Perceived credibility of the extended TAM were determinants of users' acceptance of internet banking systems. Also perceived usefulness, perceived ease of use and Perceived credibility significantly affected Behavioral Intention, and that the respondents' perceived credibility of the internet banking system had the strongest impact on their intention to use the system. The findings also unveiled that indirect relationship existed between Computer Self Efficacy and Behavioral Intention through perceived usefulness, perceived ease of use and Perceived credibility

Luarn & Lin's (2005) extended the applicability of the TAM in the mobile banking context by adding one trust-based construct "perceived credibility" and two resource-based constructs "perceived self-efficacy" and "perceived financial cost" to the TAM model to explain and predict consumer intentions to use mobile banking. The findings of this study revealed that all the factors; perceived usefulness, ease of use, credibility, self-efficacy and financial resources have a positive influence on behavioural intention to use mobile-service systems. The study also found that both perceived credibility and perceived financial resources were found to have a stronger effect on behavioural intention than the perceived ease of use. Also the security and privacy issues were found to be a significant concern for consumers when using mobile banking. The study also found that Perceived self-efficacy has a significant effect on perceived ease of use which in turn had positive influences on perceived usefulness, perceived credibility and behavioral intention.

AlSoufi & Ali (2014) extended the Technology Acceptance Model (TAM) to incorporate the role of factors in influencing customer's perception towards Mobile-banking adoption. The results revealed that the intention to adopt mobile banking is mainly affected by Perceived Usefulness and Ease of Use and not by perceived cost and that Perceived risk has indirect relationship with intention to use through perceived usefulness.

Hosein (2009) studied the influence of external variables; consumer knowledge of Internet Banking, the quality of the incentives and security and privacy on the Perceived Usefulness and the perceived ease of use of the Internet Banking system. The data gathered from the non users of internet banking analyzed by using SEM indicated that consumer knowledge of Internet Banking has an effect on the perceived

ease of use and that the perceived ease of use is an important factor in adopting the Internet Banking services. The study also found that customer's difficulty in using the internet banking services leads to a decrease in the adoption of internet banking.

Shih and Fang (2004) studied customer's intentions to use internet banking in Taiwan by applying the decomposed Theory of Planned Behaviour. The results showed that Attitude and PBC are significantly related to behavioral intention, however subjective norm is not significantly related to behavioral intention and that intention has a significant influence on actual use.

Using a research framework based on the theory of planned behavior and the diffusion of innovations theory Tan & Teo (2000) identified the attitudinal, social and perceived behavioral control factors that influence the adoption of Internet banking. The results revealed that the intention to adopt Internet banking services can be predicted by attitudinal and perceived behavioral control factors, but not by subjective norms.

Chaipoopirutana, Combs, Chatchawanwan, & Vij (2009) utilized the Diffusion of Innovation theory to study Indian and Thai banking customers. The findings of the study revealed that compatibility, relative advantage and trialability have positive relationship with customers' intention to adopt Internet banking and that complexity is the only factor which has negative relationship with intention to adopt the Internet banking.

Mavetera, Moroke, & Chibonda, (2014) integrated the TAM and IDT (Innovation Diffusion Theory) constructs to build the Internet Banking Adoption model (IBA) for analysing the adoption of internet banking. Two constructs from TAM; Perceived

Usefulness and Perceived ease of use and three construct from IDT; awareness, compatibility and trust were used. The empirical results show that, Perceived Usefulness, Perceived ease of use and trust have a significant influence on IBA and that the influence of compatibility and awareness was not found to be significant enough.

The purpose of the study by Ozdemir and Paul (2008) was to examine the factors affecting the process of Internet Banking adoption and to characterise the different internet banking adopter and non-adopter segments in Turkey. This paper applied an extended Technology Acceptance Model with Diffusion of Innovation Theory and Theory of Perceived Risk. The findings showed that Internet Banking adopters and non-adopters have different perceptual, experience related, socioeconomic and situational characteristics. It was further revealed that the perceptual factors related to Internet Banking use were also influential in Internet Banking adoption process. Adopters perceived Internet Banking as more user-friendly, more useful and less risky compared to non-adopters. Adopters had more experience with the Internet as compared to the non adopters. The lack of face-to-face communication decreased the perceived user-friendliness of Internet Banking for non-adopters. Within the risk factors, security risk was found to be the most significant barrier for Internet Banking adoption. Internet banking non-adopters had less knowledge about the security measures compared to Internet Banking adopters. Perceived risk was the most significant factor for both the groups. Perceived user-friendliness of Internet Banking and usefulness aspects such as time savings, cost savings, fast service, instant access, opportunity, convenience and cost savings were observed as the most important facilitators for Internet Banking adoption.

This study by Chiou & Shen (2012) utilises the constructs derived from the Technology Acceptance Model (TAM), transaction cost analysis (TCA) and relationship marketing literature to develop a framework of the antecedents to using Internet banking. The study found that Perceived usefulness, perceived ease of use, perceived risk and specific asset investment in physical bank were found to have a significant impact on customers' attitude towards the use of internet banking and that customers' attitude and specific asset investment in physical bank have an influence on the intention to use the Internet banking services. The results also showed that the perceived risk of Internet banking is an important barrier to the use of the Internet banking services.

The study by AbuShanab, Pearson, & Setterstrom (2010) extended the Unified Theory of Acceptance and Use of Technology (UTAUT) by adding perceived facilitating conditions and personality dimensions of Self-efficacy, Anxiety, Perceived Trust, Perceived Risk, Personal Innovativeness and the Locus of Control, felt to be important determinants of technology adoption in studying customer's behavioural intention to use internet banking. The extended model supported the influence of the constructs performance expectancy, Effort expectancy, social influence and the personality dimensions of self-efficacy, perceived trust and locus of control on the individual's intentions to use Internet banking. However the influence of perceived facilitating conditions was not significant in predicting behavioural intentions. Also the personality dimensions of perceived risk, anxiety and personal innovativeness did not have a significant influence in predicting behavioural intentions.

### **2.3 FACTORS INFLUENCING ADOPTION AND USE OF ELECTRONIC BANKING**

The studies on internet banking adoption and use which have applied the Technology Adoption Theories have been discussed in the earlier section and the other studies on the factors influencing the adoption and use of internet banking have been discussed in this section.

Internet banking is expanding rapidly in the banking industry (Omar, Sultan, Zaman, & Bibi, 2011). Extant literature on internet banking adoption and use normally focuses on the customers' perception of benefits and risks of internet banking usage and also other factors influencing their intention of adoption and use of the service. For the bank customers, Internet banking provides convenient access to a variety of banking services without the limitations of time and place experienced with the traditional mode of banking (Jih, Wong, & Chang, 2005). A study on Customer's Perspectives and the Risk Issues on E-Banking in Turkey by Mermod (2011) revealed that most of the Turkish online customers preferred to do their operations online since they believe that internet banking is safe, cheaper and saves extra time.

Bank customers prefer to use internet banking because of the benefits it provides as compared to branch banking. Ease in banking transaction activity, safety and security, low service charges, convenience and updated information available online are felt to be the prime reasons why the customer use the internet banking channel (Geetika, Nandan, & Upadhyay, 2008). A Study by Kuchara (2012) on Customers' perception towards Internet Banking at Ahmedabad city in India, indicates that convenience, security, easy to maintain banking transaction, curiosity and low service charges are major factors responsible for internet banking adoption.

Although internet banking provides various advantages to the bank customers, it is also accompanied by risks and limitations. The results of the study by Munusamy, Annamalah, & Chelliah (2012) indicated that there are significant barriers in the adoption of Internet banking in terms of difficulty to operate, hassle to use, unreliable, risky and high connection fees and that when the level of perceived barriers increases, the adoption of Internet banking among retail banking customers decreases.

Ramayah et al. (2003) felt that security, availability of infrastructure and complexity of Technology hinder the migration to Internet banking. The risk felt by the bank customers that their personal information might fall into wrong hands or that they may lose their money during the transaction process disturbs both the current and potential customers who intended to use the internet banking service (Jalal, Marzooq & Nabi, 2011).

The influence of the factors determining the adoption and use of internet banking differs between the users and the non users of internet banking. Demirdogen (2010) found that the extent of risks perceptions differs among users and non users of online banking and that the risk perceptions of financial risk, psychological risk and safety risks was significantly higher among the non users of internet banking than those using Internet banking. The researcher also stated that the non-users of IB worry about their bank account being accessed by someone else, losing money during fund transfers and about their ability to cancel transactions when errors are made while using internet banking. This study is supported by Geetika, Nandan, & Upadhyay (2008) who found significant differences in the perception towards security features between users and non-users of Internet banking and stated that there is a

possibility of increased acceptance of Internet banking if the confidence in the security features used by banks is increased.

Lichtenstein and Williamson (2006) tried to understand the factors affecting the consumer decision of adoption or non adoption of internet banking in the Australian context. The survey study revealed that the factors; accessibility to the computer and internet, internet self-efficacy, system usability, the availability of sufficient support and in depth knowledge from the bank and its employees contribute significantly to consumer adoption of internet banking. The study also identified the following key reasons for non-users not having adopted internet banking; lack of awareness of the relative advantages of internet banking, security and privacy issues and distrust of the internet banking channel, low levels of accessibility to the internet, lack of proficiency in the technology, perceptions that their current banking method was convenient and habituated preference for face-to-face or telephone banking services.

Mavri and Ioannou (2006) identified the factors determining a customer's decision to use or not to use online banking services. The results of the study showed that the most significant factors are the individual's age, the difficulties of using the Internet, the fear of changes in the banking sector due to technological development and the lack of information concerning products and services provided to customers through electronic delivery channels and that the speed of transactions and the cost of using the Internet have little impact on the customer's decision to use or not to use online banking. The study also pointed out that Bank customers, who believe that 'traditional' banking system operates well, still prefer to use traditional bank branches for their transactions.

Mirza, Beheshti, Wallstrom, & Mirza (2009) conducted a study to develop an understanding of the attitude and adoption of internet banking service by Iranian customers. The results revealed significant differences in the attitudes, awareness of benefits and lack of technical skills between the users and the non users of internet banking. The security concerns, lack of technological knowledge and awareness were found to be obstacles to the adoption of internet banking services. The factors convenience, no need of carrying cash, usefulness and satisfaction were more important factors in the adoption process of internet banking services.

The research study by Domeher, Frimpong, & Appiah (2014) intended to identify and analyse the key factors which influence the adoption of innovative banking products. It emerged from this study that the ease of using the innovation, the compatibility of the innovation with the needs of the customers, perceived usefulness, the amount of information provided about the innovation and the education level of the customers have a significant positive impact whereas perceived risk was found to have a negative influence on the adoption of e-banking innovations in the Ghanaian banking industry.

The study on the adoption of Electronic Banking by Paul (2013) found that the factors education, knowledge in computer, willingness of the people, people's convenience and awareness are responsible for the successful operation of E-banking and that a large no of people having no computer knowledge prefer the traditional banking channel but along with some moderate changes and quick service delivery.

Singh (2013) conducted an exploratory study on internet banking usage in semi - urban areas in India and identified nine factors i.e. cost, reliability, processing barriers, security issues, technological incontinence, lack of infrastructure, conventional approach, risk and resistance, which were the barriers in the usage of Internet Banking services in the semi-urban areas. Saibaba and Murthy (2013) examined the factors influencing the bank customer's intention to use internet banking services in India. The seven factors identified by the study that were found to directly or indirectly influence the user's behavioural intention to use Internet banking services are: performance expectancy, effort expectancy, social influence, attitude, trust, awareness and self-efficacy.

Awareness of internet banking, easy and convenient access to the service, required level of security, decrease in transaction costs and timely response to the queries of the customers, would clearly indicate better adoption of internet banking in future among the non users of the internet banking services (George & Jacob, 2014).

A study on the factors influencing the consumer's adoption of internet banking in India by Safeena, Date, & Kammani (2011) emphasized that although Internet banking is easy and fast and provides flexibility in performing financial transactions, individuals are still reluctant to adopt the system because of the Security and privacy risk associated with it. Similarly the study by Omar et al. (2011) showed that although the bank customers mostly prefer internet banking services over branch banking since they find internet banking convenient, fast, safe, reliable and secured, cost effective, user-friendly and free of error, factors such as security problems, lack of trust and knowledge affect the adoption decision of customers of the internet banking services.

Sharma and Sharma (2011) felt that while online banking is available for twenty four hours, seven days a week, regardless of the bank's working hours, the security of internet transactions is a cause of concern and that customers give due importance to reliability, accessibility, user- friendliness, privacy and efficiency for the use of internet banking. Safeena (2010) stated that Perceived usefulness, ease of use and consumer awareness has positive effect on the intention to adopt internet banking while perceived risk has negative effect on it. While e-banking provides many benefits to customers and banks, it also aggravates traditional banking risks (Chavan, 2013).

The findings of the study by Awwad and Ghadi (2010) indicate that customers take their Mobile Banking adoption decision based on its complexity, compatibility, trailability and perceived risk. Similarly perceived relative advantage, perceived ease of use, perceived compatibility, perceived trialability and trust are salient determinants of customers' adoption of Internet banking (Al-Ajam & Nor, 2013).

The study regarding the impacts of perceived risks on Internet banking adoption by Jih, Wong, & Chang (2005) using primary data collected in Taiwan found that the willingness to adopt internet banking was directly affected by perceived risks, the perception of risk-reduction measures and their personal involvement in internet banking, and is indirectly affected by their familiarity with the Internet. They also found that perceived risk was affected by the familiarity with internet technology and that, as the users learn more about risk-reduction measures, they are more likely to continue using internet banking.

The study by I-Baghdadi, Rizvi, & Rizvi (2009) found that internet banking is a convenient and an easy to use banking channel which saves the time for the customers and reduces the cost for the banks. They also found that the perceived risk of security and privacy and lack of perceived need have a negative influence on the customer's use of internet banking.

Geetha & Malarvizhi (2012) investigated the factors affecting the acceptance of e-banking services among the customers in the Indian context. The findings depicted that the factors security and privacy and awareness level increased the acceptance of e-banking services among Indian customers and that customers would be willing to adopt e-banking if the banks provide the customers with the necessary guidance and ensure safety of their accounts.

Jalil, Talukder, & Rahman (2014) developed a model for the customer's intention towards online banking transactions and tested the model using a structural equations modelling technique. The results showed that security, trust, and the website had a significant relationship with the consumer's intention to use online banking in a Malaysian context.

Ndumba and Muturi (2014) studied the influence of perceived risk, perceived convenience, trust and relative advantage on the adoption of Mobile Banking in Kenya. The results revealed that Customers' perceived risk was found to negatively affect adoption of the Mobile Banking service. The risks found to have the greatest influence were fear of sending money to wrong account or phone number and loss of personal or account information. On the other hand, perceived convenience was found to positively affect the adoption of Mobile banking by being easy to use and

being useful in various ways. Customer's Trust in the reliability of Mobile Banking was found to positively affect adoption of these services. Relative advantages presented by Mobile Banking service compared to other traditional banking services such as accessibility, saving time, privacy, less cost and comfort have been found to positively affect adoption of Mobile Banking service.

Safeena, Hundewale, & Kamani (2011) stated that when online banking is perceived as useful and easy to use customer's intention to adopt mobile banking would be greater. Also that social influence has positive effect on the use of mobile technology as the individuals think that using the advanced technology will improve his image and status in the society and also that it improves his performance.

In a study on the Drivers of customer intention to use online banking, Wang & Pho (2009) found that the intention to use the online banking service is based on brand trust-worthiness and that trust-worthiness depends on complimentary relationship quality. The study pointed out that a website with high complimentary relationship is felt to consider the best interests of customers and is felt to offer an easy means for customers to complete their banking business and that brand credibility of a bank increases when the complementary relationship of an online banking website is high. website quality was also stated to have a positive effect on brand credibility and brand credibility in turn could positively affect intention and satisfaction of the customer.

El- Kasheir, Ashour, & Yacout (2009) attempted to describe and analyze the factors that can affect customers' intention to continue using internet banking services.

The study pointed out that Perceived ease of use was the only significant predictor of intention to continue usage of internet banking services.

The content analysis of the past studies reviewed by Kaur and Kaur (2011) regarding the adoption of the innovation found that in the case of internet banking, self efficacy, Perceived usefulness and Risk are the main factors having considerable effect on the adoption of the service.

Jamaluddin (2013) stated that Electronic banking is becoming immensely popular in India and that the declining internet charges and mobile charges, falling prices of personal computers and mobile phones and broadband accessibility, encourage the boom in E-banking in India. However, it was felt that the negative issues like identity theft and phishing attacks discourage customers from using electronic channels for conducting banking transactions.

Munusamy and De Run (2012) investigated the impact of demographic factors on Internet banking adoption behaviour among retail consumers and found that only age and income had an influence on the adoption of Internet banking whereas gender, educational level, occupation and race did not have an influence on the adoption of Internet banking among retail consumers. The study also stated that younger consumers in the age group below 25 years are more likely to adopt internet banking and that the income of the respondents has a negative relationship with the adoption of Internet banking. Similarly Nasri (2011) studied the Influence of demographic factors; age, gender, occupation and instruction (education) on the Adoption of Internet Banking in Tunisia and found that the adoption of Internet Banking in Tunisia is significantly influenced by occupation and instruction (education).

## **2.4 DETERMINANTS OF ATTITUDE TOWARDS ELECTRONIC BANKING**

In the context of Consumer Behaviour studies, different factors have been considered in studying their influence on the attitude of the customers. Some of the studies on the determinants of attitude towards Electronic banking services have been discussed in this section. Many studies were found to examine the influence of perceived usefulness and perceived ease of use on attitude with the inclusion of additional factors.

The research by Tan, Potamites, & Wens-Chi (2012) based on the technology acceptance model examined the factors influencing the online banking adoption behavior of bank customers in Pescadores and found that perceived usefulness and perceived ease of use have a positive influence on the bank customer's attitude towards online banking. Also the study by Akinyemi, Asani, & Adigun (2013) applied the TAM to investigate the Users' Acceptance and Satisfaction of E-Banking and found that perceived usefulness and perceived ease of use have a significant influence on the attitude of the users. Similarly the study by Rouibah, Ramayah, & May (2011) showed that attitude towards the adoption of e-banking was influenced by perceived usefulness and perceived ease of use, and that perceived usefulness has a higher influence on attitude.

In another study, the attitude towards internet banking was predicted by perceived usefulness, perceived ease of use, social risk, time risk, performance risk, financial risk and security risk (Sanayei, & Bahmani, 2012). Similarly, Jahangir and Begum (2008) found that Perceived usefulness, perceived ease of use, security and privacy are very important antecedents on customer attitude in the context of electronic banking. Al-Smadi (2012) also studied the influence of perceived usefulness, perceived

ease of use and perceived risk on attitude towards electronic banking and noted that perceived risk has a stronger impact on attitude towards electronic banking than perceived usefulness and perceived ease of use.

Lee (2008) examined the influence of Perceived Usefulness, Perceived Ease of Use, 5 types of perceived risk; financial risk, time risk, performance risk, security risk and social risk as well as perceived benefits on the attitude towards the adoption of internet banking. The results revealed that all the factors had an influence on the attitude towards internet banking except social risk.

The study by Khanifar et al. (2012) which considered the TAM and TPB model to identify the factors affecting customers' intention to use e-banking found that attitude was influenced by perceived ease of use and subjective norm and that perceived ease of use has an influence on perceived usefulness. Another study by Takele & Sira (2013) found that the attitude towards e-banking service is jointly predicted by perceived behavioral control, perceived usefulness, perceived ease of use and perceived risk and that the construct perceived ease of use had the highest influence on attitude.

Maduku (2013) and Suh & Han (2002) extended the Technology Acceptance Model (TAM) for studying the attitude towards the adoption of Internet banking services by adding the construct Trust. The results of the study suggest that perceived usefulness, perceived ease of use and trusts have a significant positive relationships with attitude. Another study by AL-Majali (2011) found that perceived risk, trust and awareness of Internet banking service adoption are significant factors that influence customer's attitude towards internet banking adoption.

Olatokun and Igbinedion (2009) found that the constructs relative advantage, complexity, compatibility and trialability have a significant impact on the attitude towards the adoption of ATM, which in turn had a significant impact on the Intention to use it. Similarly the study by Tan and Teo (2000) observed that relative advantage, compatibility with the respondent's values, experience and banking needs, trialability and risk have a significant influence on attitude towards adoption of Internet banking.

The study by Shih and Fang (2004) showed that relative advantage and complexity are significantly related to attitude and that complexity has a negative impact on attitude towards internet banking. Another study revealed that perceived ease of use and perceived usefulness significantly and positively influence attitude whereas compatibility has no significant influence on attitude towards Internet Banking Services (Al-Majali & Mat, 2010).

In a study by Prateek and Mehta (2012) to understand the factors that lead to the formation of consumer's attitude towards using self-service technology in banks, it was revealed that consumer's attitude is determined by their perception of how convenient it is to use, intrinsic motivation and perceived ease of performing the behaviour.

Shih and Fang (2006) extended the Theory of Reasoned Action to probe the influence of four web quality attributes namely; information quality, user-friendliness, transaction speed and security on the attitudes towards internet banking in order to improve the understanding of consumer attitude along with the original factor of subjective norm to study its influence on adoption intention of Internet Banking. The

study found that the network quality attributes of information quality, transaction speed and security were found to have a significant influence on attitude.

### **2.5 Role of Moderator Variables in related studies**

“A moderator variable has been defined as one which systematically modifies either the form and/or strength of the relationship between a predictor and a criterion variable. As such the moderator variable concept holds important implications for understanding and predicting buyer behavior” (Sharma, Durand & Gur-Arie, 1981, p. 291).

Moderators are important due to their ability to enhance the understanding of the relationship between relevant independent variables and dependent variables (Walsh, Evanschitzky, & Wunderlich, 2008). The role of moderator variables examined by some researchers in similar studies has been discussed as follows:

Yoon and Occena (2014) conducted a study on the impact of customers' perceptions on the use of internet banking with a smart phone and also studied the moderator effects. The study identified two dimensions: security and usability, as determinants of Internet banking use with a smart phone. The results of the study indicated that security issues and perceived usefulness and perceived ease of use as dimensions of usability had a significant influence on the internet banking use with a smart phone. The study also showed that perceived usefulness and perceived ease of use moderated the relationship between the user's perception toward security and the internet banking use with a smart phone and that the user's perception towards security moderated the relation between perceived usefulness and perceived ease of use on the use of internet banking with a smart phone.

Ndubisi (2007) employed the extended TAM as the theoretical framework for assessing the influences of perceived usefulness, perceived ease of use, perceived reliability and computer self-efficacy on behavioral intention to adopt internet banking in Malaysia. The study scrutinized the moderation effect of computer self-efficacy on the relationship between Customers' perceptions of perceived usefulness, perceived ease of use and perceived reliability on their intention to adopt Internet banking. The results indicated that Computer self-efficacy significantly moderated the relationship of perceived usefulness and perceived ease of use with intention.

Lu and Rastrick (2014) examined the influence of gender as a moderator on the relationship between website design and the adoption intention of mobile commerce. The results showed that navigation design most significantly impacts consumers' perceived ease of use and that perceived ease of use of a mobile website is more important to females when considering their intention to use mobile commerce.

Another study by AbuShanab, Pearson, & Setterstrom (2010) extended the UTAUT and studied the influence of gender and age as moderators on behavioural intentions to use internet banking. The study revealed that gender moderated the relationships among performance expectancy, Effort expectancy, social influence and Behavioural Intentions and that age moderated the relationships among performance expectancy, Effort expectancy and Behavioural Intentions, however, the relationship between social influence and Behavioural Intentions to use internet banking was not moderated by age.

Based on the Unified Theory of Acceptance and Use of Technology, the study by Tsai, Zhu, & Jang (2013) examined the factors influencing the adoption of the

financial services of Internet Banking. The results showed that gender, age, and experience possessed moderating effects on the relationship between Performance Expectancy, Effort Expectancy, Social Influence and Perceived Risk as antecedents on the intention to use internet banking.

The study by Venkatesh, Thong, & Xu (2012) also extended the unified theory of Acceptance and Use of Technology to study the acceptance and use of technology. The study incorporated three constructs into UTAUT: hedonic motivation, price value and habit and hypothesized Individual differences namely; age, gender and experience to moderate the effects of these constructs on behavioral intention to use technology. This study showed that in the context of consumers' use of technology, the impact of hedonic motivation on behavioral intention is moderated by age, gender and experience. Secondly, the effect of price value on behavioral intention is moderated by age and gender. Finally, habit has both direct and mediated effects on technology use, and these effects are moderated by individual differences.

On the contrary, the results of another study by Raeisi and Lingjie (2016) showed that the moderator variables; age, gender and experience did not have a positive effect on the relationship between attitude and intention to use mobile commerce by the Chinese people and also that the moderator variables; age, gender, experience and voluntariness did not have a positive influence on the relationship between social influence and intention.

The role of moderator variable in the Theory of Planned Behaviour was studied by Shee and Wu (2008) who investigated whether employees competence set expansion in the Information service industry is a planned behaviour, moderated by individual style of action control. Employing the TPB model as the theoretical foundation the

results of this study showed that Attitude tendency, subjective norms and computer/information technology self-efficacy positively affected employees' intentions of expanding the Competence Set. It was also found that the action control style moderated the effects of Attitude tendency, subjective norms and computer/information technology self-efficacy on behavioral intention.

## **2.6 LITERATURE RELATING TO FELT WANT**

The two terms “need” and “want” often used interchangeably hold two different meanings. A need is a state of felt deprivation while a want is a desire for a specific satisfier. Wants are product-specific needs (Schiffman & Kanuk, 2004). “Needs are the basic human requirements. These needs become wants when they are directed to specific objects that might satisfy the needs” (Kotler, Keller, Koshy & Jha, 2012, p. 14). A want is a specific manifestation of a need that is determined by personal and cultural factors (Solomon, 2015). A want is a wish or a desire for goods or services which can be satisfied in different ways (<https://simple.wikipedia.org/wiki/Want>).

Bradshaw (1972) suggested four different types of need relating to community problems which are Normative need, Felt need, Expressed need and Comparative need. He has defined Felt need as what people say they want or feel they need and are limited by individual perceptions and knowledge of services. Hawkins, Mothersbaugh, & Mookerjee (2011) explained that, Fulfillment of Felt Need is one of the factors affecting the spread of innovation and that the diffusion of innovation is faster when the need that the innovation satisfies is more manifest or obvious.

In a study on Consumer online shopping attitudes and behaviour Li and Zhang (2002) stated that at times potential consumers are attracted by information on the internet

about products or services associated with the felt need. They then evaluate alternatives and choose the one that best fits their criteria for meeting the felt need.

The qualitative study by Sarel and Marmorstein (2003) revealed significant differences in attitudes, opinions and behaviour between 3 categories of bank customers namely; Active users, Light users and Non-users. The product characteristics; Perceived relative advantage (or felt need), complexity, compatibility, communicability, Perceived risk and Divisibility were studied with reference to the types of customers. Most light users and non-users perceived very little relative advantage (or felt need) in online banking. They did not see the new service as a major improvement in solving an urgent problem or in improving their quality of life. The processes of adopting online banking services in general and bill payment in particular were viewed by many as difficult, tedious and complex. These perceptions of complexity were especially evident among those who have not attempted to open an account.

The study by Basghosha et al. (2012) tried to explore the effect of consumers' perception of risk and uncertainty on the rate of using internet banking by examining 13 dimensions of customers' perceived risk and uncertainty. One of the dimensions was Needs uncertainty which is a Customer's mental perplexity while choosing a special channel which is a result of the consumer's psychological dependence and trust in the traditional method, the lack understanding of a new technology and their perception whether the new technology will provide for their need or not, and this provides uncertainty situation for fulfilling a need perception. The results revealed that there is no strong relation between the perceived needs uncertainty dimension and the rate of using internet banking thus signifying that consumers

accept the primary channel of modern servicing and that they have felt the need of using internet banking.

Tripathi and Singh (2012) stated that the motives involved in buying behaviour may be expressed or unexpressed and are based upon deep seated needs or more openly felt wants and that when a buyer purchases some product or service, he psychologically satisfies both needs and wants.

Drawing upon the Theory of Planned Behaviour, the study by Fen and Sabaruddin (2008) proposed and tested an extended model with the addition of perceived need in predicting exercise participation. The model and hypotheses testing using SEM revealed that: attitude components, perceived behavioural control and perceived need predicted exercise intention. Subjective norm did not show to have an influence on exercise intention.

## **2.7 RESEARCH GAP**

The literature review conducted, highlights a plethora of studies being carried out on the factors influencing the attitude and the intentions to the adoption and use of internet banking. It is however observed that limited research shows how the moderator variables influence the relationship between intention and the factors influencing intention in the context of e-banking.

The qualitative study pointed to the possibility of considering Felt want as moderating variable because it was found that people had positive attitude towards internet banking, they had the knowledge and the resources required to use internet banking, but they did not have the intention to use the service because they did not feel the

want for internet banking. Hence literature was checked to find out whether Felt want as a moderator has been studied. It was found that the moderating role of factors such as computer self-efficacy, gender, age, experience and voluntariness have been examined in similar studies, however Felt want as a moderator has not been studied. This research thus intends to address this Gap. The inclusion of moderator variable in this study as suggested by Baron & Keny (1986) was felt possible, as inconsistent relations were expected between the dependent variable and the independent variables across different groups of customers. Therefore this study intends to examine the moderating role of Felt want in the Theory of Planned Behaviour.

The unstructured interviews identified that the factors; the services used/ felt required, satisfaction with branch banking, nature and number of bank transactions, use of internet banking by the family members and the use of substitute products for banking, had an influence on the Felt want for internet banking. When these factors were checked with the existing literature, evidence for previous discussion of these factors on Felt Want was not found. Thus this study intends to understand the influence of these 5 factors on the Felt want for internet banking.

Also it was observed that although prior research work focussed on the factors that influence the adoption and use of internet banking, there is limited study conducted on the extensive comparison between the factors influencing the behaviour of the users and non users of internet banking. This study therefore also intends to make a comparative study of the factors influencing the behaviour of the users and the non users of internet banking in a comprehensive manner.

## CHAPTER 3

### RESEARCH METHODOLOGY

This chapter provides an outline of the research methodology adopted in the study and presents the details of the research design adopted, unit of analysis and sampling, data collection tools and procedure and the data analysis procedure.

#### 3.1 RESEARCH DESIGN AND APPROACH

Research Design which is concerned with the collection, measurement and the analysis of data is aimed at fulfilling the objectives and answering questions (Cooper, Schindler, & Sharma, 2013). This study aims at understanding the factors influencing bank customer's intentions regarding the use of internet banking services and to make a comparative study of the factors influencing intentions for the users and the non users of internet banking. In order to have a deeper understanding of the customer behavior towards the use of internet banking services and to know the factors influencing their intentions of adoption and use, a semi-structured in-depth interview was initially conducted with 20 bank customers using internet banking and 20 bank customers not using internet banking.

These in-depth interviews provided deeper insights into the benefits and risks perceived by the bank customers regarding the use of the internet banking services. It also highlighted the various services used by the bank customers and the precautionary measures taken by the users regarding the safe use of internet banking. The study also brought out the intentions of the users to continue using internet banking in future and the intentions of the non users to start using internet banking in

future. The exploratory study revealed the various factors influencing their intentions to use internet banking and also brought to light the differences in the approach towards internet banking between the users and non users.

A quantitative research design was later adopted to test the proposed relationship between the factors influencing the adoption and use of internet banking on behavioural intentions. For this purpose the questionnaires were administered and the data collected from the bank customers were analysed using SPSS and SEM technique with AMOS software.

### **3.2 UNIT OF ANALYSIS AND SAMPLING**

This study made attempts to understand the influence of various factors on the behavioural intentions of adoption and use of internet banking for the users and the non users. The unit of analysis for the study is the bank customer having adequate knowledge of internet banking. Since the questionnaire required the respondents to mark on a 5 point likert scale the various items of benefits and risks perceived by them and also for the other constructs such as attitude and Felt Want, care was taken to see that the respondents not using internet banking were aware of the features of the internet banking service.

With banks having introduced Electronic delivery channels, the customers are exposed to a wide array of banking channels. However it was felt that the customers use the various channels depending on their perceptions of benefits and risks regarding the same. In order to understand the factors influencing the usage and non usage of internet banking, it was necessary to survey the bank customers who were

aware of the internet banking service. Convenience sampling is used in many qualitative studies (Marshall, 1996). For this research also, the 20 respondents not using internet banking and the 20 respondents using internet banking interviewed for the qualitative study were drawn from the bank customers being studied on a convenience sampling basis. The respondents included both males and females, married and single, having permanent job as well as temporary job and belonging to different age groups.

For the quantitative study, a total of 850 completed questionnaires were received from 450 bank customers using internet banking and 400 bank customers not using internet banking but aware of the same. The study adopted a method of convenience sampling with care taken to include sufficient representation from different groups of customers like males as well as females, customers of different age groups and gender, students, senior citizens, home makers and bank customers with varying levels of educational qualifications. Convenience sampling is used in many quantitative studies as well (Etikan, Musa, & Alkassim, 2016) and involves the selection of the most accessible participants believed to be the representatives of the population.

The proposed guidelines regarding minimum sample size for SEM vary with the analysis procedure and the model characteristics (Hair, Black, Babin, Anderson, & Tatham (2017). SEM applications require large samples and typically use 200 to 400 cases to fit the models (Bacon, 1997). Hair, Black, Babin, Anderson, & Tatham (2017) suggested a sample size in the range of 100 to 400, subject to other considerations and also stated that simpler models can be tested with smaller samples however complex models require a larger sample size.

Bagozzi & Yi (2012) stated that some disagreement exists with respect to the recommended sample sizes for SEMs and suggested that the sample size for SEM should be preferably above 200 (Iacobucci, 2010). Lei & Wu (2007) recommended that SEM being a large sample technique, the minimum sample size should not be less than 200 and it should preferably not be less than 400.

While literature on the use of SEM technique lays down that the samples should be large, making recommendations as to what sample size is required has been found to be difficult. This study had a sample size of 400 non users of internet banking and 450 users of internet banking which is within the acceptable range.

### **3.3 DATA COLLECTION TOOLS**

Initially semi-structured in depth interviews with 40 bank customers were conducted in order to gain adequate knowledge on the approach of the bank customers towards internet banking and to provide a clear direction to the research. The bank customers using internet banking were asked to relate their experiences in internet banking usage and also their perceptions of benefits and risk in internet banking usage. They were also asked about the internet banking services used by them and their intentions of internet banking usage in future. The bank customers not using internet banking were also asked to relate their perceptions of benefits and risks felt in using internet banking, their reasons for not adopting internet banking and their intentions of using internet banking in future.

The responses of the customers were summarized and conclusions were drawn. The findings of the qualitative study along with literature review enabled the formulation

of a newly developed set of scale items for the measurement instrument. While for some of the constructs new scales were developed, for the remaining constructs the existing scales were modified to suit the purpose of the study. The new scale was developed for the constructs; Felt want, nature and number of bank transactions, satisfaction with branch banking, use of online banking by the family members and use of substitute products for banking. For the constructs; intention to use internet banking, perceived benefits, perceived risks and online banking services used or felt required, the existing scales were modified and new items were added. The scale items for attitude, subjective norm, perceived behavioural control, self efficacy and facilitating conditions are taken from literature.

The items in the scale were designed to be measured on a 5 point Likert Scale to facilitate accurate quantification of the response options for measuring the scale items of the constructs. The items to the constructs; Online banking Services used for the users and Online banking Services felt to be required for the non users, the use of substitute products for banking and use of online banking by other family members were designed as: *1- Never, 2- Rarely, 3- Sometimes, 4- Mostly and 5- Always* on a 5 point Likert Scale. For the rest of the constructs the response options for measuring the scale items were designed as: *1- Strongly Disagree, 2- Disagree, 3- Neutral (neither agree nor disagree or Can't Say), 4- Agree and 5- Strongly Agree.*

A two-part questionnaire was designed for the study. The first part includes items used to collect basic information about respondents' demographics including gender, age, marital status, highest qualifications and occupation. The second part includes five-point Likert scales, ranging from (1) "Never" to (5) "Always" and (1) "Strongly

disagree” to (5) “Strongly agree”, used to operationalise the following constructs included in the investigated research model; intention to use, perceived benefits, perceived risk, attitude, subjective norm, perceived behavioral control, self efficacy, facilitating conditions, satisfaction with branch banking, nature and number of bank transactions, the services used/felt required, use of substitute products for banking and use of internet banking by the family members. Some items in the questionnaire were adopted from relevant prior research, with necessary validation and changes in the wording tailored to suit internet banking and the remaining items were developed by the researcher.

Separate questionnaires were administered for the users and the non users. The items of both the questionnaires were the same, except for the items of intention to use internet banking and the presentation of the items of services used for the users and the services felt required for the non users. The measurement instrument for the Users of internet banking is attached in Appendix E and for the Non Users of internet banking is attached in Appendix F.

### **3.4 DATA COLLECTION PROCEDURE**

#### **3.4.1 Qualitative Study**

Qualitative research methods help to understand the context within which decisions and actions take place, hence, when the researchers want to understand people’s motivations, their actions, their reasons and the context of their actions and beliefs in an in depth way, then qualitative research is the best (Myers, 2013).

The overall aim of the research study was to understand the behaviour of bank customers towards internet banking. This understanding was initially gained through literature review in the area of study. However in order to get the first hand knowledge of the bank customer's intentions of adoption and use of internet banking and to have a better understanding of the factors influencing their adoption and usage of internet banking, a qualitative study was undertaken. The qualitative study was conducted through the semi-structured in-depth interviews with 40 bank customers of which 20 respondents were the users of internet banking and 20 respondents were non users of internet banking.

The objectives of the in-depth interviews were:

- 1) To find out the factors influencing the adoption and usage of internet banking among the customers interviewed.
- 2) To explore the new dimensions of the factors influencing the adoption and use of internet banking.
- 3) To understand the bank customer's perceptions of benefits and risks towards internet banking.
- 4) To understand the differences between the users and the non users with respect to their perceptions of benefits and risks towards internet banking and the factors influencing their adoption and use of internet banking.
- 5) To know the intentions of the respondents regarding their use of internet banking in future and the factors influencing the same.
- 6) To understand the extent of usage of internet banking among the users of internet banking.

In order to meet these objectives the qualitative study was conducted through semi-structured in-depth interviews with 40 bank customers who were aware of internet banking. The respondents who were willing to spare their time for the interview and to share their experiences and feelings towards internet banking were approached. Convenience sampling was used and the respondents were interviewed at the place and time suitable to them. The respondents were interviewed for about 20 to 30 minutes in an undisturbed environment. The questions were posed to them depending upon whether they were using internet banking or not using internet banking, their level of understanding of the internet banking system and their extent of usage of internet banking. They were allowed to freely express their fears of internet banking usage and how beneficial they feel it is to them. For the purpose of identifying varied factors influencing the adoption and non adoption of internet banking, different categories of bank customers were interviewed.

The users of internet banking were asked questions relating to their perceptions of benefits and risks in using internet banking and also the precautionary measures taken by them. They were also asked about their usage of internet banking in terms of the period of use, number of banks at which they use internet banking, their frequency of use and the different types of internet banking services used by them. The users of internet banking were asked if they faced any problem in using internet banking and if so how they coped with the problems.

The non users of internet banking were asked why they have not been using internet banking and their perceptions of benefits and risks in using internet banking. They were also asked if they would like to use internet banking in future, the reasons for the same and of which bank and for what services they would want to use internet

banking. The broad questions asked for the users and the non users during the semi-structured interviews are attached in Appendix A.

The respondents gave relevant inputs on the benefits and risks experienced or perceived by them in the internet banking usage. The data was also collected regarding their attitude towards the internet banking system, the factors influencing their usage or non adoption of internet banking and their intentions of future use of internet banking. Most of the respondents were eager to express their perceptions of benefits and risks in internet banking usage.

The narratives and personal experiences of the bank customers were taken note of and the findings of the study were summarized. The responses of the interviewees were analysed separately for the users and the non users and conclusions were drawn. The narrations of the respondents and the summary of their responses facilitated in; the generation of the initial pool of scale items, the identification of constructs, the development of the measurement instrument and to propose the Hypotheses. The broad idea gained through the in depth interviews were used for the conduct of further research and analysis.

### **3.4.2 Quantitative Study**

Quantitative research involves data collection that is typically numeric and the use of mathematical models as the methodology of the data analysis (Williams, 2007). The data for the quantitative study were collected through questionnaires prepared separately for the users and the non users of internet banking. A questionnaire, using a five-point likert scale was employed to collect data for the constructs of the research

model. Items from previous studies were modified for adaptation to the Internet banking context. The respondents were bank customers aware of internet banking and of the age group of 20 years and above.

The questionnaires were administered personally to the respondents at the banks, at their work places and at their homes. Prior permission was taken from the bank managers, heads of various organizations and from the principals of educational institutions. Prior permission was also taken from the respondents to visit their homes at their convenient time. The respondents aware of internet banking and willing to fill in the data were given the questionnaire. Each respondent required around 12-18 minutes to fill in the questionnaire depending upon their aptitude for internet banking. The respondents were explained the structure of the questionnaire, its objective and the rating scheme, when handing over the questionnaire to them. The questionnaires were checked for blank answers or missing responses and the respondents were requested to fill in the missing data. Also the items not rated were brought to the notice of the respondent with a request to complete the questionnaire. The respondents were not required to mention their name on the questionnaire, thus ensuring that they answer the questions objectively and in an unbiased manner. The respondents belonged to different gender, marital status, age groups, occupation and educational background.

The survey lasted for 5 months. The data were collected from mid December 2015 to mid May 2016. A total of 850 completed questionnaires were collected from 450 users of internet banking and 400 non users of internet banking from the state Goa in India.

### **3.5 DATA ANALYSIS PROCEDURE.**

The data collected from the preliminary interviews were analysed and summarized to draw conclusions. The narrations and conclusions drawn from the content analysis of the qualitative study facilitated the identification of constructs and the generation of the scale items for the measurement instrument. The initial items for the measurement instrument were constructed based on the findings of the qualitative study and the review of literature. To finalise the items for the questionnaire, Content Validity was initially conducted for all the items of the newly developed measurement scale. For this purpose, the initial measurement model developed was presented to the experts. Based on their ratings, the item content validity index was calculated for each item and the scale content validity index was calculated for each scale and the items not satisfying the prescribed criteria were removed from the scale. This was followed by face validity and pre-testing of the measurement instrument based on which the questionnaire was finalised.

For the quantitative study, the Data collected on the 850 questionnaires, from 450 Users of internet banking and 400 Non Users of internet banking were entered using IBM SPSS Version 21. The analysis of the Data has been done by using SEM (Structural Equations Modeling) using IBM SPSS AMOS Version 22. The Maximum likelihood estimation method has been adopted. The Exploratory Factor Analysis (EFA) was performed to identify the dimensions of the constructs by using SPSS software. These dimensions were confirmed by using the Confirmatory Factor Analysis (CFA) using SPSS AMOS software. Average Variance Extracted (AVE) is calculated for each latent construct in the measurement model to examine the convergence of the scale items. Coefficient Alpha and Construct Reliability is

calculated for the Measurement models to test the existence of internal consistency among the measures representing the same latent construct. Discriminant Validity was also examined to understand the extent to which a construct is distinct from the other related constructs.

Path Analysis was used to test the Hypotheses on the relationships between the constructs in the models and the chi-square difference test was adopted to test the hypotheses on the moderating role of Felt Want. The model Fit is examined based on the fit Indices suggested for SEM AMOS models.

Structural Equation Modeling, which is an extension of several multivariate techniques, is useful in examining a series of dependence relationships simultaneously (Hair, Black, Babin, & Anderson, 2017). Since the proposed overall model was complex, involving a number of constructs and variables, it was felt that the SEM technique would best suit the analysis of the data. SEM is a powerful tool that enables researchers to test the relationship between multiple independent variables and multiple dependent variables ( Kazi, 2011). AMOS (Analysis of Moment Structures) is a software program to assist with SEM.

## CHAPTER 4

### DEVELOPMENT OF HYPOTHESES AND SCALE

The development of hypotheses to test the relationships in the proposed models and the definition of the terms used in the study are provided in this chapter. This chapter also discusses the development of scale items to measure the constructs and the development of the measurement models. The results pertaining to the validity and reliability of the measurement constructs and the assessment of the measurement models performed by using the confirmatory factor analysis (CFA) are presented in this chapter.

#### 4.1 DEVELOPMENT OF HYPOTHESES

The inputs gained from the exploratory study and the review of literature were used in the formulation of hypotheses. The hypotheses gave further direction for the preparation of the questionnaire and for the analysis and interpretation of the quantitative study. This research intends to study the customer intentions of adoption and use of internet banking by applying the Theory of Planned Behaviour.

##### 4.1.1 Development of Conceptual Models

Much research has supported the application of the theory of planned behavior in the use of electronic banking (Takele & Sira, 2013; Safeena, Date, Hundewale, & Kammani, 2013; Yaghoubi & Bahmani, 2010; Al-Smadi, 2012; Aboelmaged & Gebba, 2013; Bhatt, 2011; Lee, 2008;). This study also has adopted the Theory of Planned Behaviour (TPB) as the conceptual model as it was felt that this theory would most suitable for the intended research work. This study thus attempts to explore the

factors that influence consumer's intentions to use internet banking from the perspective of the Theory of Planned Behaviour. Furthermore the study aims to find the influence of perceived benefits and perceived risk on attitude and the influence of self efficacy and facilitating conditions on perceived behavioural control. Also the study examines the influence of the determinants of Felt want and the moderating role of felt want in the Theory of Planned Behaviour.

Hence the study examines the influence of attitude, subjective norms and perceived behavioural control as the antecedents to behavioural intention to use internet banking. The study also examines whether the effects of these factors on behavioural intention are different for the users and non users of internet banking and for the low want and high want users and non users.

The proposed Research model (Figure 4.1) comprises of Model 1 for Felt want and the overall model on intention which includes; Model 2 for attitude, Model 3A for perceived behavioural control and Model 3B for the TPB model.

Model 1 for Felt want is studied separately in order to understand the determinants of felt want and since only the moderating effects of felt want are studied in the TPB model. Model 2 for attitude examines the influence of perceived benefits and perceived risks on attitude identified in the study. Model 3A examines the influence of self efficacy and facilitating conditions on perceived behavioural control. Model 3B, the TPB model, examines the influence of attitude, subjective norm and perceived behavioural control as the antecedents to behavioural intentions and also the moderating role of felt want on the relationships between attitude, subjective norms and perceived behavioural control and intention is examined in this model.

### 4.1.2 Development of Hypotheses

#### A. Hypotheses proposed for the determinants of Felt Want

The qualitative research found that the factors; the services used/felt required, satisfaction with branch banking, nature and number of bank transactions, use of internet banking by the family members and the use of substitute products for banking have an influence on creating the want for internet banking. Hence it was felt that all these factors together could create the Felt want for internet banking. Therefore the following hypotheses have been proposed to study the influence of these predictors on Felt want.

##### (i) For the model of Felt Want the following hypotheses are proposed:

A respondent not using internet banking said, “I would want to use internet banking in future for viewing my account, for bill payment, to book tickets and for online shopping, since I can perform the transactions from my home and it saves time and effort”. Some other respondents were also of the same opinion. It was also understood from the qualitative study that the respondents using internet banking want to continue using internet banking for the various services provided. Hence hypothesis H1 is proposed.

**H1.** There is a significant positive relationship between the services used (for the users)/felt required (for the non users) and the felt want for internet banking.

Customer preferences for the new products and services may be evaluated by assessing the degree of satisfaction or dissatisfaction with current offerings (Roth & Amoroso, 1993). It was understood from the qualitative study that the responds were using internet banking due to the conveniences and benefits provided by internet

banking and also some of them were using internet banking due to the dissatisfaction with some of the limitations of branch banking. Whereas one of the reasons why the respondents were not using internet banking was that they were satisfied with the performance of branch banking. It was felt that a high level of satisfaction with the branch banking could negatively affect the intentions to use internet banking (Santouridis & Kyritsi, 2014). Thus the Hypothesis H2 is proposed.

**H2.** There is a significant negative relationship between the satisfaction with branch banking and the felt want for internet banking.

A respondent not using internet banking said “I have few financial transactions in a month which I do on cash basis, hence I do not want to use internet banking” and another respondent using internet banking stated, “Being a businessman, I have huge amount of banking transactions in a month of high value, hence internet banking is suitable and convenient for me”. From the qualitative study it was understood that respondents who had more transactions of higher value to be performed in a month felt a higher want for internet banking. Xue, Hitt, & Chen (2011) found that customers with a higher demand for banking services gain more from adopting Internet banking and hence adopt Internet banking faster. The volume of transactions has a significant effect on the perceived usefulness and adoption of internet banking (Ramayah et al., 2003). Thus the following hypothesis H3 is proposed.

**H3.** There is a significant positive relationship between the nature and number of bank transactions and the felt want for internet banking.

It was found from the exploratory study that for the non users, less members of their family use internet banking whereas for the users, more members of their family use internet banking. A few respondents who were not using internet banking stated that

they have not felt the want for internet banking since other members of the family perform the banking transactions by using internet banking. However the study by Braganza and Mekoth (2015) found that there is positive relationship between the use of internet banking by the bank customers and the use of internet banking by their family members. Therefore the following hypothesis H4 is proposed.

**H4.** There is a significant positive relationship between the use of internet banking by the family members and the felt want for internet banking.

It was understood from the exploratory study that one of the reasons why bank customers were not using internet banking was that they were availing of other banking products and services such as debit card, credit card, SMS alerts, ATM's and mobile banking which served the required purpose of performing the banking transactions. Internet banking poses a threat for the ATM's and phone banking as more importance given to internet banking leads to less importance given to the others (I-Baghdadi, Rizvi, & Rizvi, 2009). Therefore the following hypothesis H5 is proposed.

**H5.** There is a significant negative relationship between the use of substitute products for banking and the felt want for internet banking.

#### **B. Hypotheses proposed for the overall model on behavioural Intention.**

The overall model includes; the Theory of Planned Behaviour (TPB) model examining the influence of attitude, subjective norms and perceived behavioural control on the intentions to adopt and use internet banking, the model for attitude to examine the influence of perceived benefits and perceived risks on attitude and the model for Perceived Behavioural Control to examine the influence of self efficacy and facilitating conditions on perceived behavioural control. The Hypotheses relating to

the determinants of attitude, perceived behavioural control and intention are tested in the overall model on Intention.

The Theory of Planned Behaviour does not inform as to which attitudinal beliefs would affect the attitude of a user towards intention (Lee, 2008). It was felt from the exploratory study that the attitude of the bank customers towards internet banking could be influenced by perceived benefits and perceived risk. Consumers use online banking for the benefits it provides in comparison to other banking delivery channels (Wu, Lin, Li, & Lin, 2010). Lee (2008) found from among other factors that, perceived benefits have a positive influence on attitude and that perceived risk of Security, financial risk, time risk and performance risks have a negative influence on attitude. Therefore the hypotheses H6 and H7 are proposed as follows:

**(ii) The hypotheses proposed for the determinants of Attitude are:**

H6. Perceived benefits have a significant positive influence on attitude towards internet banking.

In the study, the perceived benefits are classified into perceived benefit of convenience and perceived benefits of user friendliness based on the EFA and CFA results. Therefore hypothesis H6 is stated as two sub hypotheses as follows:

**H6a.** There is a significant positive relationship between Perceived benefit of convenience and the attitude towards internet banking.

**H6b.** There is a significant positive relationship between Perceived benefit of user friendliness and the attitude towards internet banking.

H7. Perceived risks have a significant negative influence on the attitude towards internet banking.

In the study, perceived risks are classified into security and financial risk, performance risk and technical risk based on the EFA and CFA results. Therefore hypothesis H7 is studied as three sub hypotheses as follows:

**H7a.** There is a significant negative relationship between perceived security and financial risks and attitude towards internet banking.

**H7b.** There is a significant negative relationship between perceived performance risk and attitude towards internet banking.

**H7c.** There is a significant negative relationship between Perceived technical risk and attitude towards internet banking.

#### **The Theory of Planned Behaviour (TPB).**

The Theory of Planned Behaviour has received extensive recognition from among the numerous models studying intention/behaviour in social sciences (Shee & Wu, 2008; Hasbullah, Mahajar, & Salleh, 2004). This study has also applied the TPB model to study the behaviour intention of the bank customers to adopt and use internet banking. Hence the following 5 hypotheses are relating to the Theory of Planned Behaviour.

#### **Perceived behavioural control (PBC)**

Ajzen (1991) stated in the theory of planned behaviour, that perceived behavioural control (PBC) is most compatible with Bandura's concept of self-efficacy which is concerned with judgments of how well one can execute an action. The study by Venkatesh (as cited in Zolait, 2014) refers to PBC as a construct including two dimensions; self efficacy and facilitating conditions, that reflect the situational enablers or constraints to a particular behaviour. For this study on intentions towards internet banking, the influence of self efficacy and facilitating conditions is studied on

PBC as in other similar studies (Shih & Fang, 2004; Zolait, 2014). This relationship is examined by testing the following hypotheses:

**(iii) For the determinants of Perceived behavioural control the following hypotheses are proposed:**

**H8.** Self efficacy has a significant positive influence on perceived behavioural control.

**H9.** Facilitating conditions have a significant positive influence on perceived behavioural control.

According to the Theory of Planned Behaviour, “Intentions to perform behaviors of different kinds can be predicted with high accuracy from attitudes toward the behavior, subjective norms, and perceived behavioral control” (Ajzen 1991, p. 179). This study adopts the TPB model to examine the influence of these antecedents on the behavioural intention to use internet banking.

**(iv) For the determinants of intention the following hypotheses are proposed:**

**H10.** There is a significant positive relationship between attitude towards internet banking and behavioural intention towards the use of internet banking.

**H11.** There is a significant positive relationship between subjective norms towards internet banking and behavioural intention towards the use of internet banking.

**H12.** There is a significant positive relationship between perceived behavioural control on internet banking and behavioural intention towards the use of internet banking.

### **C. Moderating Role of Felt Want**

Baron and Kenny (1986) define a moderator as "a qualitative or quantitative variable that affects the direction and/or strength of the relation between an independent or predictor variable and a dependent or criterion variable" (p. 1174).

The qualitative research found that both the users as well as non users perceived benefits as well as risks in internet banking. They had a positive attitude towards internet banking and felt that it was beneficial. However it was observed that among the non users although they had a positive attitude towards internet banking, they did not have the intention to use internet banking because they did not feel the want for internet banking. Similarly although the bank customers perceive that the people important to them feel that they should be using internet banking, these customers have not been using internet banking. Also the bank customers who had the knowledge of using computers and internet and possessed the resources required for using internet banking, were not using internet banking because they did not feel the want for internet banking.

Previous research did not explain this situation. Therefore as suggested by Baron and Kenny (1986), Felt Want was introduced as the moderator variable, since inconsistent relations were expected between behavioural intention and its predictors across sub groups. Hence this study considers Felt want as a moderator for the relationship between attitude, subjective norm and perceived behavioural control and the intention to use internet banking in the Theory of Planned Behaviour model.

This is supported by Hasbullah, Mahajar, & Salleh (2004) who agree that the Theory of Planned Behaviour model with strong predictive utility is a well-established model for the prediction of intention and stated that "Despite its valid prediction, some

researchers have argued and criticized on the narrow view of the TPB's sufficiency and suggested relevant external factors beyond the three component model to help in improving the predictive ability on intention" (p. 103). Thus three hypotheses are proposed for the moderating role of Felt Want.

**E. For felt want as a Moderator in the TPB model (Model 3B) the following hypotheses are proposed.**

**H13.** The felt want for internet banking moderates the relationship between the attitude towards internet Banking and behavioural intention to use internet banking.

**H14.** The felt want for internet banking moderates the relationship between the subjective norms towards internet Banking and the behavioural intention to use internet banking.

**H15.** The felt want for internet banking moderates the relationship between the Perceived Behavioural Control on using internet Banking and the behavioural intention to use internet Banking.

#### **4.2 THE PROPOSED MODEL**

These 15 hypotheses are intended to be tested separately for the users and the non users of internet banking by using the overall model and the 2 sub models. The sub model of Felt want (Model1) examines the influence of the dimensions of felt want, the sub model on TPB (Model 3B) examines the moderating role of Felt want, and the overall model on intention comprising of Model 2, Model 3A and Model 3B, examines the significance of the relationships between; attitude and its determinants, perceived behavioural control and its determinants and the antecedents of intention, with the intention to use internet banking. The proposed model is an application of Theory of Planned Behaviour model incorporating the model on attitude, perceived

behavioural control and Felt Want and examining the moderating role of felt want on each of the relationships between attitude, subjective norm and perceived behavioural control and the intention to use internet banking. The hypothesized model is depicted in figure 4.1.

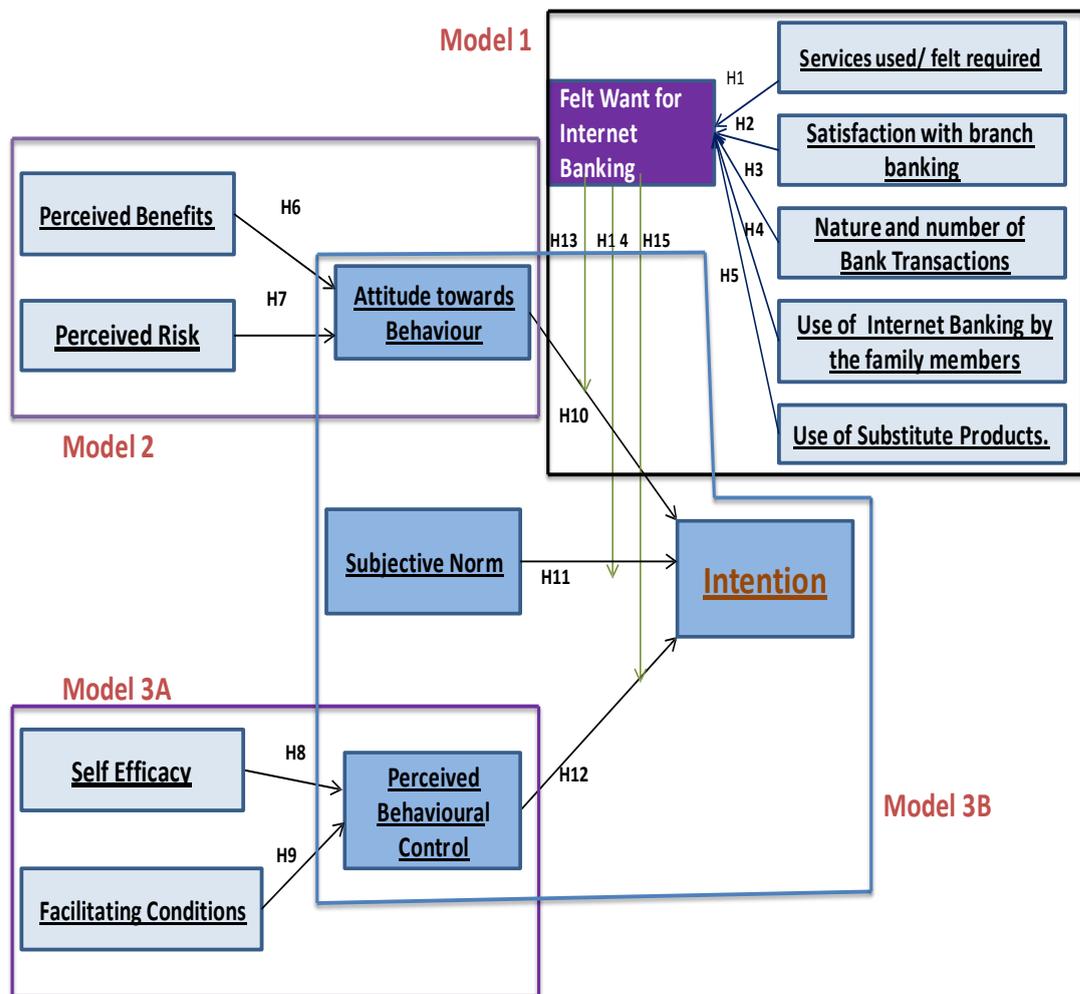


Figure 4.1. The Research Model

### 4.3 DEFINITION OF TERMS

There are multiple constructs involved in the proposed model to be tested in this research. The definition of these constructs has been given as follows:

1) **Intention:** Behavioural Intention measures a person's relative strength of intention to perform a behaviour and has been found to predict actual behaviour (Fishbein & Ajzen, 1975). Intentions are assumed to capture the motivational factors that influence behaviour and stronger the individual's intention to engage in behaviour, then more likely is the individual to perform the behaviour (Ajzen, 1991). Intentions to perform different kinds of behaviours can be predicted with high accuracy by considering the attitudes toward the behaviour, subjective norms and perceived behavioural control (Ajzen, 1991). Intention to use internet banking refers to a state of mind that drives an individual to use or not to use internet banking (Li, 2013).

2) **Attitude:** Attitude towards the behaviour has been defined as the individual's positive or negative feelings about performing a behaviour and consists of beliefs about the consequences of performing the behaviour multiplied by the individuals' evaluation of the consequence (Fishbein & Ajzen, 1975).

3) **Subjective Norm:** The subjective norm is a composite of normative beliefs (perceived expectations from relevant others) about a certain behaviour and the individual's motivation to comply with relevant others. Subjective norm refers to an individual's perceived social pressure to perform or not to perform target behaviour. (Fishbein & Ajzen, 1975). It is an individual's perception about the particular behaviour, which is influenced by the judgment of significant others.

4) **Perceived behavioural Control:** The construct perceived behavioural control takes into account the situation that occurs when complete control over behaviour is not possible, as in the case of an individual lacking necessary resources or skills to perform a behaviour (Ajzen, 1991). It was further stated by Ajzen (1991) that the role

of perceived behavioural control (PBC) is related to Bandura's concept of self-efficacy. The study by Venkatesh (as cited in Zolait, 2014) refers to PBC as a construct including two dimensions; self efficacy and facilitating conditions.

5) **Self Efficacy:** Self-efficacy is being confident of the ability to behave successfully in the situation (Bandura, 1982). Self Efficacy refers to an individual's beliefs about his or her capabilities to produce desired levels of performance. Self efficacy in this study refers to the confidence and ability of the bank customers to use online banking on their own.

6) **Facilitating Conditions:** Facilitating Conditions refer to the availability of resources and opportunities (e.g., skills, time, money, cooperation from others) available to an individual that offer the conditions necessary for adopting a certain behaviour (Ajzen, 1991). Facilitating conditions are related to the construct perceived behavioral control. If a person has the required resources and opportunities, and intends to perform the behaviour, then he or she should succeed in doing so (Ajzen, 1991).

7) **Felt Want:** A want is a manifestation of a need and is a wish or a desire for specific goods or services. In this study, the construct Felt Want for internet banking is defined as the desire for using internet banking based on the purpose internet banking would serve and how useful it would be for the bank customer.

8) **The services used/felt required:** These are the internet banking services provided such as; view account balance, payment of bills, payment for online reservations, download of application forms and fund transfers which are used by the users of internet banking or felt to be required by the non users of internet banking.

9) **Satisfaction with branch banking:** Satisfaction reflects a person's judgements of a product's perceived performance or outcome in relationship to expectations (Kotler et al, 2012). Satisfaction with branch banking in the study refers to the evaluation of the actual performance of the branch banking in meeting the goals and expectations of the bank customers.

10) **Nature and number of bank transactions:** In the study, the nature of bank transactions would mean the transactions made on cash basis or on cashless basis such as by the use of credit cards, debit cards, mobile banking, ATM's etc., and the number of bank transactions would refer to the volume of payments, collections, fund transfers, deposits etc. in a month.

11) **Use of substitute products for banking:** The construct, "use of substitute products for banking" used in the study, refers to the electronic banking channels and products other than online banking, such as ATM's, Mobile banking, Credit cards, Debit cards and various Apps which are used for performing the financial transactions. As internet banking, the ATM's and phone banking provide services that substitute each other, the bank customers may use Internet banking to perform some of the functions done by the use of ATM's and phone banking (I-Baghdadi, Rizvi, & Rizvi, 2009).

12) **Use of online banking by the family members:** This construct refers to the adoption and use of online banking by other members of the individual's family. It is concerned with family members being involved in performing various banking transactions by using Online Banking.

13) **Perceived benefits:** These are the benefits such as convenience, cost effectiveness, easy to use, efficient system and greater personal control which are perceived to be enjoyed by using a wide range of financial services by adopting internet banking. Online banking provides many benefits which offline banking channels cannot offer (Lee, 2008).

The present research investigated two types of Perceived benefits; perceived benefit of convenience and perceived benefit of user friendliness, perceived by bank customers in using internet banking.

**(i) Perceived benefit of Convenience:** This is defined as the convenience provided by internet banking usage and can be stated in terms of easy accessibility to the banking services, avoidance of personal visit to the bank, ability to keeping a track of the bank account transactions and performance of banking transactions by the customers on their own.

**(ii) Perceived benefit of user friendliness:** This is concerned with internet banking being user friendly and can be stated in terms of; the ease to gain expertise in using Internet Banking, performance of banking transactions accurately, the ease of use of internet banking in performing the banking transactions and internet banking being user friendly and an efficient system. User friendliness refers to the degree to which the users are comfortable with the innovation (Kaur, & Kaur, 2011).

14) **Perceived Risk:** The perceived risk in online banking is defined by Lee (2008) as “the subjectively determined expectation of loss by an online bank user in contemplating a particular online transaction” (p. 2). Perceived risk is conceptualized in terms of expected negative utility associated with a product ( Peter & Ryan, 1976).

The present research investigates three types of perceived risk; perceived security and financial risk, perceived performance risk and perceived technical risk perceived by bank customers in using internet banking.

**(i) Perceived security and financial risk:** Security risk is defined as “a potential loss due to fraud or a hacker compromising the security of an online bank user” (Lee, 2008, p.2). Financial risk is defined as “the potential for monetary loss due to transaction error or bank account misuse” (Lee, 2008, p.2). Perceived security and financial risk in the study, refers to the risk of private financial information being known to others without permission and the misuse of this information which could lead to monetary losses for the online banking customer. This risk also includes the fear of possible financial loss caused by virus attack and the fear of the bank account information not being protected in online banking.

**(ii) Perceived performance risk:** Performance risk can be stated as risk felt due to the lack of confidence in using internet banking and the fear of not being able to perform the internet banking transactions successfully due to the lack of adequate knowledge and expertise on the part of the customer. Performance risk is also concerned with the fear of the amount of time required to learn how to use internet banking and the inconvenience caused due to the lack of adequate knowledge on the part of the customer in using internet banking.

**(iii) Perceived technical risk:** This risk refers to the losses incurred and inconvenience caused due to the inability of the bank customer to perform internet banking transactions on account of the lack of internet connectivity or the failure of the banks’ server.

#### 4.4 SCALE DEVELOPMENT

The Scale development began with the extensive review of literature on; the factors influencing internet banking usage, existing theories on consumer behaviour and the existing scales for construct measurement in related studies. Review of existing literature facilitated concept clarification and the identification of existing scales for the following constructs; attitude towards behaviour (4 items), subjective norm (3 items), perceived behavioural control (3 items), self efficacy (3 items) and facilitating conditions (2 items). Few items for the scale on perceived benefits, perceived risk and intention to use internet banking were taken from the existing scales and re-phrased to suit the purpose of the study and the rest of the items for these scales were generated from the exploratory study.

The items for attitude towards behaviour are taken from the study by Rouibah, Ramayah, & May (2011), Nasri and Zarai (2014), Suh and Han (2002) and from the study by Cheng et al., mentioned in an article by Lee (2008). The items for subjective norms and perceived behavioural control are taken from the study by Wu and Chen also mentioned in an article by Lee (2008) and Rouibah, Ramayah, & May, (2011). The items for subjective norms are taken from the study by Nasri and Zarai (2014). The items for self efficacy are taken from the study by Shih and Fang (2004). The items for facilitating conditions are taken from the study by Shih and Fang (2004) and Samudra, & Phadtare, (2012). The items for intention are taken from Suh and Han (2002) and Nasri and Zarai (2014). The items for perceived benefits are taken from Luarn & Lin (2005). The items for Perceived Risk are taken from Demirdogen, Yaprakli, Kemal, & Husain, (2010) and Jih, Wong & Chang (2005). Minor changes in the wordings were made to suit the study.

New scale had to be developed for the constructs; the services used/felt required, nature and number of bank transactions, satisfaction with branch banking, use of internet banking by the family members, use of substitute products for banking and for felt want which were identified by the exploratory study. The pool of the initial items for this scale was generated by the semi structured in-depth interviews, based on the perceptions, experiences and reasons for the adoption and non adoption of internet banking narrated by the respondents both users and non users of internet banking.

Content Validity and face validity was ascertained to test the validity of the newly developed scale. Pre-testing of the questionnaire was done prior to the actual data collection. The purpose of this procedure was to ensure that the scale items measure the constructs it represents and also to ensure that the respondents would be able to answer the questionnaire without any difficulty.

**4.4.1 Content Validity.** Content validity is the degree to which elements of an assessment instrument are relevant to and representative of the targeted construct for a particular assessment purpose (Haynes, Richard, & Kubany, 1995). Content validity is a qualitative assessment of whether the items in a scale capture the real nature of the constructs and variables. Content validity is a prerequisite for other validity, hence it should receive the highest priority during the development of the instrument (Zamanzadeh et al., 2014). The purpose of conducting Content Validity is to see the extent of appropriateness of the instrument developed. It would include Expert's assessment of the applicability of the items to each dimension and Expert's assessment of the representativeness of the items to each dimension. Yaghmale, (2003) stated that Content validity measures the comprehensiveness and representativeness of the content of a scale.

According to Kazi (2011), Content Validity deals with the meaning and scope of the construct as covered by measured items, he also stated that as constructs are unobserved variables and cannot be measured directly, a researcher needs to develop a set of measured items that capture the domain of the latent constructs. The resulting instrument content validity is based mainly on the judgment, logic and reasoning of the researcher with validation from a panel of judges holding expertise in the domain of content (Wynd, Schmidt, & Schaefer, 2003).

Sirajudeen, Pillai, Shah, & Mohan (2012) state that, in order to have confidence in the outcomes of a research, the tool used must be both valid and reliable and it should be ensured that the tool consistently measures what it purports to measure when perfectly administered.

For the instrument to be developed on Customer intentions to adopt and use internet banking services the content validity letter was prepared as attached in Appendix B to be given to the experts. 7 experts in the field, rated the items for the constructs, with the score of 1- 4 based on the following.

**Relevance (Rel):** 1- not relevant, 2- item needs some revision, 3- relevant but needs minor revision, 4-very relevant.

**Clarity (Cla):** 1- not clear, 2- item needs some revision, 3- clear but needs minor revision, 4- very clear.

**Simplicity (Sim):** 1- not simple, 2- item needs some revision, 3- simple but needs minor revision, 4- very simple.

The content validity index (CVI) is calculated by tallying the results of the experts based on the degree to which the experts agree on the relevance, clarity and simplicity of the items. The ratings given by the experts were tallied and also their suggestions were considered in finalizing the Scale. In addition, item content and clarity as well as overall instrument comprehensiveness are evaluated in this stage.

The I-CVI (Item Content Validity Index) is calculated as the number of experts giving a rating of either 3 or 4 (relevant) divided by the total number of experts scoring the item.

The S-CVI (Scale Content Validity Index) is calculated as the number of items that the experts gave a rating of either 3 or 4 (relevant) divided by the total number of item ratings provided by the experts.

Polit and Beck (2006) recommended that for a scale to be judged as having excellent content validity, it would be composed of items with I-CVIs that meet Lynn's (1986) criteria (I-CVI= 1.00 with 3 to 5 experts and a minimum I-CVI of .78 for 6 to 10 experts) and it would have an S-CVI/ Ave of .90 or higher. The tabulated report of the I-CVI (Item Content Validity Index) calculated for the scale under each construct has been attached in Appendix C. The items to the scale having an Item Content Validity Index of 0.78 and above were accepted and the Scale Content Validity Index was calculated. The Scale Content Validity Index for all the constructs was higher than the minimum requirement of 0.9 which shows that the scale has an excellent content validity. The Scale Content Validity Index calculated for the constructs has been reported in the following table.

Table 4.1

*S-CVI (Scale Content Validity Index) for the Constructs.*

Sr. No.	Constructs	Scale-CVI/Ave
1	Perceived Benefits.	0.940
2	Perceived Risks.	0.908
3	Online banking Services used/Felt required by the bank Customers.	0.957
4	Nature and number of Bank Transactions.	0.950
5	Satisfaction with branch banking.	0.970
6	Use of substitute products for banking.	0.928
7	Use of Online Banking by the family members.	0.950
8	Felt Want For Online Banking.	0.940
9	Intentions to use internet banking (for Users of Online Banking).	0.928
10	Intention to adopt and use internet banking (for Non-Users of Online Banking).	0.960

The Item Content Validity Index for the scale items is calculated based on the ratings of relevance for the items. The ratings of the items for simplicity and clarity were considered in revising the items of the scale. The expert's suggestions for minor revisions regarding the clarity of wordings of the items were also incorporated in the instrument. The revised scale was presented for Face Validity.

**4.4.2 Face Validity.** Face validity is used as a supplemental form of validity, supporting content validity and answers the question whether an instrument apparently has validity for the subjects or participants (Zamanzadeh et al., 2014). Face validity is performed after the instrument being developed undergoes content validity. "Face validity concerns judgments about items after an instrument is constructed,

whereas content validity is more properly ensured by the plan of content and item construction before it is constructed” (Zamanzadeh, et al., 2014, p. 168).

“Face Validity means that the instrument looks, on the face of it, as if it measures the construct of interest” ( DeVon et al., 2012, p. 157). Thus, face validity is concerned with an inspection of the final product. The purpose of face validity is to introduce the questionnaire to a small sample of the respondents in order to identify the problems with the data collection instrument and make the necessary changes. In Face validity, the expert looks at the items in the questionnaire and concludes that the instrument is a valid measure of the concepts which are intended to be measured (Bolarinwa, 2015)

Face validity was assessed which is essentially a post hoc assessment of whether the items in a scale measure a construct (Rossiter, 2002). The acceptable items after content validity were further subject to face validity. Face validity was done with 7 Experts having adequate knowledge of internet banking of which 3 experts were the users of internet banking and 4 experts were non users of internet banking. These Experts were asked to comment on the sensitivity of the scale, in particular the appropriateness of the items for the constructs, ambiguity in the items developed if any, difficulty level in reading and understanding the scale items, length of the items and the relationship between the items and the main objective of the study. Based on their suggestions the items of the scale requiring revision were reframed and some items which were felt to be redundant were removed. The items which were unclear were further identified and reframed. The experts were also asked about the suitability of options for the questions pertaining to demographics and based on their suggestions necessary changes were done.

### 4.4.3 Pre testing the scale

In pre testing the questionnaire is administered to a small sample of respondents before the final study by using the procedures that are being planned for the main study. “Pretesting is generally defined as testing a set of questions or the questionnaire on members of the target population” (Czaja, 1998, p. 52). The purpose of pretesting is to examine; each question for ambiguous terms, mismatches between questions and their response choices and whether the sections of the questionnaire and questions within the sections have a logical flow (Czaja, 1998).

Hair et al. (2017) stated that generally when the scale items “are either developed for a study or are taken from various sources, some type of pre-test should be performed. The pre-test should use respondents similar to those from the population to be studied so as to screen items for appropriateness” (Hair et al., 2017, p. 567).

Pre-testing of the scale was conducted prior to the actual data collection. The final scale was pre-tested on 10 bank customers; 5 bank customers using internet banking and 5 bank customers not using internet banking. The researcher noted the questions where the respondents sought clarification and 2 items were rewritten for simplicity. The short forms for the 5 point likert scale were replaced with the full terms. Minor adjustments were also done to the instructions given based on the respondent’s difficulties. The pre-tests showed that the respondents were able to understand and answer the questions posed to them in the questionnaire with the exception of minor difficulties. The average time taken by the respondents to fill in the questionnaire was 16 minutes.

After conducting Content Validity, face Validity and Pre-testing of the scale, the items to the scale were reduced as follows. The Initial pool of items and the final items to the scale are shown in the following table.

Table 4.2

*Items for the Constructs: Initial items and Final items to the Scale*

Sr. No.	Constructs	Initial pool of items	Final items to the scale
1	Perceived Benefits	33	18
2	Perceived Risks	32	19
3	Online Services used/Felt Required by the bank Customers	11	10
4	Nature and number of Bank Transactions	4	3
5	Satisfaction with branch banking	11	8
6	Use of substitute products for banking.	6	5
7	Use of Online Banking by the family members	6	4
8	Felt Want For Online Banking	6	4
9	Intentions to use internet banking in future (for Users of Online Banking).	6	4
10	Intention to adopt and use internet banking in future (for Non-Users of Online Banking).	4	2

#### 4.4.4 Final Measurement Scales

The scale items finalized for the constructs have been included in the questionnaire administered to the bank customers for the exploratory study. These scale items finalised have been attached in Appendix D.

#### 4.5 DATA SCREENING

The data collection from 850 respondents was followed by data analysis. The first step in data analysis involves the screening of data. Odom and Henson (2002) suggested that a statistical analysis should begin with a careful inspection of the research data in order to improve the performance of statistical methods. Missing data could pose problems for model estimation and for hypothesis testing (Bagozzi, & Yi, 2012). The Data entry for the study was therefore checked for missing data, Kurtosis and Skewness and wrong entry of values by using SPSS.

The output of data screening indicated the following:

- (i) Missing Data: There was no missing data as conformed by the table of case processing Summary.
- (ii) Wrong entry: The descriptive statistics indicated high values for 2 items of users and 3 items of non Users which were above the specified range values; the same were identified as wrong entry and rectified.
- (iii) Statistical Test for Normality: The Descriptives Table was checked to detect for items with Skewness and Kurtosis greater or less than 2.58 at 0.01 level of significance. As stated by Hair, Black, Babin, Anderson, & Tatham,( 2006), a simple test is the rule of thumb based on the Skewness and Kurtosis values based on the significance level desired. They stated that the most commonly used critical values are  $\pm 2.58$  (.01 significance level) and  $\pm 1.96$  corresponding to a 0.05 error level. The Skewness and Kurtosis for all the items were within the acceptable values except for the following 2 items each for the users and non users of internet banking which were identified for high Kurtosis Value and deleted from the data entry.

Table 4.3

*Items with high kurtosis value*

<u>Users/Non Users</u>	<u>Variable</u>	<u>Item code</u>	<u>Kurtosis Value</u>	<u>Action taken</u>
Users	Perceived Benefit	PB3	2.7	Removed
Non Users	Perceived Benefit	PB3	3.411	Removed
Users	Perceived Benefit	PB12	2.8	Removed
Non Users	Perceived Benefit	PB12	3.172	Removed

The description of the items removed are PB3 “I feel Internet Banking saves transportation cost required to travel to the bank” and PB12 “I feel Internet Banking saves the customers from the physical effort of going to the bank for most of the banking transactions (standing in a queue, vehicle parking etc.)”. Following this step, the scale items were then tested for construct validity and construct reliability.

#### **4.6 DEVELOPING THE MEASUREMENT MODEL**

The measurement model is developed after the scale items are specified (Hair et al., 2006). After the collection of the data and the performance of data screening, the scale items were specified and the measurement models were developed in the direction of the proposed model. At this stage each latent construct to be included in the model is identified and the measured indicator variables are assigned to the latent construct. To check the validity of the items to the scale and also the validity of the constructs to the measurement model, convergent validity and construct validity were assessed as suggested by Hair et al. (2006).

**Construct Validity**

One of the primary objectives of CFA/SEM is to assess the Construct Validity of a proposed measurement theory. Construct Validity is the extent to which a set of measured items actually reflect the theoretical latent construct those items are designed to measure. Construct validity methods were developed to consider the degree of convergence for a set of measures of a hypothesized construct and of discrimination between those measures and measures of a different construct (Bagozzi, & Yi, 2012). Thus construct validity deals with the accuracy of measurement instrument. Construct Validity is made up of the following components.

**1. Convergent Validity:** “The items that are indicators of a specific construct should converge or share a high proportion of variance in common, known as convergent validity” (Hair et al., 2017, p. 618). For convergent validity each measurement item of a construct should have high correlations with other items measuring the same hypothetical construct. The relative amount of convergent validity among the item measures can be estimated in the following ways.

**a. Factor loading.** The standardized loading estimates should be 0.5 or higher, and ideally 0.7 or higher (Hair et al., 2006). In the case of high Convergent Validity, high loadings on a factor would indicate that they converge on a common point, that is the latent construct. The study considers an initial factor loading of 0.7 and above for each scale item. Only in the case where it is required to get the items for the constructs, a factor loading  $\geq 0.65$  is considered.

**b. Average Variance extracted (AVE).** AVE is computed as the total of all squared standardized factor loadings divided by the number of items for each latent construct. An AVE of 0.5 or higher suggests adequate convergence (Hair et al. 2006).

**c. Construct reliability (CR).** Reliability is an indicator of convergent validity. CR of 0.7 or higher suggests good reliability (Hair et al., 2006). High construct reliability indicates that all the measures/items consistently represent the same latent construct. Reliability is the degree of agreement among a set of measures of a single construct.

**(i) Coefficient alpha.** Coefficient alpha is used to measure the reliability of each of the dimensions for Felt want, Attitude and Intentions towards the adoption and use of internet banking. Cronbach's alpha is derived for computing the reliability of measures to ascertain the internal consistency of items (Bagozzi, & Yi, 2012).

**(ii) Construct reliability (CR).** Construct reliability is calculated since it is often used in conjunction with SEM models, for the Measurement models of Felt want, attitude and intention towards using internet banking. The rule of thumb for either reliability estimate is that 0.7 or higher suggest good reliability. (Hair et al., 2006)

**2. Discriminant Validity:** "Discriminant Validity is the extent to which a construct is truly distinct from other constructs" (Hair et al., 2017, p. 619). Thus a high discriminant validity provides evidence that the construct is unique and captures some phenomena which other measures do not capture. CFA provides 2 common ways of assessing the discriminant validity of constructs.

(i) Discriminant validity is supported if the fit of the 2 construct model is found to be significantly different from that of the one construct model.

(ii) A more rigorous test would be to compare the average variance-extracted values for any two constructs with the square of correlation estimates between these two constructs. The estimates of variance- extracted should be greater than the squared correlation estimate (Hair et al., 2006). Thus for the data analysis in our study it was examined if the AVE for every construct is much larger than any of the correlations among the latent constructs and the other constructs in order to test for discriminant validity.

Passing this test provides good evidence of the discriminant validity. Discriminant validity thus examines the distinctiveness between constructs and means that the individual measured items should represent only one latent construct. It further means that the items forming up a construct can be distinguished from items of another construct.

To develop the measurement model, Exploratory Factor Analysis (EFA) was done using SPSS followed by Confirmatory Factor Analysis (CFA) done by using SEM AMOS.

Kaiser-Meyer-Olkin (KMO) Measure of Sampling Adequacy and Bartlett's Test of Sphericity were assessed before conducting EFA. Kaiser-Meyer-Olkin (KMO) Measure of Sampling Adequacy greater than 0.5 indicates that the variables are suitable for factor analysis and a statistically significant Bartlett's Test of Sphericity ( $< 0.05$ ) indicates the presence of correlations among the variables (Hair, Black, Babin, & Anderson, 2017).

**A. Exploratory Factor Analysis (EFA)**

EFA is done to group together all similar variables measuring a single factor. Exploratory factor analysis is a complex and multi-step process which is a widely utilized and broadly applied statistical technique used in the social sciences (Costello & Osborne, 2005). EFA allows a number of variables to be reduced to a smaller and a more manageable set of underlying concepts. The aim of EFA is to identify a factor structure in a set of stated variables. An EFA was conducted on the items of Felt Want and its dimensions, on the items of perceived benefits, perceived risks and for the dimensions of intention, separately for the users and the non users of internet banking.

Regarding the sample size for factor analysis, Hair, Black, Babin, Anderson, & Tatham (2017) stated that the minimum sample is to have at least five times as many observations as the number of variables to be analysed. The sample size in the study for factor analysis, exceeded the minimum requirement.

EFA was conducted to provide an insight into the dimensions of the scale items. SPSS Version 21 was adopted and Principal Component Analysis using Varimax with Kaiser Normalization was used for factor extraction. The Varimax rotation was used and factor loading less than 0.5 were suppressed for clarity.

**B. Confirmatory factor Analysis (CFA) and Results.**

CFA is a statistical Technique in which a set of observed variables are used to verify the factor structure. The sample size guidelines of 5-10 participants per variable is

commonly used in confirmatory factor analysis (Floyd & Widaman, 1995). The sample size in the study exceeded the minimum required for CFA.

Confirmatory factor analysis was used to test the construct validity of the scales. Confirmatory Factor Analysis (CFA) was performed to examine the reliability and validity of the measurement model. The unidimensional CFA and Multi dimensional CFA of the constructs for the users and Non users of internet Banking has been performed using AMOS version 22. The uni-dimensional and multi-dimensional CFA is done for the constructs Felt want and its dimensions, attitude and its dimensions, dimensions of perceived behavioural control and for the dimensions of Intention.

The uni-dimensional CFA shows the the standardised regression weights for each scale item. The table includes the description of the items accepted along with their factor loading. Also the Average Variance Extracted, Average factor loading and Cronbach's Alpha are provided to test construct reliability. For the multi-dimensional CFA, Average Variance Extracted, squared correlations and construct reliability are provided to test the reliability and the validity of the constructs. Also the fit indices provide by AMOS output have been considered to examine the model fit for the measurement models.

Six fit indices were examined namely; CMIN/DF, GFI, AGFI, RMSEA, NFI and CFI to test the fit of the multi-dimensional CFA Models for the Users and the non users.

Key Goodness of Fit Indices provide for the assessment of Model Fit (Hair et al., 2017). Although CFA output includes many fit indices, some of them have been considered in the study. As recommended by (Hair, Black, Babin, & Anderson, 2017), the fit indices used to evaluate the CFA multi-dimensional models in this study include; Chi-square/df, Absolute fit measures (GFI, RMSEA), Incremental Fit Indices

(NFI, CFI) and Parsimony Fit Indices (AGFI). The recommended fit Index by Hair et al. (2017) is  $CMIN/df < 2$  is very good, and between 2 and 5 is acceptable,  $RMSEA < 0.08$ ,  $CFI > 0.9$ , NFI between 0-1 (higher values indicate better Fit),  $GFI > 0.9$  / between 0-1 acceptable (with higher values indicate better Fit). AGFI values are typically lower than GFI (between 0-1 acceptable).

This section presents the results of the confirmatory factor analysis for each of the constructs and for the measurement models for Felt want, Attitude and Intention. Confirmatory factor Analysis is provided first for the users data and then for the non users of internet banking. CFA is done in the following order:

- (i) CFA of the dimensions of Felt Want for the users of Internet banking.
- (ii) Measurement model for Felt Want for the users.
- (iii) CFA for the dimension of Felt Want for the non users of Internet banking
- (iv) Measurement model for Felt Want for the non users.
- (v) CFA of perceived benefits and perceived risk for the users of Internet banking.
- (vi) Measurement model for Attitude for the users.
- (vii) CFA for perceived benefits and perceived risk for the non users.
- (viii) Measurement model for Attitude for the non users.
- (ix) CFA of the dimensions of Intention for the users of Internet banking.
- (x) Measurement model for Intention for the users.
- (xi) CFA for the dimensions of Intention for the non users of Internet banking.
- (xii) Measurement model for Intention for the non users.

Confirmatory Factor Analysis (CFA) has been performed by using AMOS to assess the convergent and discriminant validity of the instrument.

## **Felt Want for internet banking for the Users**

### **A. EFA of the items of the dimensions of Felt Want for the Users of Internet banking.**

The latent constructs examined for their influence on Felt Want for the Users of internet banking are the services used, satisfaction with branch banking, nature and number of bank transactions, online banking use by family and the use of substitute products for banking.

For the items of Felt want and its dimensions for the users, the value of KMO measure of sampling adequacy is 0.847 ( $> 0.5$ ) thus indicating a high degree of sampling adequacy. The Bartlett's Test of Sphericity was significant (8665.293, 561, P 0.000) and indicates the appropriateness of the data for factor analysis.

As indicated in Appendix G the Exploratory Factor Analysis (EFA) for all the dimensions of Felt Want for the users showed that all the items of online banking use by family, satisfaction with branch banking and Felt Want stood as one factor respectively. The 10 items of services used formed 2 components of 3 items and 7 items respectively. For the use of substitute products for banking, item2 had no loading and the other 4 items of substitute products for banking converged into 2 dimensions. For the nature and number of bank transactions, item1 had no loading and item2 and item3 formed one component.

## (i) CFA of the dimensions of Felt Want for the users of Internet banking.

## 1. Services Used

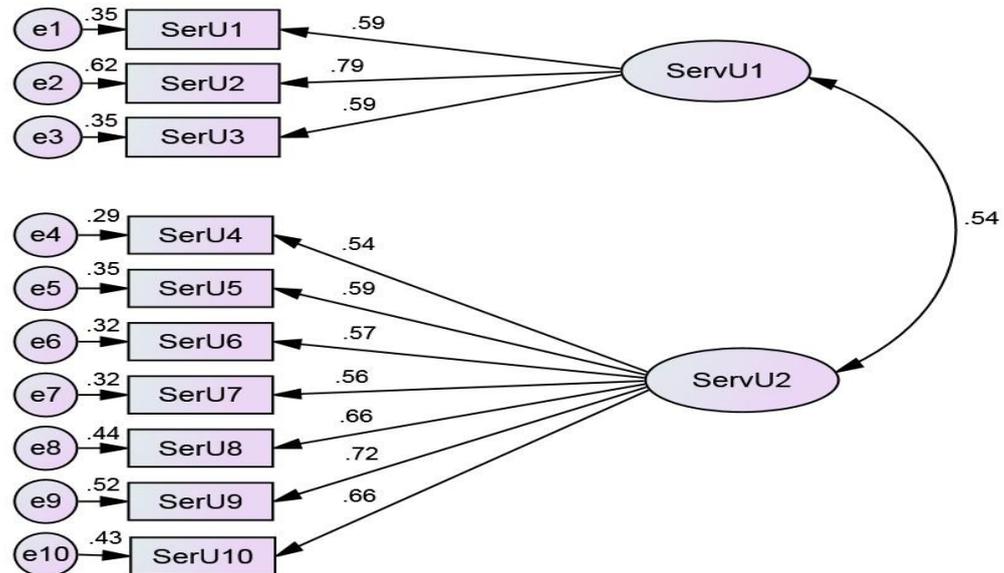


Figure 4.2. CFA Model of services used

From the first component (ServU1) when the item SerU3 was removed, the factor loading drastically increased to 0.72 for SerU1 as seen in the measurement model Figure 4.7. Hence the item SerU3 was removed. The other 2 items were retained in Component 1. From Component 2, the items SerU4, SerU5, SerU6 and SerU7 with low factor loading were removed and items SerU8, SerU9, SerU10 with a loading above 0.65 were retained since their fit improved in the measurement model. The description of the items of services used removed and retained are given in the following table.

Table 4.4

*Description of items for internet banking services used.*

Item code	Description	Removed/ <b>Retained</b>	Factor loading
SerU1	View the account statements for balance and banking transactions information.	<b>Retained</b>	0.59
SerU2	Download the Account history	<b>Retained</b>	0.79
SerU3	Download application forms, deposit slips, interest certificate etc.	Removed	0.59
SerU4	Making payments towards utility Services (telephone, mobile phone, electricity, DTH etc.)	Removed	0.54
SerU5	Payment of Insurance premiums, Purchase of insurance policies.	Removed	0.59
SerU6	Fund Transfer.	Removed	0.57
SerU7	Payment for online reservations (hotels, cinema tickets, travel tickets).	Removed	0.56
SerU8	Making Fixed Deposits and Recurring Deposits	<b>Retained</b>	0.66
SerU9	Request for cheque book, demand draft	<b>Retained</b>	0.72
SerU10	Update KYC details, Aadhar card number, PAN number, phone number, address etc..	<b>Retained</b>	0.66

Cronbach alpha for the 2 items of Component1 is 0.675 ( $\geq 0.7$  acceptable  $\geq 0.6$  questionable) and Cronbach alpha for the 3 items of Component 2 is 0.766. The AVE is 0.53 each for the components with changed factor loadings after removing the items. Therefore the scale has a fairly good convergent validity and construct reliability.

## 2. Satisfaction with branch banking.

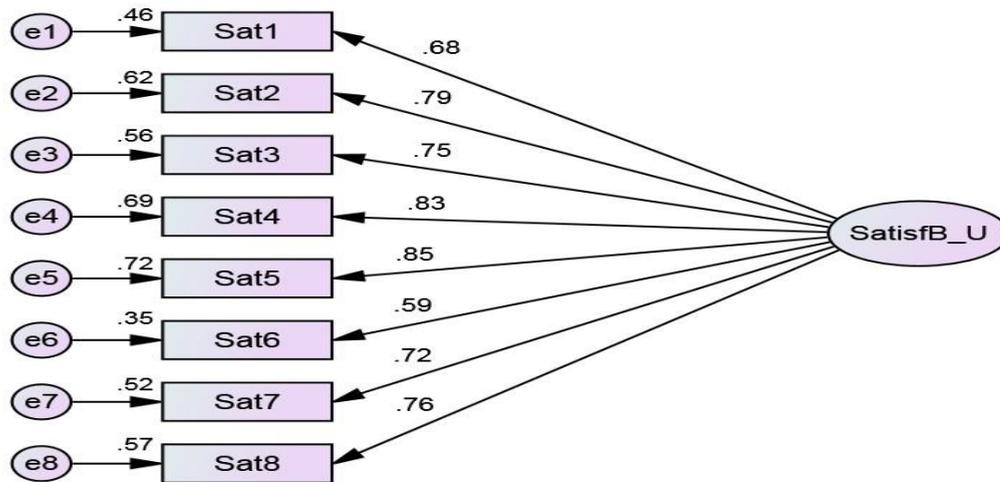


Figure 4.3. CFA Model for the satisfaction with branch banking for the users.

The items Sat1 “I feel satisfied with the face-to-face interaction with the bank officials” and Sat6 “I feel happy there is no risk involved in branch banking”, loading less than 0.7 were removed. The description of the remaining items retained is given in the following table.

Table 4.5

*Description of items for satisfaction with branch banking for users.*

Item code	Description	Factor loading
Sat2	I am satisfied with the ease to approach the bank officials at the branch.	0.79
Sat 3	I am happy about the advice provided by the bank officials at the branch.	0.75
Sat 4	I am happy with the performance of branch banking.	0.83
Sat 5	I feel satisfied with the convenience of Branch banking.	0.85
Sat 7	I am happy I can manage my Banking transactions with Branch Banking.	0.72
Sat 8	I am satisfied with branch banking.	0.76

The Average factor loading is 0.778 for the items for satisfaction with branch banking for users, AVE is 0.61 and Cronbach alpha is 0.904. As indicated in table 4.5 all items load significantly with a factor loading of 0.72 and above. Evidence of convergent validity is provided by all factor loadings being statistically significant ( $> 0.7$ ). The cronbach's alpha of 0.904 ( $> 0.7$ ) shows a high construct reliability.

### 3. Online banking use by family

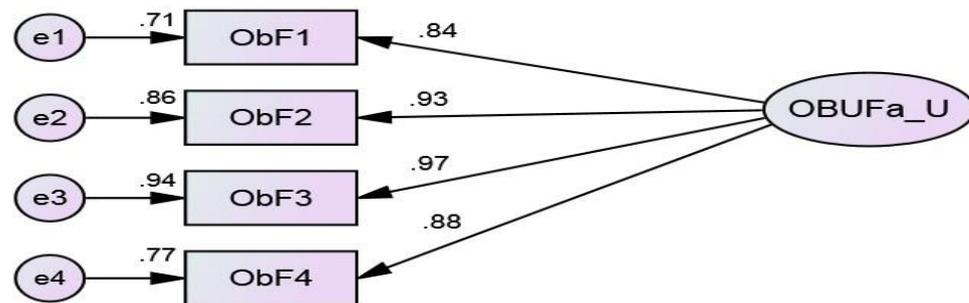


Figure 4.4. CFA Model for online banking services used by family for the Users.

All the 4 items measuring online banking use by family had a very high loading of 0.84 and above and hence were retained. The description of the items is given in the following table.

Table 4.6

*Description of items for Online banking use by family for the users.*

Item code	Description	Factor loading
ObF1	The utility bills are paid by other members of my family using internet banking	0.84
ObF2	Fund transfers are performed by other members of my family using internet banking.	0.93
ObF3	Banking transactions are performed by my family members using internet banking.	0.97
ObF4	Other members of my family use internet banking.	0.88

The Average factor loading is 0.905, AVE is 0.82 and Cronbach alpha is 0.946 ( $> 0.7$ ). As indicated in table 4.6 all items load significantly with a factor loading of 0.84 and above. Evidence of convergent validity is provided by all factor loadings being statistically significant ( $> 0.7$ ) and the AVE being 0.82 ( $> 0.5$ ). Therefore the fit statistics show that the scale has a considerably good convergent validity and construct reliability.

#### 4. Use of substitute products for banking.

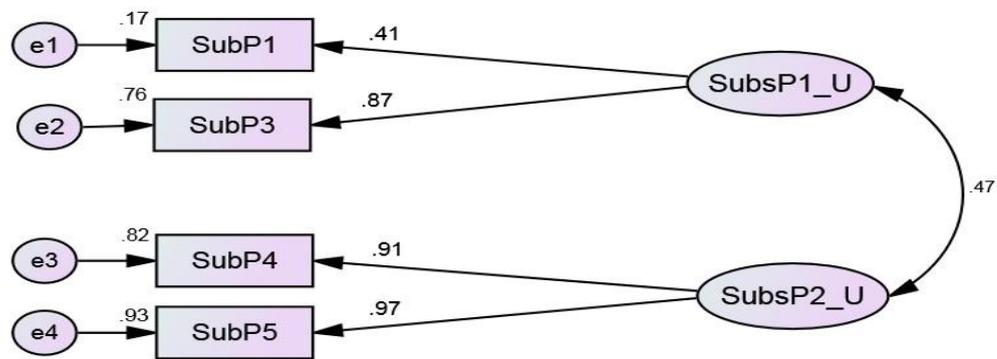


Figure 4.5. CFA Model for use of substitute products for banking for the users.

EFA of the 5 items relating to the use of substitute products for banking showed that item SubP2 “I make payments using Credit Card” had no loading. The other 4 items converged into 2 components, with SubP1 “I perform my banking transactions using ATM” and SubP2 “I make payments using Debit Card” forming one component which was not considered since SubP1 had a very low factor loading of 0.41 ( $< 0.7$ ) and the Cronbach’s Alpha was 0.529 ( $< 0.7$ ). The item description of the other factor with 2 items Sub4 and Sub5 is given in the following table.

Table 4.7

*Description of items for use of substitute products for banking for the Users*

Item code	Description	Factor loading
SubP4	I use Mobile App to make payments and to transfer funds.	0.91
SubP5	I perform my banking transactions using Mobile Banking.	0.97

The Average factor loading is 0.94, AVE is 0.875, Cronbach alpha is 0.934 and the factor loadings are above 0.9 showing that the scale had a considerably good convergent validity and construct reliability.

### 5. Nature and number of bank Transactions.

EFA of the 3 items relating to Nature and number of bank Transactions showed that item1 “I perform most of my transactions on cashless basis (using debit card, credit card, cheque, fund transfers, etc.)”, had no loading and hence was removed. This component thus had 2 items, item2 “I perform a large number of bank transactions in a month” and item3 “I deal with huge amount of money in banking transactions”. As there were only 2 items CFA could not be done and this dimension was directly included in the Measurement model. The Cronbach’s Alpha for the 2 item component was 0.793 (> 0.7) which showed that the dimension was reliable.

### 6. Felt Want

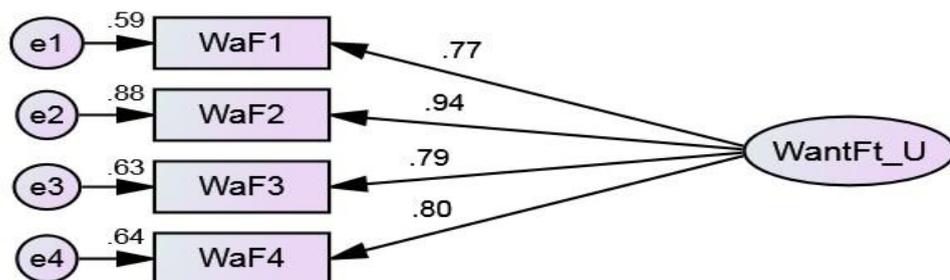


Figure 4.6. CFA Model for Felt want for the users.

The 4 items measuring Felt Want for internet banking for the users had factor loading of 0.77 and above, hence all the items were retained. The description of the items is given in the following table.

Table 4.8

*Description of items for Felt Want for the Users.*

Item code	Description	Factor loading
WaF1	I feel Internet Banking is useful for me to perform my banking jobs.	0.77
WaF2	I think Internet banking is significant for me.	0.94
WaF3	I feel internet Banking will solve my banking requirements.	0.79
WaF4	I would want to use internet banking.	0.80

The Average factor loading is 0.825, AVE is 0.685 and Cronbach alpha is 0.894 and the factor loadings are 0.77 and above. Therefore the scale has a considerably good convergent validity and construct reliability.

**Dimensions of Felt Want.**

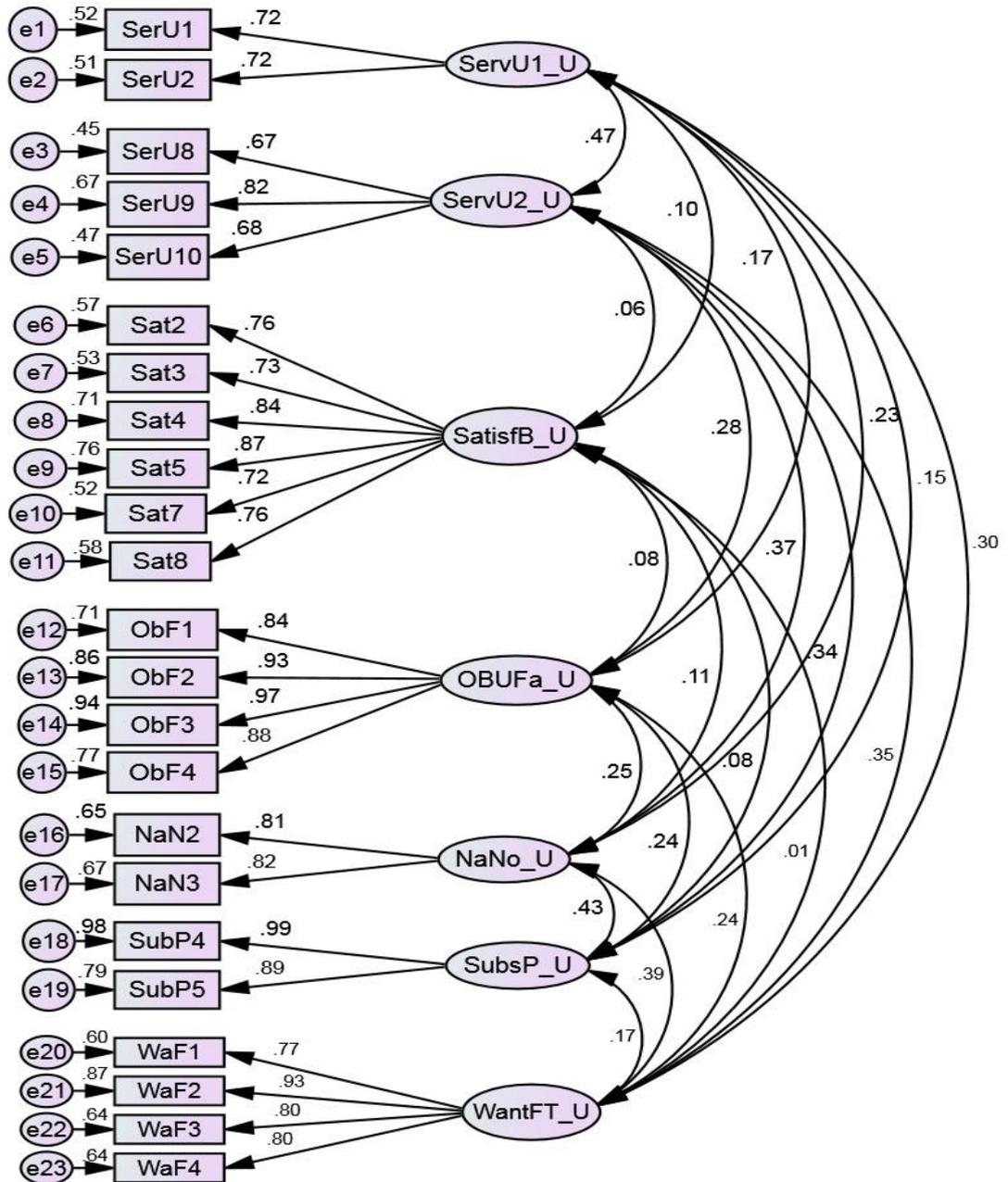


Figure 4.7. Measurement model for Felt want for the users.

Table 4.9

*Convergent and Divergent validity of the dimensions of Felt Want Felt for the users*

Construct	CR (≥ .7)	AVE (≥ .5)	AVE and Squared Correlation							
			SerU1	SerU2	Satisf B	OBU Fa	NaNo	SubsP	Want FT	
ServU1	0.69	0.53	<b>0.53</b>							
ServU2	0.77	0.53	0.47	<b>0.53</b>						
SatisfB	0.90	0.61	0.10	0.00	<b>0.61</b>					
OBUFa	0.95	0.82	0.17	0.07	0.01	<b>0.82</b>				
NaNo	0.79	0.66	0.23	0.13	0.01	0.06	<b>0.66</b>			
SubsP	0.94	0.88	0.15	0.11	0.01	0.05	0.18	<b>0.88</b>		
WantFT	0.90	0.68	0.30	0.12	0.00	0.05	0.15	0.02	<b>0.68</b>	

*Note:* Diagonal elements (in bold) are average variance extracted and the other entries in the part of the table are squared correlations.

Table 4.9 shows the results for the construct reliability, convergent validity and discriminant validity of the measurement model for Felt Want. The construct reliability values are very high, 0.77 and above ( $> 0.7$ ) except for SevU 1 which is 0.69 slightly less than the required value of 0.7. This shows that all the items of the construct represent the same latent construct. The AVE for all the constructs is 0.53 and above which is higher than the minimum requirement of 0.5. Thus the items indicating each of the constructs share a high proportion of variance in common, therefore suggesting greater convergent validity. The Average Variance Extracted for each of the constructs is higher than the square of the correlation estimates between each of these constructs and other constructs. This confirms that there is adequate discriminant validity among the dimensions of Felt Want. Hence an evidence is provided that the factors influencing Felt Want are unique and each of them capture some phenomena which is not captured by other factors.

Table 4.10

*Fit Indices of the Measurement Model for Felt Want for the users*

Fit Index	CMIN /DF	GFI	AGFI	RMSEA	NFI	CFI
Acceptable values	<5.00	0 to 1, close to 1 shows better Fit	0 to 1, close to 1 shows better Fit	<0.08	0 to 1, close to 1 shows better Fit	>0.9
Model Fit Scores	2.443	0.909	0.880	0.057	0.924	0.953

Table 4.10 shows that the fit indices for the measurement model for Felt Want is within the acceptable range. This indicates that the overall scale has a good construct validity.

### **Felt Want for Internet banking for the Non Users**

#### **A. EFA of the items of the dimensions of Felt Want for the Non Users.**

For the items of Felt want and its dimensions for the non users, the value of KMO measure of sampling adequacy is 0.876 ( $> 0.5$ ) thus indicating a high degree of sampling adequacy. The Bartlett's Test of Sphericity was significant (9689.045, df 561, P 0.000) and indicates the appropriateness of the data for factor analysis.

As indicated in Appendix H the Exploratory Factor Analysis (EFA) for all the dimensions of Felt Want showed that all the items of services felt to be required, online banking use by family, satisfaction with branch banking and Felt Want stood as one factor respectively, whereas 4 items of the use of substitute products for banking converged into 2 dimensions and 2 items of nature and number of bank transactions converged into one component.

(iii) CFA for the dimensions of Felt Want for the non users of Internet banking.

### 1. Services felt to be required

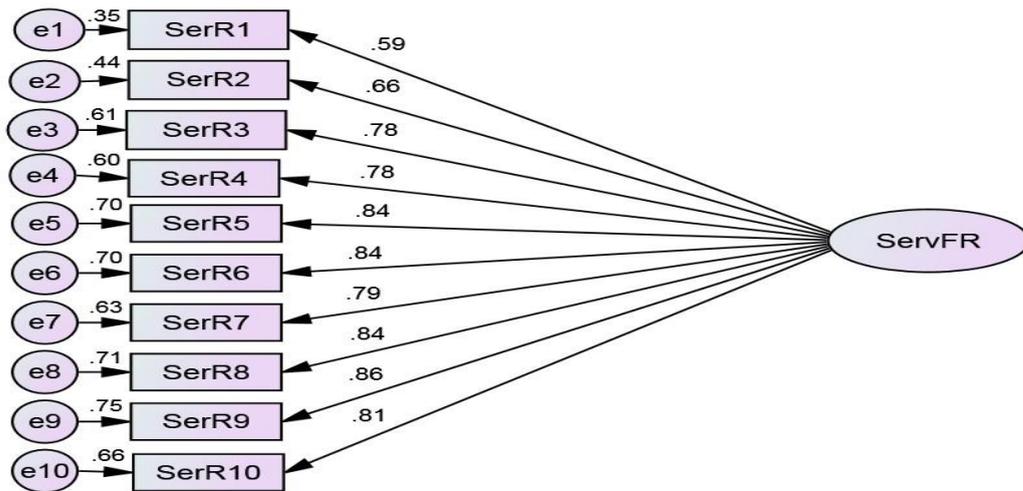


Figure 4.8. CFA Model of services felt to be required.

Services felt to be required was understood to be one of the dimensions of Felt want. From the 10 items measuring the Services felt to be required, 2 items SerR1 “View the account statements for balance and banking transactions information” and SerR2 “Download the Account history” having a factor loading less than 0.7 have been deleted. The remaining 8 items with other details are given in the following table.

Table 4.11

*Description of items for services felt required for the non users.*

Item code	Description	Factor loading
SerR3	Download application forms, deposit slips, interest certificate etc.	0.78
SerR4	Make online payments towards utility Services (telephone, mobile phone, electricity, DTH etc.)	0.78
SerR5	Payment of Insurance premiums, Purchase of insurance policies.	0.84
SerR6	Fund Transfer.	0.84
SerR7	Payment for online reservations (hotels, cinema tickets, travel tickets).	0.79

SerR8	Making Fixed Deposits and Recurring Deposits.	0.84
SerR9	Online request for cheque book, demand draft	0.86
SerR10	Update online KYC details, Aadhar card number, PAN number, phone number, address etc..	0.81

The average factor loading is 0.817, AVE is 0.58 and Cronbach alpha is 0.941. As shown in table 4.11 convergent validity is proved by the factor loadings of all the items of the construct being above 0.7 and the average Variance Extracted for the construct being 0.58 ( $> 0.5$ ). Cronbach's Alpha of 0.941 ( $> 0.7$ ) provides evidence of good construct reliability.

## 2. Online banking use by family.

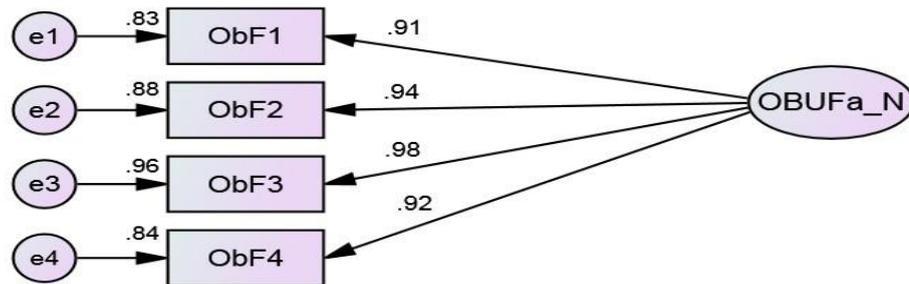


Figure 4.9 CFA model for online banking use by family for the non users.

All the 4 items measuring online banking use by family had a very high factor loading of 0.91 and above and hence were retained.

Table 4.12

*Description of items for online banking use by family for the non users.*

Item code	Description	Factor loading
ObF1	The utility bills are paid by other members of my family using internet banking.	0.91
ObF2	Fund transfers are performed by other members of my family using internet banking.	0.94
ObF3	Banking transactions are performed by my family members	0.98

	using internet banking	
ObF4	Other members of my family use internet banking.	0.92

The Average factor loading is 0.937, AVE is 0.877 and Cronbach alpha is 0.966. As indicated in table 4.12 all items load significantly with a factor loading of 0.91 and above. Thus evidence of convergent validity is provided for online banking use by family by all factor loadings being statistically significant ( $> 0.7$ ) and AVE being greater than 0.5. The cronbach's alpha of 0.966 ( $> 0.7$ ) shows high construct reliability.

### 3. Satisfaction with branch banking.

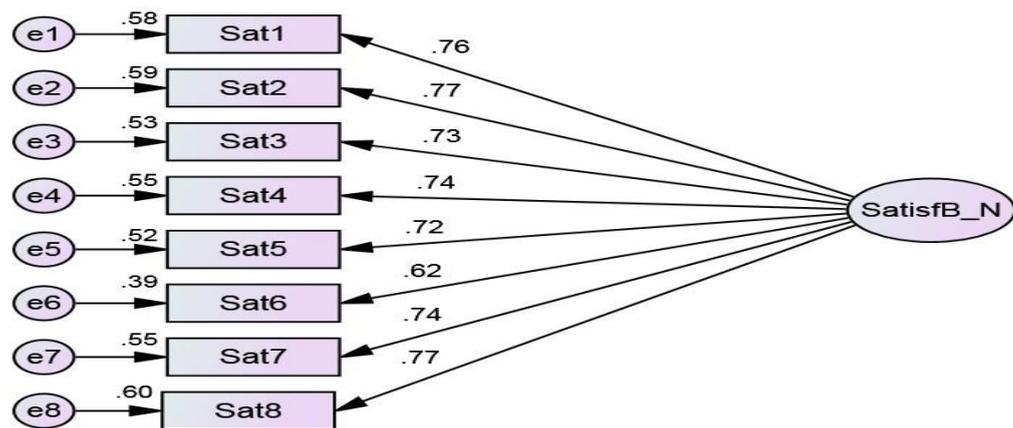


Figure 4.10 CFA model for satisfaction with branch banking for the non users.

The above 8 items relate to satisfaction with Branch banking and are intended to evaluate the actual performance of branch banking in meeting the goals and expectations of the bank customers. The item Sat6 “I feel happy there is no risk involved in branch banking” loading less than 0.7 was removed. The remaining items retained are shown in the following table.

Table 4.13

*Description of items for satisfaction with branch banking for the non users.*

Item code	Description of the item	Factor loading
Sat1	I feel satisfied with the face-to-face interaction with the bank officials.	0.76
Sat 2	I am satisfied with the ease to approach the bank officials at the branch.	0.77
Sat 3	I am happy about the advice provided by the bank officials at the branch.	0.73
Sat 4	I am happy with the performance of branch banking.	0.74
Sat 5	I feel satisfied with the convenience of Branch banking.	0.72
Sat 7	I am happy I can manage my Banking transactions with Branch Banking.	0.74
Sat 8	I am satisfied with branch banking.	0.77

The Average factor loading is 0.747, AVE is 0.56 and Cronbach alpha is 0.898. Also table 4.13 shows that all items load significantly with a factor loading of 0.72 and above. Hence evidence of convergent validity is provided by all factor loadings being statistically significant ( $> 0.7$ ) and the AVE being greater ( $> 0.5$ ). The cronbach's alpha of 0.898 ( $> 0.7$ ) shows a high construct reliability.

#### 4. Use of substitute products for banking.

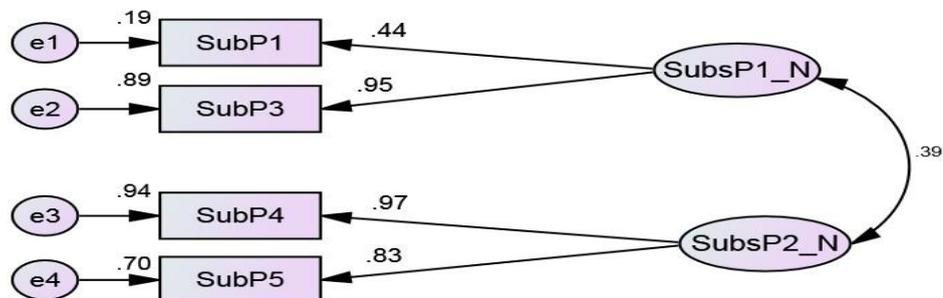


Figure 4.11 CFA Model for use of substitute products for banking for the non users.

EFA of the 5 items relating to the use of substitute products for banking showed that item SubP2 “I make payments using Credit Card” had no loading. The other 4 converged into 2 components, with SubP1 “I perform my banking transactions using ATM” and SubP2 “I make payments using Debit Card” forming one component which was not considered since SubP1 had a very low factor loading of 0.44 (< 0.7) and the cronbach’s Alpha of 0.357 (< 0.7) also showed that this component could not be taken. The item description of the other factor with 2 items Sub4 and Sub5 is as follows:

Table 4.14

*Description of items for use of substitute products for banking for the non users.*

Item code	Description	Factor loading
SubP4	I use Mobile App to make payments and to transfer funds.	0.97
SubP5	I perform my banking transactions using Mobile Banking.	0.83

The Average factor loading is 0.9, AVE is 0.82, Cronbach alpha is 0.894 and the factor loading of the items is very high, 0.83 and above thus indicating that the construct has a good convergent validity and a good construct reliability.

### **5. Nature and number of bank Transactions.**

EFA of the 3 items relating to Nature and number of bank Transactions showed that item1 “I perform most of my transactions on cashless basis (using debit card, credit card, cheque, fund transfers, etc.)” had no loading and hence was removed. Thus the remaining 2 items formed one component, item2 “I perform a large number of bank transactions in a month” and item3 “I deal with huge amount of money in banking transactions”. As there were only 2 items CFA could not be done and this dimension

was directly included in the Measurement model. The Cronbach's Alpha for the 2 item component was 0.818 ( $> 0.7$ ) which showed that the dimension was reliable.

### 6. Felt Want

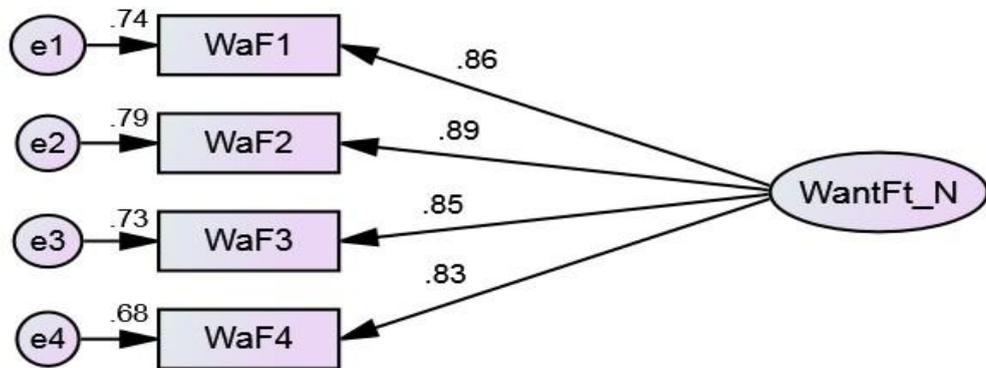


Figure 4: Path diagram for Felt Want for internet banking for the non users.

All the 4 items measuring felt want for online banking had a very high loading of 0.83 and above and hence were retained. The description of the items is given in the following table.

Table 4.15

*Description of items of Felt Want for internet banking for the NonUsers.*

Item code	Description	Factor loading
WaF1	I feel Internet Banking is useful for me to perform my banking jobs.	0.86
WaF2	I think Internet banking is significant for me.	0.89
WaF3	I feel internet Banking will solve my banking requirements.	0.85
WaF4	I would want to use internet banking.	0.83

The Average factor loading is 0.857, AVE is 0.736 and the factor loadings are high (0.83 and above), thus indicating that the construct Felt Want has good convergent

validity. The Cronbach's Alpha is 0.916 ( $> 0.7$ ) indicating that the construct reliability for all the 4 items is also very high, meaning that all the 4 items consistently represent the same latent construct i.e. Felt Want.

### Dimensions of Felt Want.

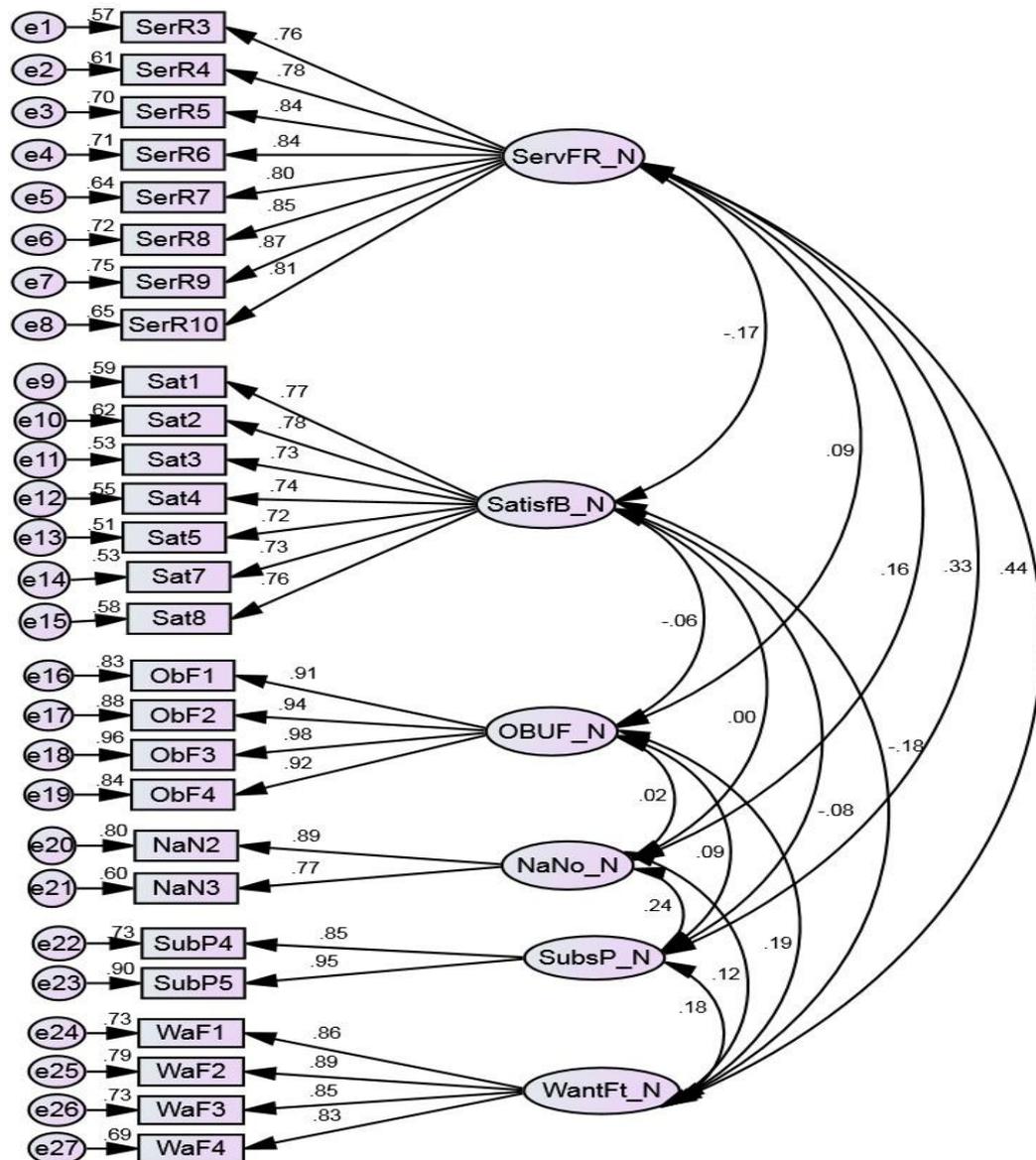


Figure 4.13. Measurement model for Felt want for the non users.

Table 4.16

*Convergent and Divergent validity of the dimensions of Felt Want for the non users*

Construct	CR ( $\geq .7$ )	AVE ( $\geq .5$ )	AVE and Squared Correlation					
			ServFR	SatisfB	OBUFa	NaNo	SubsP	WantFT
ServFR	0.94	0.67	<b>0.67</b>					
SatisfB	0.90	0.56	0.02	<b>0.56</b>				
OBUFa	0.97	0.88	0.01	0.00	<b>0.88</b>			
NaNo	0.82	0.69	0.02	0.00	0.00	<b>0.69</b>		
SubsP	0.90	0.81	0.10	0.01	0.01	0.05	<b>0.81</b>	
WantFT	0.92	0.74	0.19	0.03	0.03	0.01	0.03	<b>0.74</b>

*Note:* Diagonal elements (in bold) are average variance extracted and the other entries in the part of the table are squared correlations.

Table 4.16 shows the results for the construct reliability, convergent validity and discriminant validity of the measurement model for Felt Want. The construct reliability values are very high, 0.82 and above which shows that all the items of the construct represent the same latent construct. The AVE for all the constructs is 0.56 and above which is higher than the minimum requirement of 0.5. Thus the items indicating each of the constructs of Felt Want for internet banking share a high proportion of variance in common, therefore suggesting greater convergent validity. The Average Variance Extracted for each of the constructs is higher than the square of the correlation estimates between each of these constructs and other constructs. This confirms that there is adequate discriminant validity (Hair et al., 2017) among the dimensions of Felt Want. Hence it is evident that the factors influencing Felt Want are unique and each of them capture some phenomena which is not captured by other factors.

Table 4.17

*Fit Indices of the Measurement Model for Felt Want for the non users.*

Fit Index	CMIN /DF	GFI	AGFI	RMSEA	NFI	CFI
Acceptable values	<5.00	0 to1, close to 1 shows better Fit	0 to 1, close to 1 shows better Fit	<0.08	0 to 1, close to 1 shows better Fit	>0.9
Model Fit Scores	2.549	0.868	0.838	0.062	0.909	0.942

Table 4.17 shows the output of the confirmatory factor analysis. The fit indices are within the acceptable range. It indicates that the overall scale had a good construct validity.

**(v) CFA of perceived benefits and perceived risk for the users.**

**A.2 EFA of the items of Perceived Benefits for the Users of Internet banking.**

The values of KMO measure of sampling adequacy for the items of Perceived Benefits for the Users is very high 0.927 (>0.5) indicating a high degree of sampling adequacy. The Bartlett's test of Sphericity showed significant results (3933.697, df 120, P 0.000) indicating the appropriateness of the data for factor analysis.

EFA was conducted on the 16 items of perceived benefits (item 3 and item 12 removed on account of high Kurtosis). Tests were run in order to get a clear matrix. 3 items having no loading and cross loading were deleted. The items removed on account of no loading and cross loading are PB4 "I think that learning to use internet banking is easy for me", PB16 "I think by using internet banking I can have a control over my bank Account" and PB17 "I feel that Internet banking saves time in performing the banking transactions". The final EFA solution consisted of 13 items loaded into 2 components with 5 items and 8 items respectively. The 2 components are named as PBConv (perceived benefit of convenience) and PBUserF (perceived benefit user friendliness). The Exploratory Factor

Analysis (EFA) of the items of perceived benefits for the users is attached at Appendix I.

### B. CFA of dimensions of Perceived Benefits for the Users of Internet banking.

The Confirmatory factor Analysis (CFA) of the dimensions of Perceived Benefits was determined for the users of internet banking.

#### 1. Perceived Benefits for the Users of internet banking.

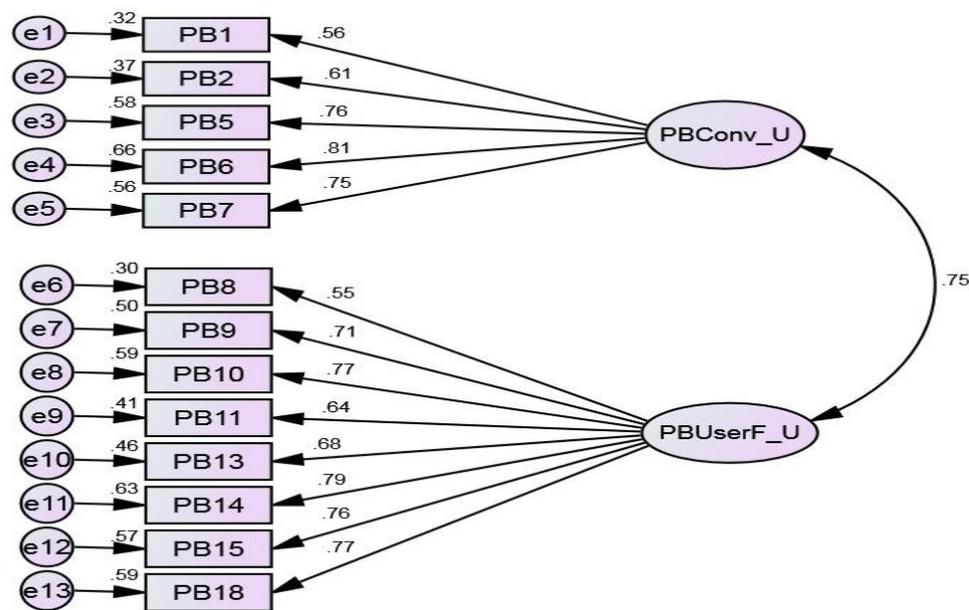


Figure 4.14. CFA of perceived Benefits for the Users

As shown in the figure 4.14, 2 items PB1 “I feel Internet banking facilitates transactions at any time.” and PB2 “I feel Internet banking facilitates transactions from any place.” having a standardised factor loading less than 0.7 have been deleted from the 1<sup>st</sup> component named PBConv\_U (perceived benefit of convenience). The remaining 3 items have been retained from this component. From the other component PBUserF\_U (perceived benefit user friendliness) 3 items having factor loading less than 0.7 have been removed. The items are PB8 “I feel the internet charges for using Online banking are negligible”, PB11 “I feel Internet banking facilitates Cashless transactions” and PB13 “Overall I feel it is less costly to do banking Online”. The rest 5 items have been retained. The details of the 8 items of perceived benefits selected for further analysis are given in

the following table.

Table 4.18

*Description of items for perceived benefits for the Users*

Item code	Description of the items	Factor loading
<b>PBConv_U (perceived benefit of convenience)</b>		
PB5.	I feel by using Internet Banking I can perform most of my banking transactions on my own.	0.76
PB6.	I think internet banking enables easy access to my bank Account.	0.81
PB7.	Internet banking enables keeping a track of my bank account transactions without visiting the bank.	0.75
<b>PBUserF_U (perceived benefit user friendly)</b>		
PB9.	I feel Internet Banking is user friendly.	0.71
PB10.	I feel internet Banking is an efficient system.	0.77
PB14.	It is easy for me to gain expertise at the use of the Internet Banking services.	0.79
PB15.	I feel by using Internet Banking my banking transactions can be performed accurately.	0.76
PB18.	I think that it is easy to use internet banking to accomplish my banking transactions.	0.77

For PBConv\_U the Average loading is 0.773, AVE is 0.6 and Cronbach alpha is 0.823.

For PBUserF\_U the Average loading is 0.76, AVE is 0.576 and Cronbach alpha is 0.874.

As shown in table 4.18 the factor loadings of all the items accepted for the constructs are above 0.7 and the average Variance Extracted for the constructs is 0.60 and 0.576 respectively which is higher than 0.5, thus convergent validity is proved for the factors Perceived Benefit of Convenience and Perceived benefit of user friendliness. The Cronbach's Alpha for both the components of perceived benefits is 0.823 and 0.874 respectively, which is higher than 0.7 thus providing evidence of good construct validity.

## **2. Perceived Risk for the Users of internet banking.**

### **A.2 EFA of the items of Perceived Risks for the Users of Internet banking.**

The values of KMO measure of sampling adequacy for the items of Perceived Risks for the Users is very high 0.930 ( $>0.5$ ) indicating a high degree of sampling adequacy. The Bartlett's test of Sphericity showed significant results (5541.672, df 171, P 0.000) indicating the appropriateness of the data for factor analysis.

EFA was conducted for 19 items of perceived risk. Tests were run in order to get a clear matrix for the items of perceived risk. 4 items having no loading and cross loading were deleted. The items removed on account of no loading and cross loading are PR1 "I am worried that my online banking Account may be hacked", PR2 "I am worried that other people may be able to access the details of my online banking account", PR11 "I am concerned about the financial loss that could be caused due to insufficient security measures taken by the Bank" and PR14 "I am afraid I may make a wrong entry while using internet banking". The final EFA solution consisted of 15 items loaded into 3 factors with 5 items, 6 items and 4 items respectively. The 3 components are named as PSecFR (Perceived security and financial risk), PPerR (Perceived performance risk) and PTecR ( Perceived technical risk). The Exploratory Factor Analysis (EFA) of the items of perceived Risk is attached at Appendix I.

### Perceived Risks for the Users

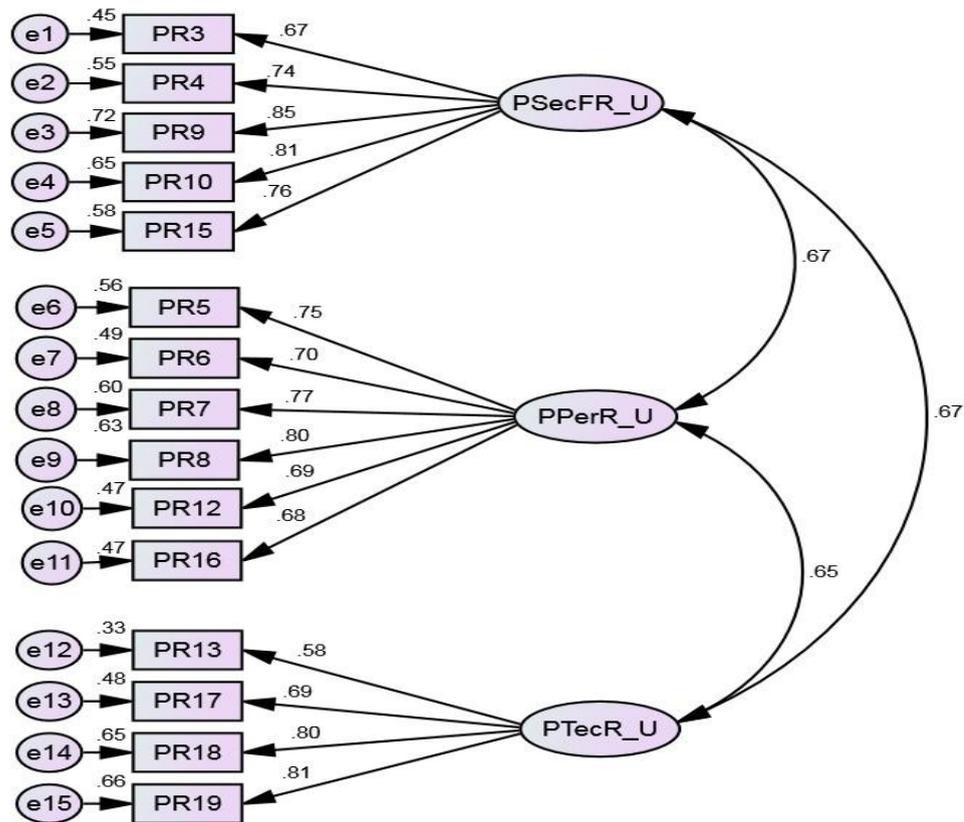


Figure 4.15. CFA Model of perceived risk for the Users.

In the first component named perceived security and financial risk, 1 item PR3 “During fund transfers and payments, I am afraid that I will lose money due to a wrong entry” which was having a factor loading less than 0.7 was removed. The remaining 4 items have been retained. From the second component named perceived performance risk, 2 items having a factor loading less than 0.7 are removed. These items are PR12 “I would have to spend a lot of time searching for the required bank services” and PR16 “A lot of time would be required to complete the Online Banking transaction”. Also PR6 “A lot of time would be required to log into the online banking Account” having borderline loading of 0.70 has been removed in order to have same items for the component as that for the non users in order to facilitate comparison between the perceived risks for the users and the non users of internet banking. From the 3rd component named perceived technical risk two items PR13 “I am afraid I may forget the password and hence shall not

be able to use the Online Banking Service” and PR17 “In case I forget the online banking password much time would be required to get it activated” having factor loading less than 0.7 has been removed. The 9 items of perceived risk considered for further analysis are shown in table 4.19

Table 4.19

*Description of items for perceived risks for the Users*

Item code	Description	Factor loading
<b>PerSecFR_U</b> ( perceived security and financial risk component)		
<b>PR4</b>	I am concerned about the possible financial loss that can be caused by my Account details being leaked.	0.74
<b>PR9</b>	I am worried someone may misuse the information in my online Banking Account.	0.85
<b>PR10</b>	I am afraid of the possible financial loss that could be caused by virus attacks.	0.81
<b>PR15</b>	I am afraid my bank account information may not be protected in Online Banking.	0.76
<b>PPer_U</b> ( Perceived performance risk component)		
<b>PR5</b>	A lot of time is required to learn how to use online banking.	0.75
<b>PR7</b>	I fear my knowledge of using internet Banking is inadequate.	0.77
<b>PR8</b>	I fear I may not be able to successfully perform the online banking transactions.	0.80
<b>PTechR_U</b> ( Perceived Technical risk component )		
<b>PR18</b>	I am afraid I may not be able to use the Online Banking service due to the Lack of Internet connectivity.	0.80
<b>PR19</b>	I am afraid I may not be able to use the Online Banking service due to the failure of the Bank’s server.	0.81

For PerSecFR\_N the Average loading is 0.79, AVE is 0.625 and Cronbach alpha is 0.867.

For PPer\_N the Average loading is 0.77, AVE is 0.597 and Cronbach alpha is 0.835.

For PTechR\_N the Average loading is 0.805, AVE is 0.655 and Cronbach alpha is 0.857. Table 4.19 shows that the factor loadings of all the items accepted for the constructs are above 0.7 and the average Variance Extracted for the constructs are 0.597 and above which is higher than 0.5 thus convergent validity is proved for the 3 components of perceived risk. The Cronbach's Alpha for the 3 components of perceived risk is 0.867, 0.835 and 0.857 respectively which is much higher than 0.7 thus providing evidence of good construct reliability.

#### 4. Factors influencing attitude for the Users

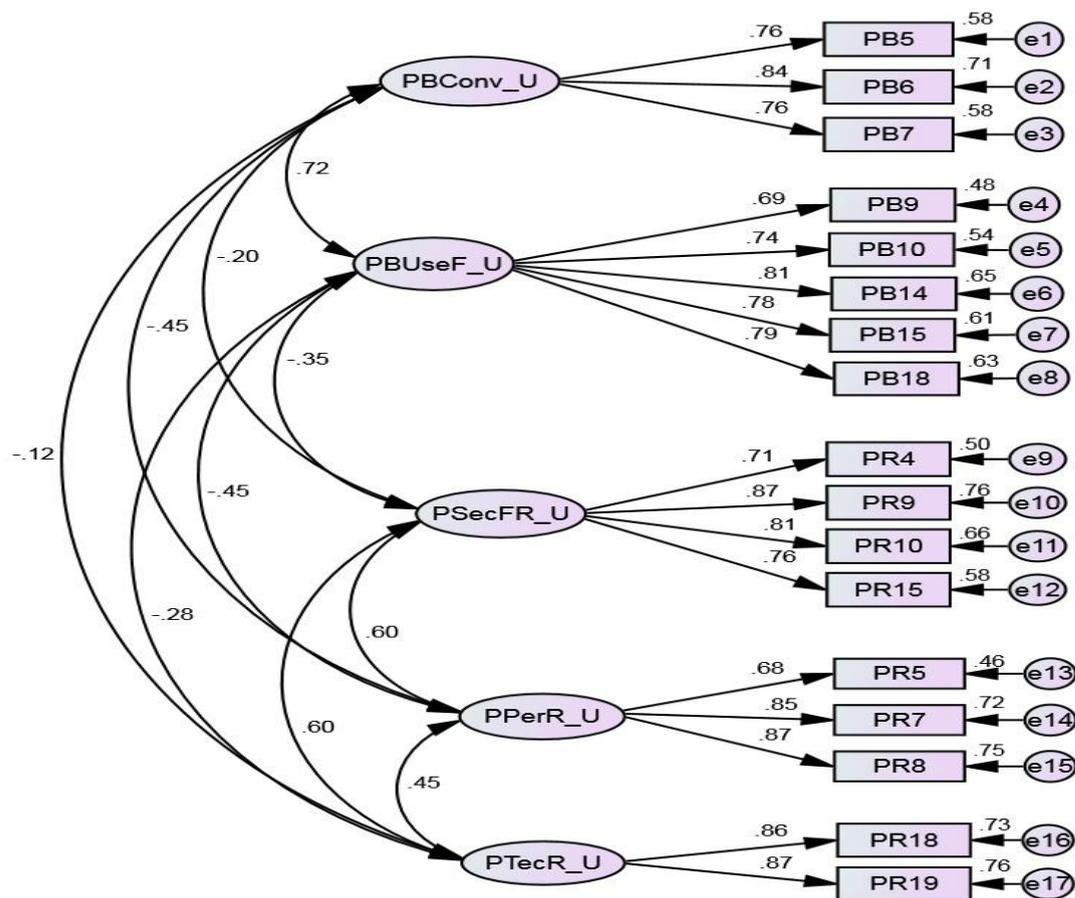


Figure 4.16 Measurement Model of attitude for the users.

Table 4.20

*Convergent and Divergent validity of the dimensions of attitude for the users*

Construct	CR ( $\geq .7$ )	AVE ( $\geq .5$ )	AVE and Squared Correlation				
			PBConv	PBUseF	PSecFR	PPerR	PTecR
PBConv	0.83	0.62	<b>0.62</b>				
PBUseF	0.87	0.58	0.51	<b>0.58</b>			
PSecFR	0.87	0.58	0.04	0.12	<b>0.58</b>		
PPerR	0.85	0.64	0.20	0.20	0.36	<b>0.64</b>	
PTecR	0.86	0.75	0.01	0.07	0.36	0.20	<b>0.75</b>

*Note:* Diagonal elements (in bold) are average variance extracted and the other entries in the part of the table are squared correlations.

As indicated in Table 4.21, the values of AVE for all the factors influencing attitude are more than or equal to 0.58 ( $> 0.5$ ). This indicates that the measurement model is of a good convergent validity. The construct reliability (CR) for all the factors is also very high, 0.83 and higher ( $> 0.7$ ). High construct reliability indicates that internal consistency exists among the items of each of the constructs.

The AVE for all the factors is also much higher than the squared correlation coefficients between the factor and all other corresponding factors indicating that discriminant validity is supported for all the dimensions of attitude for the users. This further means that the 5 dimensions of attitude are distinct from each other.

Table 4.21

*Fit Indices of the Measurement Model for attitude for the users.*

Fit Index	CMIN /DF	GFI	AGFI	RMSEA	NFI	CFI
Acceptable values	$<5.00$	0 to 1, close to 1 shows better Fit	0 to 1, close to 1 shows better Fit	$<0.08$	0 to 1, close to 1 shows better Fit	$>0.9$

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Model	Fit	2.148	0.942	0.919	0.051	0.945	0.969
Scores							

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Table 4.21 shows the output of the confirmatory factor analysis. The fit indices are within the acceptable range. It indicates that the overall scale had a good construct validity.

### **3. Factors influencing Attitude for the non users.**

#### **A.2 EFA of the items of Perceived Benefits for the Non Users of Internet banking.**

The values of KMO measure of sampling adequacy for the items of Perceived Benefits for the non users is very high 0.941 (>0.5) indicating a high degree of sampling adequacy. The Bartlett's test of Sphericity showed significant results (3659.426, df 153, P 0.000) indicating that the data is appropriate for factor analysis.

EFA was conducted on 16 items of perceived benefits (item 3 and item 12 removed on account of high Kurtosis). Tests were run in order to get a clear matrix. 2 items had no loading and had to be deleted. The items removed on account of no loading are PB11 "I feel Internet banking facilitates Cashless transactions" and PB17 "I feel that Internet banking saves time in performing the banking transactions". The final EFA solution consisted of 14 items loaded into 2 components with 5 items and 9 items respectively. The 2 components are named as PBConv (perceived benefit of convenience) and PBUserF (perceived benefit of user friendliness). The Exploratory Factor Analysis (EFA) of the items of perceived benefits is attached at Appendix J.

#### **B CFA of the dimensions of attitude for the Non Users.**

##### CFA of Perceived Benefits for the Non Users of Internet Banking.

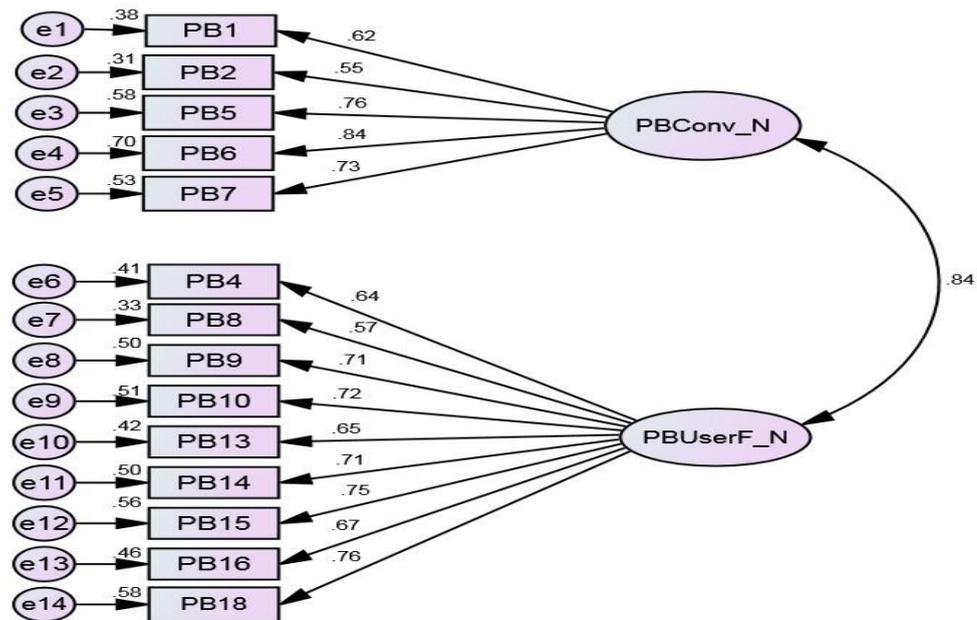


Figure 4.17. CFA of perceived Benefits for the Non Users.

As shown in the figure 4.17, 2 items PB1 “I feel Internet banking facilitates transactions at any time.” and PB2 “I feel Internet banking facilitates transactions from any place.” having a factor loading less than 0.7 have been deleted from the 1<sup>st</sup> component named PBConv\_N (perceived benefit of convenience). The remaining 3 items have been retained from this component. From the other component PBUserF\_N (perceived benefit user friendliness) 4 items having factor loading less than 0.7 have been removed. The items are PB4 “I think that learning to use internet banking is easy for me”, PB8 “I feel the internet charges for using Online banking are negligible”, PB13 “Overall I feel it is less costly to do banking Online” and PB16 “I think by using internet banking I can have a control over my bank Account”. The other 5 items have been retained. The 8 items of perceived benefits selected for further analysis are given in the following table.

Table 4.22

*Description of items for perceived benefits for the Non Users*

Item code	Description	Factor loading
<b>PBConv_N ( perceived benefit of convenience)</b>		

PB5	I feel by using Internet Banking I can perform most of my banking transactions on my own.	0.76
PB6.	I think internet banking enables easy access to my bank Account.	0.84
PB 7.	Internet banking enables keeping a track of my bank account transactions without visiting the bank.	0.73
<b>PBUserF_N ( perceived benefit user friendly)</b>		
PB9.	I feel Internet Banking is user friendly.	0.71
PB10.	I feel internet Banking is an efficient system.	0.72
PB14.	It is easy for me to gain expertise at the use of the Internet Banking services.	0.71
PB15.	I feel by using Internet Banking my banking transactions can be performed accurately.	0.75
PB18.	I think that it is easy to use internet banking to accomplish my banking transactions.	0.76

For PBCConv\_N the Average loading is 0.776, AVE is 0.6 and Cronbach alpha is 0.828

For PBUserF\_N the Average loading is 0.73 AVE is 0.53 and Cronbach alpha is 0.854

As shown in table 4.23 the factor loadings of all the items accepted for the constructs are above 0.7 and the average Variance Extracted for the constructs are 0.60 and 0.53 respectively which is higher than 0.5, thus convergent validity is proved for the dimensions of perceived benefits for the non users. The Cronbach's Alpha for both the components of perceived benefits is 0.828 and 0.854 respectively, which is higher than 0.7 thus providing evidence of good construct reliability.

#### **A. 2. EFA of the items of Perceived Risks for the Non Users of Internet banking.**

KMO measure of sampling adequacy for the items of Perceived Risk for the Non users is very high 0.909 (>0.5), indicating a high degree of sampling adequacy. The

Bartlett's test of Sphericity showed significant results (3946.657, df 171, P 0.000) and indicates that the data is appropriate for factor analysis

EFA was conducted on the 19 items of perceived risk. Tests were run in order to get a clear matrix for the items of perceived risk. 4 items PR2, PR6, PR12 and PR14 with no loading and cross loading were removed. The description of the items removed is; PR2 "I am worried that other people may be able to access the details of my online banking account", PR6 "A lot of time would be required to log into the online banking Account", PR12 "I would have to spend a lot of time searching for the required bank services" and PR14 "I am afraid I may make a wrong entry while using internet banking".

The final EFA solution consisted of 15 items loaded into 3 factors with 7 items, 5 items and 3 items respectively. The 3 components are named as PSecFR (Perceived security and financial risk), PPerR (Perceived performance risk) and PTecR (Perceived technical risk). The Exploratory Factor Analysis (EFA) of the items of perceived Risk is attached at Appendix J.

Perceived Risk by the Non Users of internet banking.

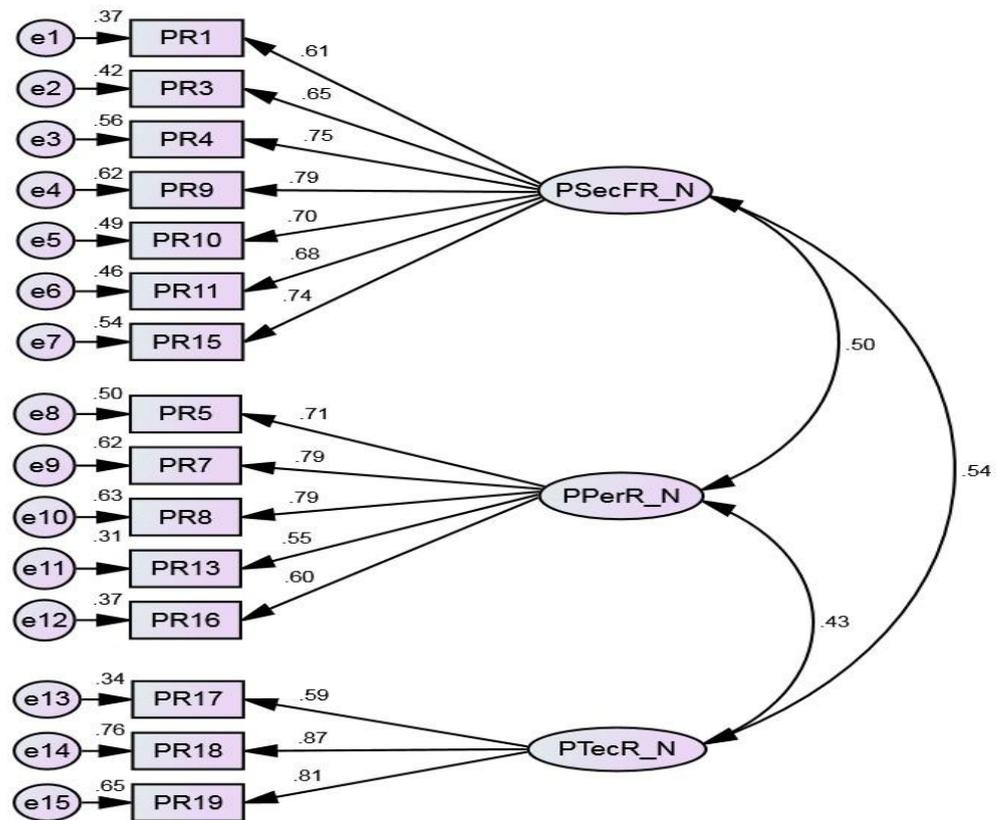


Figure 4.18. CFA Model of perceived risk for the Non users.

In the first component named perceived security and financial risk the 3 items which were removed having a factor loading less than 0.7 are; PR1 “I am worried that my online banking Account may be hacked”, PR3 “During fund transfers and payments, I am afraid that I will lose money due to a wrong entry” and PR11 “I am concerned about the financial loss that could be caused due to insufficient security measures taken by the Bank”. The remaining 4 items have been retained from the 1<sup>st</sup> component. From the second component named perceived performance risk 2 items which were removed having a factor loading less than 0.7 are; PR13 “I am afraid I may forget the password and hence shall not be able to use the Online Banking Service” and PR16 “A lot of time would be required to complete the Online Banking transaction”. Thus 3 items were retained from the 2nd component. From the 3rd

component named perceived technical risk one item PR17 “In case I forget the online banking password much time would be required to get it activated” having factor loading less than 0.7 has been removed. The remaining items of perceived risk considered for further analysis are shown in table 4.23

Table 4.23

*Description of items for perceived risks for the non users*

Item No.	Description	Factor loading
<b>PerSecFR_N</b> ( perceived security and financial risk component)		
<b>PR4</b>	I am concerned about the possible financial loss that can be caused by my Account details being leaked.	0.75
<b>PR9</b>	I am worried someone may misuse the information in my online Banking Account.	0.79
<b>PR10</b>	I am afraid of the possible financial loss that could be caused by virus attacks.	0.70
<b>PR15</b>	I am afraid my bank account information may not be protected in Online Banking.	0.74
<b>PPer_N</b> ( Perceived performance risk component)		
<b>PR5</b>	A lot of time is required to learn how to use online banking.	0.71
<b>PR7</b>	I fear my knowledge of using internet Banking is inadequate.	0.79
<b>PR8</b>	I fear I may not be able to successfully perform the online banking transactions.	0.79
<b>PTechR_N</b> ( Perceived Technical risk component )		
<b>PR18</b>	I am afraid I may not be able to use the Online Banking service due to the Lack of Internet connectivity.	0.87
<b>PR19</b>	I am afraid I may not be able to use the Online Banking service due to the failure of the Bank’s server.	0.81

For PerSecFR N Average loading is 0.745, AVE is 0.55 and Cronbach alpha is 0.824.

For PPer\_N Average loading is 0.76, AVE is 0.58 and Cronbach alpha is 0.815.

For PTechR\_N Average loading is 0.84, AVE is 0.705 and Cronbach alpha is 0.832

As shown in table 4.23 the factor loadings of all the items accepted for the constructs are 0.7 and above and the average Variance Extracted for the constructs are 0.55 and above which is higher than 0.5 thus convergent validity is proved. The Cronbach's Alpha for the 3 components of perceived risk is 0.824, 0.815 and 0.832 respectively, which is much higher than 0.7 thus providing evidence of good construct validity.

Determinants of Attitude for the non users.

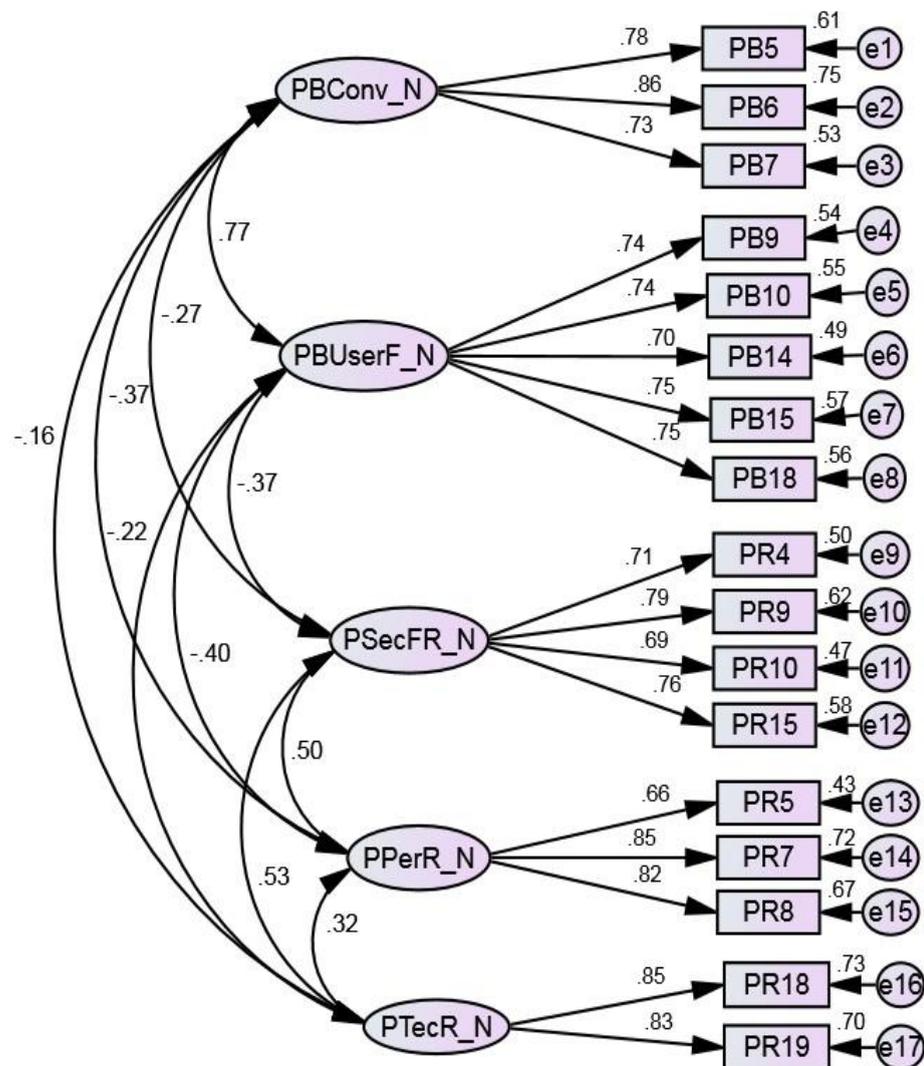


Figure 4.19. CFA Model of the factors influencing attitude.

Table 4.24

*Convergent and Divergent validity of the dimensions of attitude for the non users.*

Construct	CR ( $\geq .7$ )	AVE ( $> .5$ )	AVE and Squared Correlation				
			PBConv	PBUseF	PSecFR	PPerR	PTecR
PBConv_N	0.83	0.63	<b>0.63</b>				
PBUseF_N	0.86	0.54	0.59	<b>0.54</b>			
PSecFR_N	0.83	0.55	0.07	0.13	<b>0.55</b>		
PPerR_N	0.82	0.61	0.13	0.16	0.25	<b>0.61</b>	
PTecR_N	0.83	0.71	0.02	0.04	0.28	0.10	<b>0.71</b>

*Note:* Diagonal elements (in bold) are average variance extracted and the other entries in the part of the table are squared correlations.

As indicated in Table 4.24, the values of AVE for all the factors determining attitude are more than or equal to 0.54 ( $>0.5$ ). This indicates that the measurement model is of good convergent validity. The AVE for all the factors is also much higher than the squared correlation coefficients between that factor with all corresponding factors, indicating a good divergent validity. The correlation matrix among constructs show that they are related but distinct constructs.

The construct reliability for all the factors is also very high, 0.82 and above ( $> 0.7$ ). High construct reliability indicates that internal consistency exists, which shows that all the measures consistently represent the same latent construct.

Table 4.25

*Fit Indices of the Measurement Model for attitude for the non users.*

Fit Index	CMIN /DF	GFI	AGFI	RMSEA	NFI	CFI
Acceptable values	$<5.00$	0 to 1, close to 1 shows better Fit	0 to 1, close to 1 shows better Fit	$<0.08$	0 to 1, close to 1 shows better Fit	$>0.9$
Model Fit Scores	2.811	0.877	0.845	0.067	0.915	0.943

Table 4.25 shows the output of the confirmatory factor analysis. The fit indices were within the acceptable range. It indicates that the overall scale had good construct validity.

### B. CFA of the dimensions of intention for the Users of internet banking.

The values of KMO measure of sampling adequacy for the items of the dimensions of intention for the Users is very high, 0.933 ( $>0.5$ ), indicating a high degree of sampling adequacy. The Bartlett's test of Sphericity showed significant results (6168.962, df 171, P 0.000), indicating the appropriateness of the data for factor analysis.

The EFA of all the items relating to intention and the 3 dimensions of intention taken together showed that the items of intention, attitude, subjective norm and perceived behavioural control stood separately for their respective dimensions.

#### 1. Attitude towards internet banking.

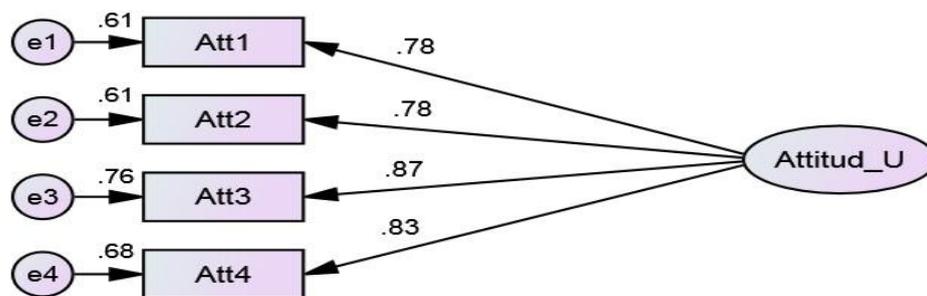


Figure 4.20 CFA of Attitude for the users.

All the items of attitude have a factor loading of 0.78 and above ( $> 0.7$ ), hence all the items are retained. The description of items is given in table 4.26.

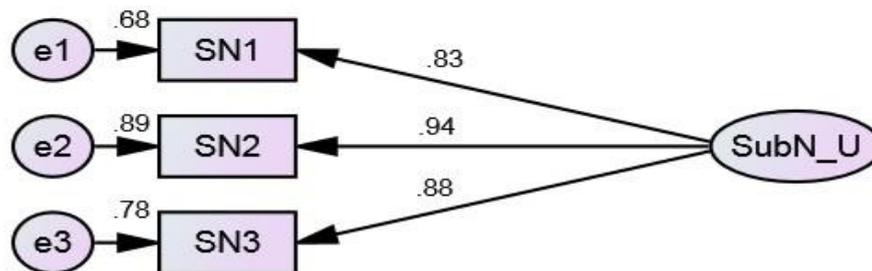
Table 4.26

*Description of items of Attitude for Users.*

Item No.	Description	Factor loading
Att1	I think that using Internet banking is a good idea.	0.78
Att2	I think that using Internet banking for financial transactions would be a wise idea.	0.78
Att3	I think that using Internet banking is pleasant.	0.87
Att4	In my opinion, it is desirable to use Internet banking.	0.83

For the items of attitude for the users, the Average factor loading is 0.815, AVE is 0.665 and Cronbach alpha is 0.886. As shown in table 4.26 the factor loadings of all the items of attitude are 0.78 and above ( $>0.7$ ) and the average Variance Extracted for the construct is 0.665 ( $> 0.5$ ) thus proving that the items have high convergent validity. This means that the scale items share a high proportion of variance in common and converge on the latent construct Attitude. The Cronbach's Alpha for attitude for the users is 0.886 which is much higher than 0.7 thus providing evidence of good construct validity.

## 2. Subjective Norms regarding the use of internet Banking



*Figure 4.21 CFA of Subjective Norms for the Users.*

The 3 items relating to Subjective Norms regarding the use of internet Banking have a factor loading of 0.83 and above ( $> 0.7$ ). Hence all the items are retained. The description of items is given in table 4.27

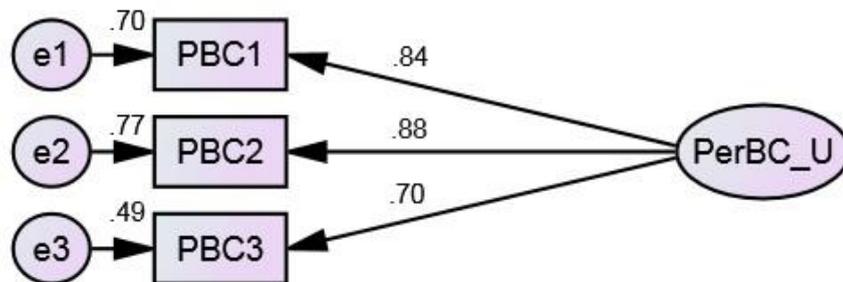
Table 4.27

*Description of items of Subjective Norms for the Users.*

Item code	Description	Factor loading
SN1	People who are important to me would think that I should use online banking.	0.83
SN2	People who influence me would think that I should use online banking	0.94
SN3	People whose opinions are valued to me would prefer that I should use online banking	0.88

For the items of Subjective norms, the Average factor loading is 0.88, AVE is 0.78 and Cronbach alpha is 0.914. The factor loadings of all the items of Subjective norms are 0.83 and above ( $> 0.7$ ) and the average Variance Extracted for the construct is 0.78 ( $> 0.5$ ) thus convergent validity is proved. The Cronbach's Alpha is 0.914 which is much higher than 0.7 thus providing evidence of good construct reliability.

### 3. Perceived Behavioural Control on the use of internet banking.



*Figure 4.22 CFA of Perceived Behavioural Control for the users.*

The 3 items relating to perceived behavioural control on the use of internet Banking have a factor loading of 0.70 and above and hence are retained. The description of items is given in table 4.28.

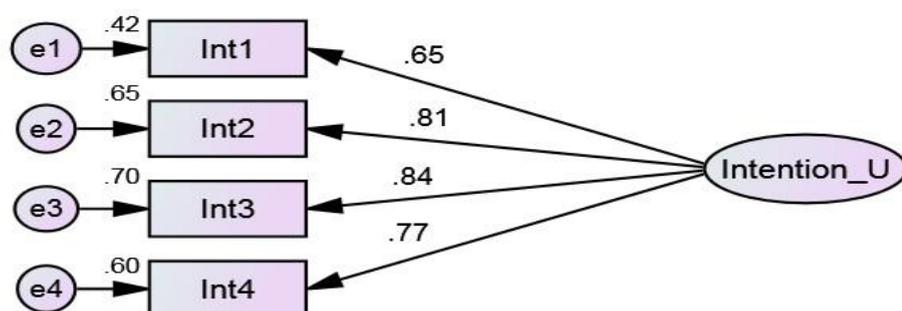
Table 4.28

*Description of items of Perceived Behavioural Control for the users.*

Item No.	Description	Factor loading
PBC1	I think that I would be able to use internet banking well for my financial transactions.	0.84
PBC2	I think that I have the resources, knowledge and ability to use internet banking.	0.88
PBC3	I think that using internet banking would be entirely within my control.	0.70

For the items of Perceived Behavioural Control for the Users, the Average loading is 0.81, AVE is 0.65 and Cronbach alpha is 0.838. The factor loadings of all the items of Perceived Behavioural Control are 0.7 and above, and the average Variance Extracted for the construct is 0.65 ( $> 0.5$ ), thus convergent validity is proved for the items of attitude for the users. The Cronbach's Alpha is 0.838 which is much higher than 0.7 thus providing evidence of good construct reliability.

#### 4. Intention to use internet banking.



*Figure 4.23 CFA of Intention for the users*

The first item Int1 “I would like to continue using internet Banking in future” has a factor loading of 0.65 ( $< 0.7$ ), hence this item has been removed. The rest of the items

having a factor loading of 0.7 and above have been retained. The description of the 3 items retained is given in table 4.29

Table 4.29

*Description of items of Intention for the users*

Item code	Description	Factor loading
Int2	I would like to use internet Banking more often in future.	0.81
Int3	I would like to use internet Banking for additional services in future.	0.84
Int4	I would like to increase my usage of internet Banking.	0.77

For the items of Intention for the users, the average loading is 0.807, AVE is 0.65 and Cronbach alpha is 0.847. The factor loadings of all the items of intention are 0.77 and above and the average Variance Extracted for the construct is 0.65 ( $> 0.5$ ) thus convergent validity is proved. The Cronbach's Alpha is 0.847 which is much higher than 0.7, thus providing evidence of good construct reliability.

### 5. Factors influencing perceived behavioural Control

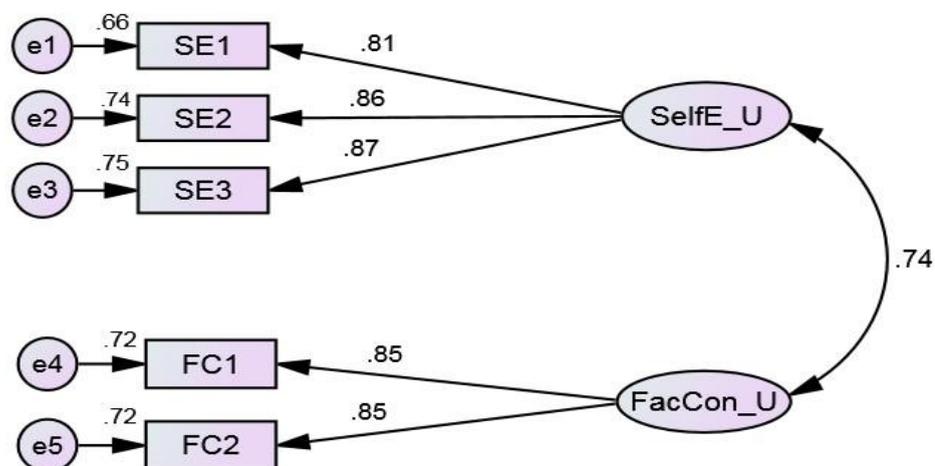


Figure 4.24 CFA for the determinants of perceived behavioural Control

Self efficacy and facilitating conditions are theoretised as influencing perceived behavioural Control. Since facilitating conditions have only 2 items and minimum 3 items are required for performing CFA, these 2 factors are taken together for performing the Confirmatory factor analysis. The factor loading of all the items is 0.81 and above ( $> 0.7$ ) and hence they are retained. The description of items is given in table 4.30

Table 4.30

*Description of items of Self Efficacy and Facilitating Conditions for the Users.*

Item code	Description	Factor loading
<b>Self Efficacy</b>		
SE1	I know enough to operate Internet banking.	0.81
SE2	I would feel comfortable using Internet banking.	0.86
SE3	I could easily operate Internet banking on my own.	0.87
<b>Facilitating Conditions</b>		
FC1	I have the required infrastructure to use online banking.	0.85
FC2	I have the required financial resources to use Internet banking.	0.85

The factor loading of the items for self efficacy and facilitating conditions is above 0.7 and the Average Variance Extracted for both the construct is 0.72 ( $> 0.5$ ). Thus convergent validity is proved for both the constructs. The Cronbach's Alpha for self efficacy and for facilitating conditions is 0.882 and 0.837 respectively and the construct reliability is 0.88 and 0.84 respectively for both the constructs which is higher than 0.7, thus providing evidence of good construct validity. Secondly the AVE for both the constructs which is 0.72 which is much higher than the square of the correlation between them which is 0.55. This indicates that

discriminant validity is supported and both the dimensions of perceived behavioural Control are different from each other.

Multi dimensional CFA of intention and the dimintions of intention.

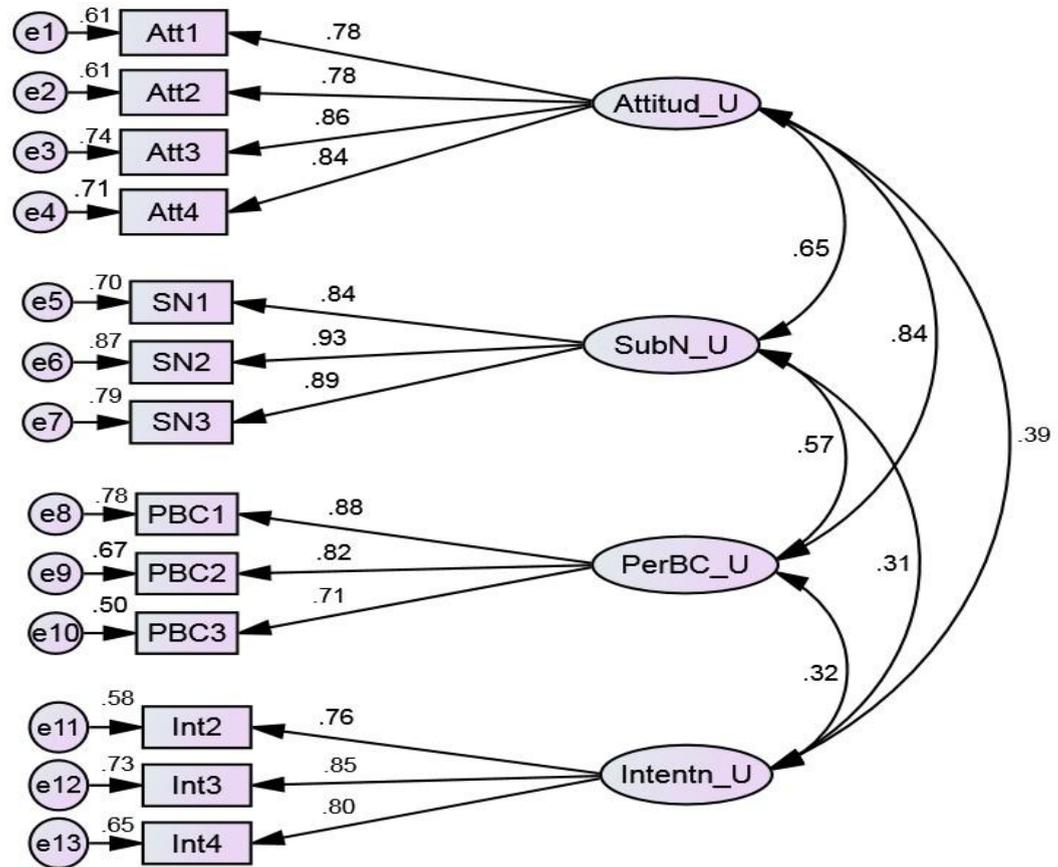


Figure 4.25 Measurement model of intention for the users.

Table 4.31

*Convergent and Divergent validity of the dimintions of intention for the users.*

Construct	CR ( $\geq .7$ )	AVE ( $\geq .5$ )	AVE and Squarred Correlation			
			Attitud	SubN	PerBC	Intentn
Attitud_U	0.89	0.67	<b>0.67</b>			
SubN_U	0.92	0.79	0.42	<b>0.79</b>		
PerBC_U	0.85	0.65	0.70	0.32	<b>0.65</b>	
Intentn_U	0.85	0.65	0.15	0.10	0.10	<b>0.65</b>

*Note:* Diagonal elements (in bold) are average variance extracted and the other entries in the part of the table are squared correlations

As indicated in the figure 4.25 and Table 4.31 the factor loading of the items are above 0.7, the values of AVE for all the factors influencing intention to adopt internet banking are 0.65 and above. This indicates that the measurement model is of a good convergent validity.

The construct reliability for all the factors is also very high, 0.85 and above. High construct reliability indicates that internal consistency exists among the items of the constructs and that all the measures (items) consistently represent the same latent construct.

Regarding the discriminant validity of the constructs, it is observed from Table 4.31 that the AVE of subjective norm and intention is higher than the squared correlations between each of these constructs and all the other 3 constructs. Hence discriminant validity is supported for subjective norm and intention. However the AVE (0.67) for attitude and the AVE (0.65) for Perceived behavioural control are less than the squared correlation (0.70) between attitude and Perceived behavioural control. Hence further analysis is done to examine the discriminant validity for these constructs.

#### Further analysis for discriminant validity

As stated above, for the users' data, the discriminant validity is not supported for attitude and Perceived behavioural control, by comparing the AVE of each of these constructs with the squared correlation between these two constructs. Hence discriminant validity was further analysed by comparing the fit of the 2 construct model with the one construct model. As stated by Hair et al. (2017) "if the fit of the two-construct model is significantly different from that of the one-construct model, then discriminant validity is supported".

Hence the Fit of the CFA Model with 2 constructs; attitude and perceive behavioural control is compared with the CFA Model with all the items of attitude and Perceived behavioural control put together as one construct as shown in the figures 4.26 and 4.27 respectively.

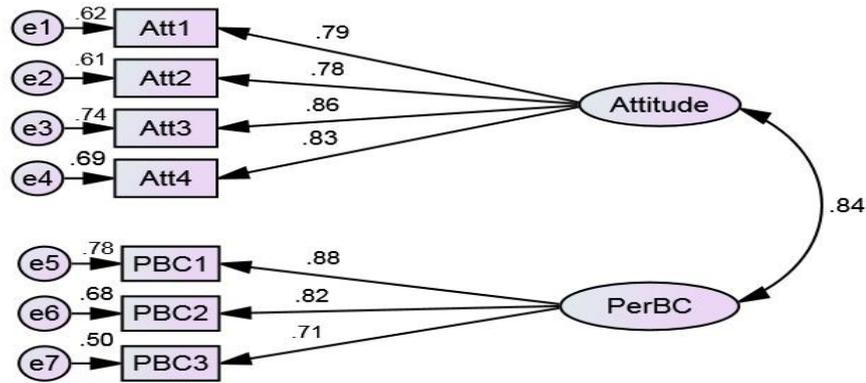


Figure 4.26 CFA model of two constructs (Attitude and PBC) for users

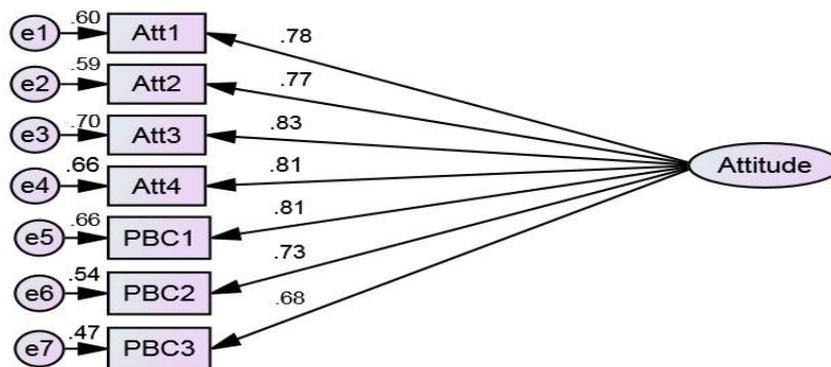


Figure 4.27 CFA model of one constructs (items of Attitude and PBC)

Table 4.32

*Fit of the one construct and two construct CFA model.*

Fit Index	CMIN/ DF	GFI	AGFI	RMSE A	NFI	CFI
Acceptable values	<5.00	0 to 1, close to 1 shows better Fit	0 to 1, close to 1 shows better Fit	<0.08	0 to 1, close to 1 shows better Fit	>0.9
Fit of the 1 construct model	11.973	0.897	0.795	0.156	0.915	0.915
Fit of the 2 construct model	4.235	0.967	0.930	0.085	0.972	0.979

It is observed in table 4.32 that the Fit of the 2 construct model is significantly different from that of the 1 construct model for the constructs Attitude and Perceived behavioural control, hence it is proved that discriminant validity is supported. It can be thus stated that the constructs Attitude and Perceived behavioural control are unique and captures different phenomena.

Table 4.33

*Fit Indices of the Measurement Model for intention for the users.*

Fit Index	CMIN/DF	GFI	AGFI	RMSEA	NFI	CFI
Acceptable values	<5.00	0 to1, close to 1 shows better Fit	0 to 1, close to 1 shows better Fit	<0.08	0 to 1, close to 1 shows better Fit	>0.9
Model Fit Scores	2.226	0.958	0.935	0.052	0.966	0.981

Table 4.33 shows the output of the confirmatory factor analysis done for intention and the dimensions of intention. The fit indices are within the acceptable range and found to be very significant. It indicates that the overall scale has good construct validity. The fit statistics are within the acceptable limits and hence the above mentioned items along with the said construct are considered for further analysis.

### **B. CFA of the dimensions of intention to use internet banking for Non users**

The values of KMO measure of sampling adequacy for the items of intention and its dimensions is very high 0.904 (> 0.5) indicating a high degree of sampling adequacy and the Bartlett's test of Sphericity showed significant results (4761.953, df 136, P 0.000). It can be thus interpreted that the data is appropriate for analysis.

The EFA of all the items of attitude, subjective norm, perceived behavioural control and intention taken together show the 3 dimensions

of intention separately with all the respective items.

### 1. Attitude towards internet banking

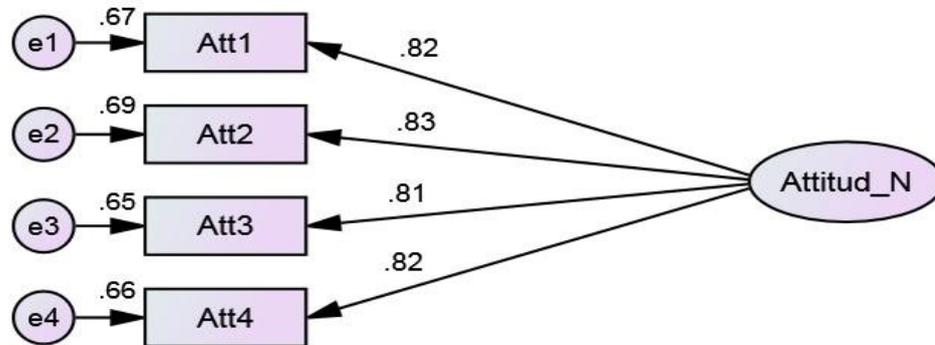


Figure 4.28 CFA Model of Attitude for the non users.

All the items of attitude have a factor loading of 0.81 and above ( $> 0.7$ ). Hence all the items are retained. The description of items is given in the following table.

Table 4.34

*Description of items of Attitude for Non Users.*

Item	Description	Factor loading
Att1	I think that using Internet banking is a good idea.	0.82
Att2	I think that using Internet banking for financial transactions would be a wise idea.	0.83
Att3	I think that using Internet banking is pleasant.	0.81
Att4	In my opinion, it is desirable to use Internet banking.	0.82

For the items of attitude towards internet banking for the non users, the average factor loading is 0.82, AVE is 0.667 and Cronbach alpha is 0.889. As shown in table 4.34 the factor loadings of all the items of attitude are 0.81 and above ( $> 0.7$ ) and the average Variance Extracted for the construct is 0.67 ( $> 0.5$ ) thus convergent validity is proved. The Cronbach's Alpha is 0.889 which is much higher than 0.7 thus providing evidence of good construct reliability.

## 2. Subjective Norms regarding the adoption and use of internet Banking

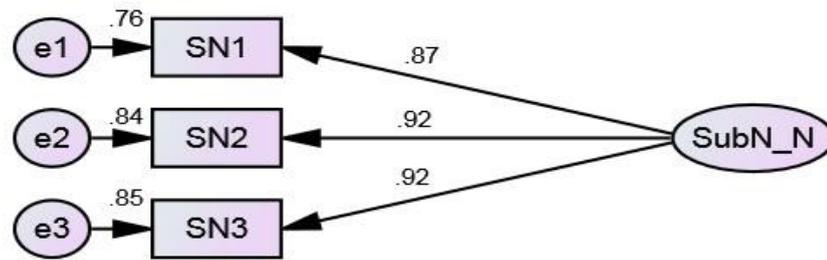


Figure 4.29 Subjective Norms for the Non Users.

The 3 items relating to Subjective Norms regarding the adoption of internet Banking have a factor loading above 0.7, hence all the items are retained. The description of items is given in the following table.

Table 4.35

*Description of items of Subjective Norms for Non Users.*

Item	Description	Factor loading
SN1	People who are important to me would think that I should use online banking.	0.87
SN2	People who influence me would think that I should use online banking	0.92
SN3	People whose opinions are valued to me would prefer that I should use online banking	0.92

For the items of subjective norms towards internet banking for the non users, the factor loadings of all the items are 0.87 and above ( $> 0.7$ ), Average loading is 0.90 and the average Variance Extracted for the construct is 0.816 ( $> 0.5$ ), thus convergent validity is proved. The Cronbach's Alpha is 0.929 which is much higher than 0.7 thus providing evidence of good construct reliability.

## 3. Perceived Behavioural Control on the use of internet banking.

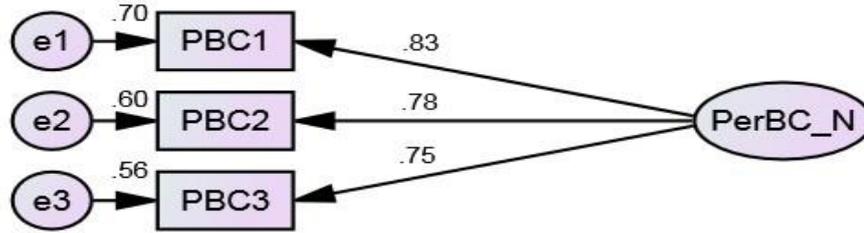


Figure 4.30 Perceived Behavioural Control for the non users.

The 3 items relating to perceived behavioural control regarding the adoption of internet Banking have a factor loading of 0.75 and above ( $> 0.7$ ), hence all the items are retained. The description of items is given in table 4.36.

Table 4.36

*Description of the items of Perceived Behavioural Control for the Non Users.*

Item No.	Description	Factor loading
PBC1	I think that I would be able to use internet banking well for my financial transactions.	0.83
PBC2	I think that I have the resources, knowledge and ability to use internet banking.	0.78
PBC3	I think that using internet banking would be entirely within my control.	0.75

For the items of perceived behavioural control on internet banking for the non users, the factor loadings of all the items are 0.75 and above, average factor loading is 0.786, AVE is 0.626 ( $> 0.5$ ) thus providing evidence of convergent validity. The Cronbach alpha is 0.827 which is higher than the acceptable level of 0.7, thus providing evidence of good construct reliability.

#### 4. Intention to adopt and use of internet banking.

The Cronbach's Alpha for the two items of Intention to use internet banking for the non users is 0.895 which is higher than 0.7 suggesting good construct reliability.

Since there are only 2 items for the construct Intention, CFA model is not developed since unidimensional CFA model requires minimum 3 items. The 2 items of intention are Int1 "I would like to start using internet banking services in future" and Int2 "I intend to use Internet banking for handling my banking transactions".

#### 5. Factors influencing perceived behavioural Control

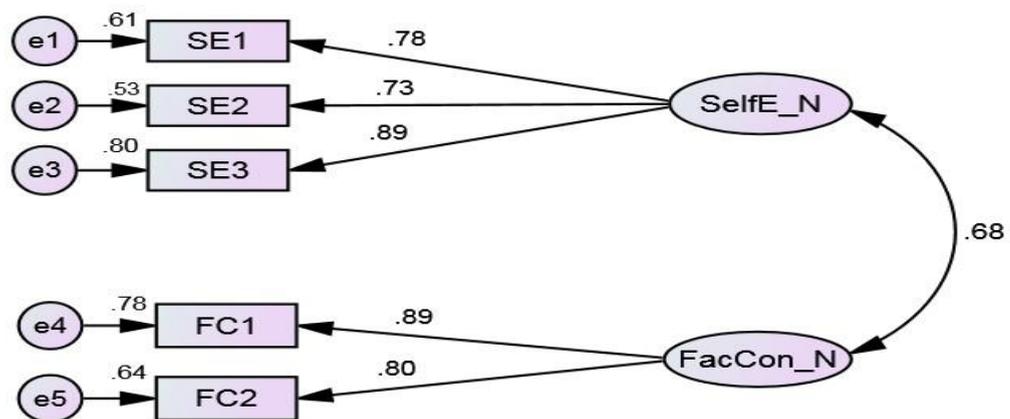


Figure 4.31 CFA for the determinants of perceived behavioural control for non users

Self efficacy and facilitating conditions are theorised as influencing perceived behavioural Control. Since facilitating conditions have only 2 items and minimum 3 items are required for CFA, these 2 factors are taken together for performing the Confirmatory factor analysis. The factor loading of all the items is 0.73 and above (> 0.7) and hence are retained. The description of items is given in table 4.37.

Table 4.37

*Description of items of Self Efficacy and Facilitating Conditions for Non Users.*

Item No.	Description	Factor loading
<b>Self Efficacy</b>		
SE1	I know enough to operate Internet banking.	0.78
SE2	I would feel comfortable using Internet banking.	0.73
SE3	I could easily operate Internet banking on my own.	0.89
<b>Facilitating Conditions</b>		
FC1	I have the required infrastructure to use online banking.	0.89
FC2	I have the required financial resources to use Internet banking.	0.80

For self efficacy, the Average factor loading is 0.80, AVE is 0.646, and Cronbach alpha is 0.838. For facilitating conditions the Average factor loading is 0.845, AVE is 0.71 and Cronbach alpha is 0.828.

The factor loading of the items for self efficacy and facilitating conditions is 0.73 and above and the average Variance Extracted for both the construct is 0.64 and 71( > 0.5). Thus convergent validity is proved for both the constructs. The values of Cronbach's Alpha for self efficacy and facilitating conditions of 0.838 and 0.828 as well as the construct reliability values of 0.84 and 0.83 respectively, for both the constructs is higher than 0.7 thus providing evidence of good construct reliability.

Secondly the AVE for both the constructs, self efficacy and facilitating conditions which is 0.64 and 0.71 respectively, is much higher than the square of the correlation between them which is 0.46. This indicates that discriminant validity is supported and that both the dimensions of perceived behavioural Control are different from each other.

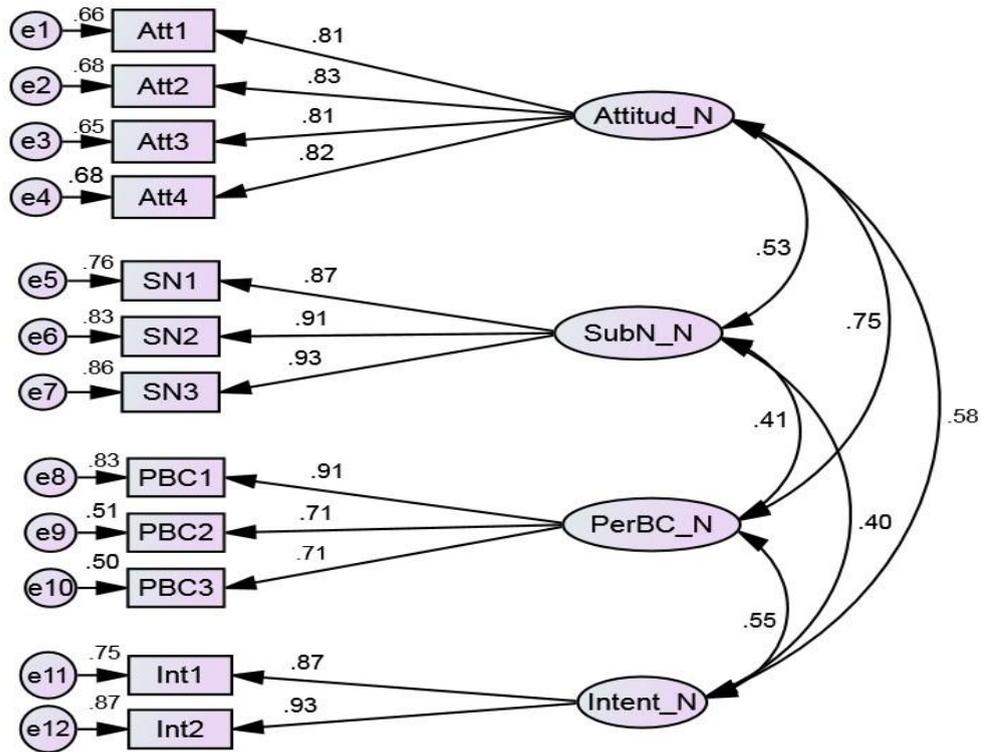


Figure 4.32 Measurement model for intention for the non users.

Table 4.38

*Convergent and Divergent validity of the dimensions of intention for the non users*

Construct	CR ( $\geq .7$ )	AVE ( $\geq .5$ )	AVE and Squared Correlation			
			Attitud	SubN	PerBC	Intentn
Attitud_N	0.89	0.67	<b>0.67</b>			
SubN_N	0.93	0.82	0.29	<b>0.82</b>		
PerBC_N	0.82	0.61	0.56	0.17	<b>0.61</b>	
Intentn_N	0.90	0.81	0.34	0.16	0.30	<b>0.81</b>

*Note:* Diagonal elements (in bold) are average variance extracted and the other entries in the part of the table are squared correlations

As indicated in the figure 4.32 and Table 4.38 the factor loading of the items are above 0.7, the values of AVE for all the factors influencing intention to adopt internet banking are 0.61 and above ( $> 0.5$ ). This indicates that the measurement model has a good convergent validity.

The construct reliability for all the factors is also very high, 0.82 and above ( $> 0.7$ ). High construct reliability indicates that internal consistency exists among the items of the constructs and that all the items consistently represent the same latent construct.

Regarding the discriminant validity of the constructs, it is observed from Table 4.38 that the AVE of attitude, subjective norm, perceived behavioural control and intention is much higher than the squared correlation between each of these constructs and all the other 3 constructs. Hence discriminant validity is supported for all the determinants of intention for the non users. The results indicate that intention and the determinants of intention are constructs distinct from each other.

Table 4.39

*Fit Indices of the Measurement Model for intention for the non users.*

Fit Index	CMIN/ DF	GFI	AGFI	RMSEA	NFI	CFI
Acceptable values	<5.00	0 to1, close to 1 shows better Fit	0 to 1, close to 1 shows better Fit	<0.08	0 to 1, close to 1 shows better Fit	>0.9
Model Fit Scores	2.794	0.950	0.918	0.066	0.961	0.974

Table 4.39 shows the output of the confirmatory factor analysis of the items of intention for the non users. The fit indices are within the acceptable range and found to be very significant. It indicates that the overall scale has a good construct validity. Hence the said constructs are considered for further analysis.

The Confirmatory Factor Analysis (CFA) provided good results for the convergent and discriminant validity of the measurement instrument. The fit indices of all the measurement models were also found to be very significant and within the acceptable range. Based on these results structural models are developed in the next chapter.

## CHAPTER 5

### ANALYSIS AND RESULTS

Data analysis and results of the qualitative study are initially provided in this chapter, followed by the data analysis and results of the quantitative study. The data have been analyzed for the individual models as well as for the overall model and the results of the output have been presented for the users and the non users. Also the results of the moderating role of Felt want in the Theory of Planned Behavior examined by applying the chi-square difference test have been presented in this chapter. The data were analyzed using SPSS version 21 and AMOS version 22.

#### 5.1 FINDINGS OF THE QUALITATIVE STUDY

Semi-structured in depth interviews were conducted initially with 40 bank customers of which, 20 respondents were the users of internet banking and 20 respondents were the non users of internet banking. The qualitative study with regards to the adoption and use of internet banking was intended to collect relevant data, the results of which would provide useful inputs and a clear direction to the research.

##### 5.1.1 Sample Characteristics

The demographic characteristics of the 40 bank customers interviewed for the qualitative study have been summarized in Table 5.1.

Table 5.1

*Demographic characteristics of the Respondents of the qualitative study*

Demography	Category	Users of IB	Non Users of IB	Total	Total
		Frequency	Frequency	Frequency	Percent
<b>Gender</b>	Male	6	4	10	25
	Female	14	16	30	75
<b>Age</b>	20yrs to 30yrs	6	8	14	35
	31yrs to 40yrs	10	6	16	40
	41yrs to 50yrs	4	6	10	25
<b>Marital status</b>	Unmarried	4	8	12	30
	Married	16	12	28	70

Majority of the bank customers interviewed were females, married and within the age group of 31 to 40 years.

### **5.1.2 Description of the interview.**

The bank customers were asked how they initially came to know about internet banking and their perceptions of benefits and risk in using internet banking. They were also asked whether other members of their family use internet banking and their general opinion about the internet banking service.

The bank customers using internet banking were asked to relate their experiences in internet banking usage and their extent of usage with respect to the period of use, frequency of use and internet banking services used by them. They were also asked if they faced any problem in using internet banking, the precautionary measures taken by them and their intentions of internet banking usage in future. The bank customers

not using internet banking were asked to state their reasons for not adopting internet banking and their intentions of using internet banking in future. The questionnaire used for the qualitative study is attached in Appendix A.

The responses of the customers were summarized and conclusions were drawn.

### **5.1.3 The findings of the in depth interviews**

The in depth interviews revealed the following:

1. Most of the respondents using online Banking came to know about the service through the bank, whereas media was the most important source of awareness of internet banking for the respondents not using online banking. 15 respondents using online banking also had other members of their family using online banking and 7 respondents not using online banking had other members of their family using the service.

2. Regarding the usage of online banking it was revealed that:

1. Many respondents have been using online banking once a month, followed by twice a week and once a week.
2. Most of the respondents have been using online banking for upto 2 years.
3. All the respondents use online banking to view the account statements and check the balance. Most of them use online banking for fund transfer, payments of bills, Insurance premiums, recharge of mobile phones and dish TV. Some of them use online banking for online shopping, buying tickets, making fixed deposits and for ordering cheque book.

### 3. Perceived benefits of using internet banking

The 20 respondents using internet banking perceived a number of benefits and stated various reasons for using internet banking such as:

- Easy data accessibility, facilitates printed statement, provides updates and alerts online.
- Provides 24 hours service, allows any time any place banking,
- Provides convenience, allows payments of utility bills, allows transfer of funds and to perform other banking transactions at leisure without visiting the bank.
- Saves time, can get data instantly and the online transactions are performed very fast.
- Reduces visit to the bank, don't have to stand in a queue and there is also no parking problem.
- Customer is in control of the Account, can operate the Account by oneself.
- Saves paper work and procedures,
- Internet banking is safe as one time password is provided for every transaction.
- Systematic, more efficient, better than any other mode of payment.
- Less costly, saves on fuel cost to visit the branch.
- Busy during the week, lack of time for branch banking as family members are working.

4. The 20 respondents not using internet banking also perceived various benefits of using online banking. They felt that internet banking is convenient since the customers do not have to personally go to the bank, especially during office hours and stand in the queue to perform their banking transactions. They also stated that internet

banking saves time and is useful for making payment of utility bills, mobile card recharge, to check the account entries and for online shopping. The non-users also felt that online banking is more transparent, transfer of money is faster, there is no need to fill the slip or forms, no paperwork is involved and that banking transactions are performed at the finger tips. They felt that the banking work gets easier and that there is no stress of counting and carrying cash.

#### 5. Perceived risks of using internet banking

Out of the 20 respondents using internet banking, 4 respondents who were not involved in fund transfers only perceived the risk of forgetting the password. However the others actively involved in internet banking perceived risk of:

- Forgetting the password
- Their online bank account being hacked and their account details being leaked or misused.
- Losing money due to transaction error or bank account misuse.
- Inability to perform the banking transaction due to the lack of Internet connectivity or breakdown of the system servers.
- Transferring funds online and feel anxious till an acknowledgement is received.

6. The users of online banking have taken the following precautionary measures to face the risk perceived by them.

1. The password is kept confidential and is changed very often.

2. As far as possible only personal computers are used to perform online banking transactions.

3. Customers have limited amount in the account with Online Banking.

4. Customers have installed anti-virus.

5. Payments are made only to trusted parties.

6. The account is logged out properly; customers wait till the next page appears.

7. They use virtual keyboard whenever required.

7. 15 respondents using online banking had not faced any problem in Online Banking usage whereas the others faced problems of forgetting the password, missed the transaction due to lack of internet connection and found it difficult to begin the transaction.

8. The risks perceived by the non users of online banking are as follows:

- They perceive very high risk of their online banking account being hacked.
- Perceive risk of not performing the online transactions accurately.
- Concerned about a wrong entry being done and whether it can be rectified.
- Perceive risk of wrong balance being shown in the account due to an error in the software.
- Concerned about their inability to perform the internet banking transactions due to the breakdown of the bank server.
- Perceive risk during fund transfers, due to virus and other issues.

9. The reasons for not using Internet banking.

The following reasons were stated by the non users for not using the Internet Banking service:

- Never felt the need
- Have few banking transactions, mostly cash transactions hence can manage without using internet banking.
- Satisfied with branch banking.
- Feel there is a security threat on the internet and find online banking risky.
- Not familiar with the process of online transactions and concerned about the wrong entry being done.
- Very bad at remembering password.
- All banking transactions cannot be performed by internet banking.
- Not fascinated by internet banking.
- Other products and services such as debit card, credit card, SMS alerts, ATM's, phone banking and mobile banking serve the required purpose.
- Other family members perform the banking jobs using internet banking.

10. 11 respondents not using online banking perceived the service as useful and would like to use online banking in future, 5 respondents not using internet banking were doubtful about using internet banking, whereas 4 respondents were not interested in using online banking in future.

The exploratory study on customer behavior in online banking services brought to light some factors influencing the adoption and use of internet banking which have not received adequate attention in previous research.

- Felt Want for online banking.
- Nature and number of bank transactions.
- Satisfaction with branch banking.
- Lack of familiarity with the process of online transactions

- Concerned about wrong entry being done.
- Very bad at remembering password.
- All banking transactions cannot be performed by internet banking.
- Not fascinated by internet banking.
- Use of substitute products and services such as debit card, credit card, SMS alerts, ATM's and mobile for banking for banking jobs.
- Use of internet banking by family members.

In conclusion, the key results revealed during the in depth interviews have been included directly or indirectly into the conceptual framework of the present study. The conceptual model developed in this study captures the important factors that influence the intentions of internet banking adoption and use for the users and the non users of internet banking. Their narratives, experiences, perceptions and opinions relating to internet banking facilitated the identification of constructs, development of scale items for the measurement instrument, formulation of the hypotheses and for developing the proposed model for studying customer behavior in using internet banking services. The findings of the qualitative study along with literature review enabled the preparation of the Questionnaire. The exploratory study gave further direction to the study.

## **5.2 ANALYSIS AND RESULTS OF THE QUANTITATIVE STUDY**

For the quantitative study a total of 850 bank customers were surveyed with 450 respondents being the users of internet banking and 400 respondents being the non users of internet banking. The Data collected has been analyzed by using SPSS (Version 21) and SEM using AMOS software (Version 22). IBM SPSS AMOS

implements structural equation modeling (SEM) for data analysis and accepts a path diagram as a model specification and displays parameter estimates graphically on a path diagram (Arbuckle, 2014). The data was analyzed in line with the proposed model in order to test the relationship between the constructs and to develop the model.

### 5.2.1 Description of Sample characteristics

The Demographic characteristics of the sample respondents with respect to their age, gender, marital status, highest qualifications and occupation have been stated in terms of the frequency and percentage and presented in Table 5.2. Table 5.2 shows that most of the respondents in the users and non users' category are in the age group of 20 to 29 years. Most of the respondents are males in the user's category and females in the non user's category. Majority of the respondents are married and are in service. From among the respondents, most of the users have graduation as their educational qualification followed by post graduation. Whereas, for the non users, most of the respondents equally have graduation and post graduation as their highest educational qualification

Table 5.2

*Sample characteristics of the Respondents (quantitative study).*

Demography	Category	Users of IB		Non Users of IB	
		Frequency	Percent	Frequency	Percent
<b>Age</b>	20yrs to 29yrs	204	45.33	166	41.5
	30yrs to 39yrs	145	32.22	103	25.75
	40yrs to 49yrs	72	16	75	18.75
	50yrs to 59yrs	18	4	40	10
	60yrs and above	11	2.4	16	4

<b>Gender</b>	Male	283	62.9	176	44
	Female	167	37.1	224	56
<b>Marital status</b>	Single	201	44.7	171	42.8
	Married	249	55.3	229	57.3
<b>Qualifications</b>	SSC (10 <sup>th</sup> )	1	0.22	8	2
	HSSC (12 <sup>th</sup> )	16	3.55	39	9.75
	Graduation	235	52.22	168	42
	Post Graduation	171	38	168	42
	Ph.D	27	6	17	4.25
<b>Occupation</b>	Student	23	5.1	34	8.5
	Homemaker	5	1.1	14	3.5
	Service	317	70.4	272	68
	Business	15	3.3	14	3.5
	Professionals	82	18.2	57	14.3
	Retired	8	1.8	9	2.3

### 5.2.2 Structural models and examining of relationships.

Structural models were developed for Felt Want and Intention (overall model) and the theory of Planned Behaviour model from existing literature was adopted in this study. The relationships in these 3 models are examined in this section for the users and the non users. The structural models were developed using AMOS software and the relationships are examined by using path analysis output provided by AMOS. The moderation effects of Felt want are examined in the Theory of Planned Behaviour model by applying the chi square difference test. For the structural models, the significance of the relationships has been reported based on the Probability values (P Value) at 1% and 5% level of significance.

From among the many measures of Model fit, 5 fit Indices as suggested by Hair et al., namely (CMIN/df), GFI, CFI, TLI, and RMSEA have been taken along with NFI and

IFI to study the fit of the models. The ratio of chi-square to the degree of freedom of the value less than or equal to 3.00 as recommended by Arbuckle (2014) has been considered in the study. The Adjusted Goodness of Fit index (AGFI) and Incremental Fit Index (IFI) value between 0-1 recommended by Arbuckle (2014) has also been considered. He also stated that IFI values close to 1 indicate a very good fit.

The Goodness of Fit Index (GFI), Normal Fit Index (NFI) and Tucker Lewis Index (TLI) values of 0 to 1 (higher values indicating better fit), Comparative Fit Index (CFI) value greater than or equal to 0.90 and Root Mean Square Error of Approximation (RMSEA) smaller than or equal to 0.07 as suggested by Hair et al. (2017) have been taken to a test the fit of the structural models in the study

The path diagrams, relationships examined and fit indices for the users and the non users for each model have been organised and presented under the following headings:

5.2.2a Structural Model for Felt Want

5.2.2b Structural Model for Intention

5.2.2c Theory of Planned Behaviour (TPB) Model

5.2.2d Moderating role of Felt Want in the TPB Model

## 5.2.2a Structural Models for Felt Want

## 1. Felt Want for the Users of internet banking.

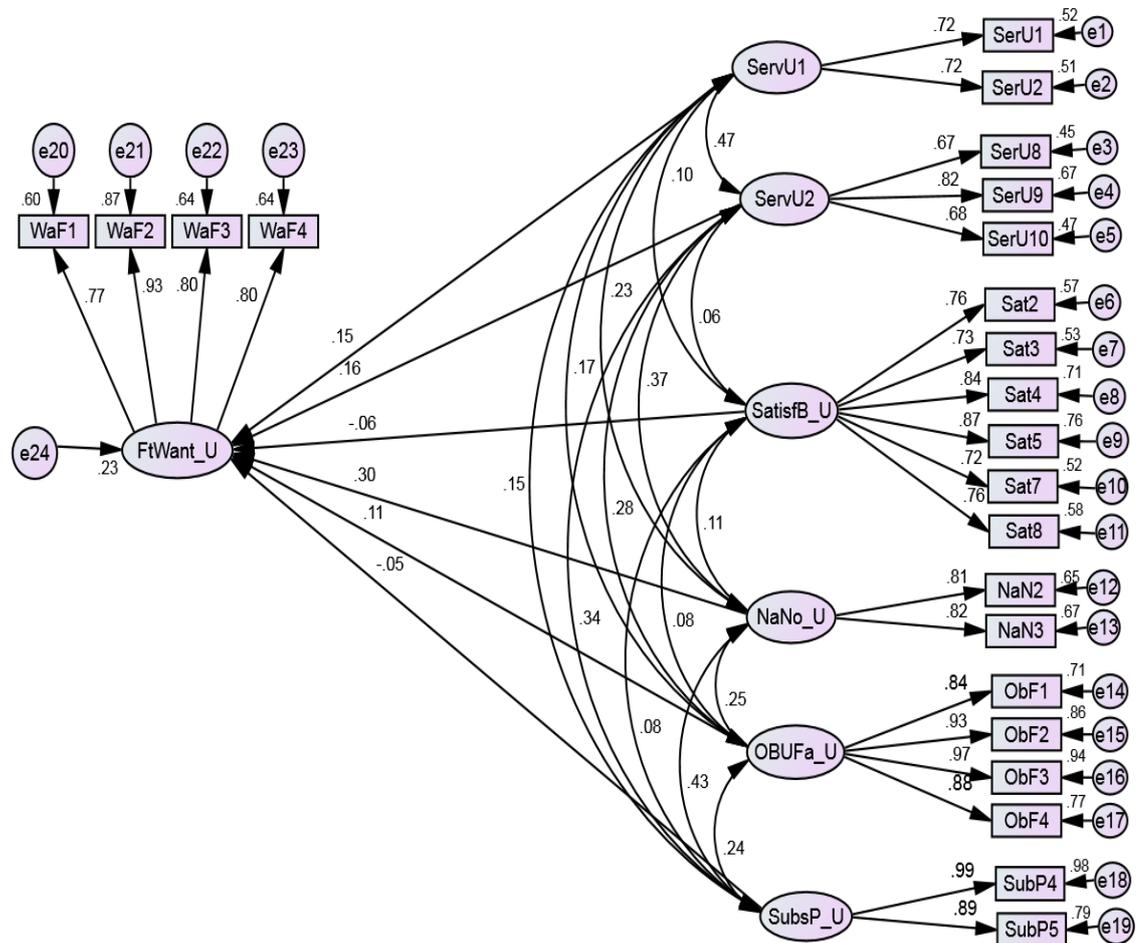


Figure 5.1. The Structural Model for Felt Want for the Users.

Table 5.3

Factors determining Felt Want for the users: Regression output

Relationship	Standardised weight	Estimate	S.E.	C.R.	P	Significant Not Significant
ServU1 → FtWanted	.152	.125	.056	2.252	.024**	Significant
ServU2 → FtWanted	.158	.101	.044	2.305	.021**	Significant
SatisfB → FtWanted	-.058	-.048	.039	-1.218	.223	Not Significant
NaNo → FtWanted	.298	.208	.044	4.694	***	Significant

OBUFa	→	FtWant	.110	.056	.025	2.232	.026**	<b>Significant</b>
SubsP	→	FtWant	-.053	-.023	.023	-.994	.320	Not Significant

Note: \*\* represent 5% level of significance and \*\*\* represents 1% level of significance.

For the Users of internet banking, Felt Want is significantly and positively influenced by services used, nature and number of bank transactions and online banking use by family members. The satisfaction with branch banking and use of substitute products for banking do not have a significant influence on the Felt Want for internet banking for the users.

Table 5.4

*Fit Indices for the structural model of Felt Want for the Users*

Fit Index	CMIN/ DF	GFI	NFI	IFI	TLI	CFI	RMSEA
Recommended value	≤ 3.00	0-1	0-1	0-1	0-1	≥0.9	≤0.07
Model fit scores	2.443	.909	.924	.954	.944	.953	.057

The Amos output obtained for the structural model of Felt Want for the Users revealed that the fit indices were within the acceptable range. Thus the model has reached the acceptable level and can be used to explain the hypotheses

2. Felt Want for the Non Users of internet banking.

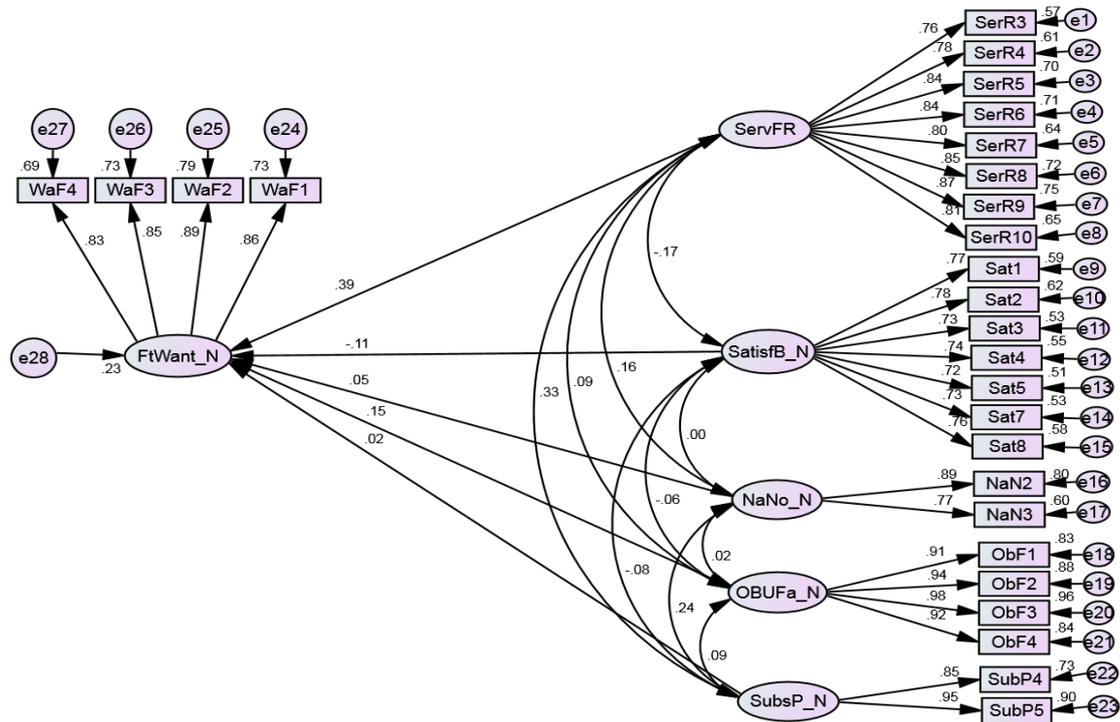


Figure 5.2. The Structural Model for Felt Want for the Non Users.

Table 5.5

Factors determining Felt Want for the Non users: Regression output

Relationship	Standardised weight	Estimate	S.E.	C.R.	P	Significant Not Significant
ServFR → FtWANT	.395	.272	.038	7.155	***	Significant
SatisfB → FtWANT	-.109	-.123	.057	-2.171	.030**	Significant
NaNo → FtWANT	.046	.039	.045	.865	.387	Not Significant
OBUFa → FtWANT	.147	.095	.031	3.063	.002**	Significant
SubsP → FtWANT	.017	.015	.048	.320	.749	Not Significant

Note: \*\* represent 5% level of significance and \*\*\* represents 1% level of significance.

For the non users of internet banking, Felt Want is significantly influenced by internet banking services felt required, satisfaction with branch banking and online banking use

by the family members. The influence of satisfaction with branch banking on Felt want is negative. The nature and number of bank transactions and the use of substitute products for banking do not have a significant influence on the Felt Want for internet banking for the non users of internet banking.

Table 5.6

*Fit Indices for the structural model of Felt Want for the non Users*

Fit Index	CMIN/ DF	GFI	NFI	IFI	TLI	CFI	RMSEA
Recommended value	$\leq 3.00$	0-1	0-1	0-1	0-1	$\geq 0.9$	$\leq 0.07$
Model fit scores	2.549	0.868	0.909.	0.942	0.934.	0.942	0.62

The fit indices were found to be within the acceptable range. Thus the model has reached the acceptable level and can be used to explain the hypotheses.

The mean scores calculated for the items of Felt Want for the Users and the Non Users is shown in the following table.

Table 5.7

*Mean scores for Felt Want for the Users and the Non User.*

Sr. No.	Items for Felt Want	Mean Scores	
		Users	Non Users
1.	I feel Internet Banking is useful for me to perform my banking jobs.	4.01	3.38
2.	I think Internet banking is significant for me.	3.99	3.31
3.	I feel internet Banking will solve my banking requirements.	3.88	3.24
4.	I would want to use internet banking.	4.19	3.54
<b>Total</b>		<b>16.07</b>	<b>13.47</b>

**5.2.2b Structural Model for Intention to adopt and use internet banking (Overall Model).**

The Structural Model for Intention is the overall Model combining the 3 models; the model for Attitude, the Perceived Behavioural Control model and the Theory of Planned Behaviour model. The Structural Model for Intention for the Users is given in figure 5.3 and the Structural Model for Intention for the non users is given in figure5.4.

1. The Structural Model for Intention for the Users

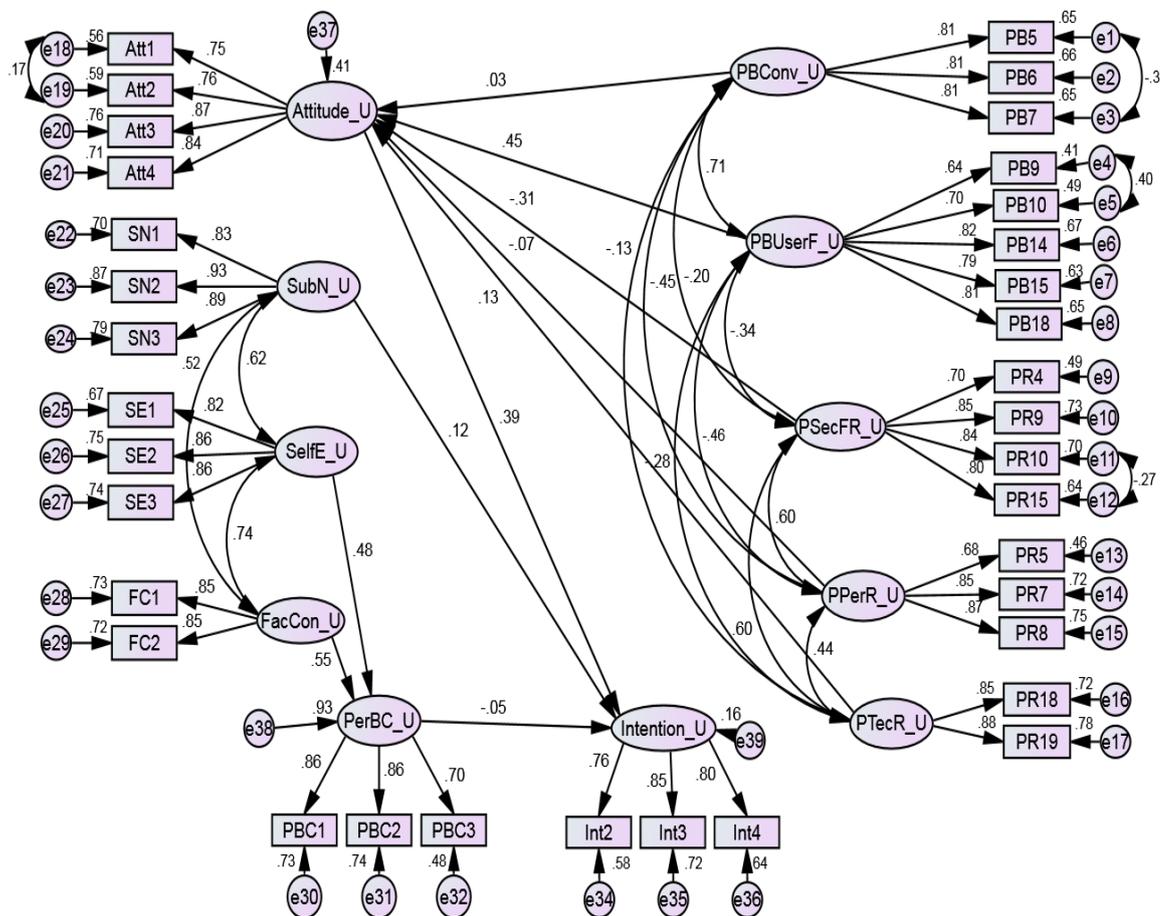


Figure 5.3. Structural Model for Intention for the Users.

Table 5.8

*Overall Model for Intention for the Users: Regression output*

Relationship	Standard weights	Estimate	S.E.	C.R.	P	Significant
PBConv → Attitude	.029	.030	.078	.392	.695	Not Significant
PBUserF → Attitude	.454	.605	.107	5.648	***	Significant
PSecFR → Attitude	-.310	-.204	.046	-4.446	***	Significant
PPerR → Attitude	-.070	-.049	.047	-1.040	.299	Not Significant
PTecR → Attitude	.134	.077	.035	2.193	.028 **	Significant
SelfE → PerBC	.482	.433	.050	8.605	***	Significant
FacCon → PerBC	.551	.479	.052	9.218	***	Significant
Attitude → Intention	.385	.376	.053	7.072	***	Significant
SubN → Intention	.119	.086	.046	1.859	.063	Not Significant
PerBC → Intention	-.048	-.049	.066	-.743	.457	Not Significant

Note: \*\* represent 5% level of significance and \*\*\* represents 1% level of significance.

The Attitude of the Users towards internet banking is influenced by perceived benefit of user friendliness, perceived security and financial risk and perceived technical risk. Perceived benefit of Convenience and perceived performance risk does not have a significant influence on the attitude of the users of internet banking. The relationships between self efficacy and facilitating conditions with perceived behavioural control are found to be significant for the users. For the Users of internet banking, only their attitude has a significant influence on their behavioural intentions whereas subjective norms and perceived behavioural control do not have a significant influence on their intentions to use internet banking in the future.

Table 5.9

*Fit Indices of the Model for Intention for the Users*

Fit Index	CMIN/DF	GFI	NFI	IFI	TLI	CFI	RMSEA
Recommended value	≤ 3.00	0-1	0-1	0-1	0-1	≥0.9	≤0.07
Model fit scores	2.680	0.871	.870	.914	.904	.914	.061

The overall model fit indices are within the recommended range, hence the model has reached the acceptable level and can be used to explain the hypotheses.

**2. The Structural Model for Intention for the Non Users**

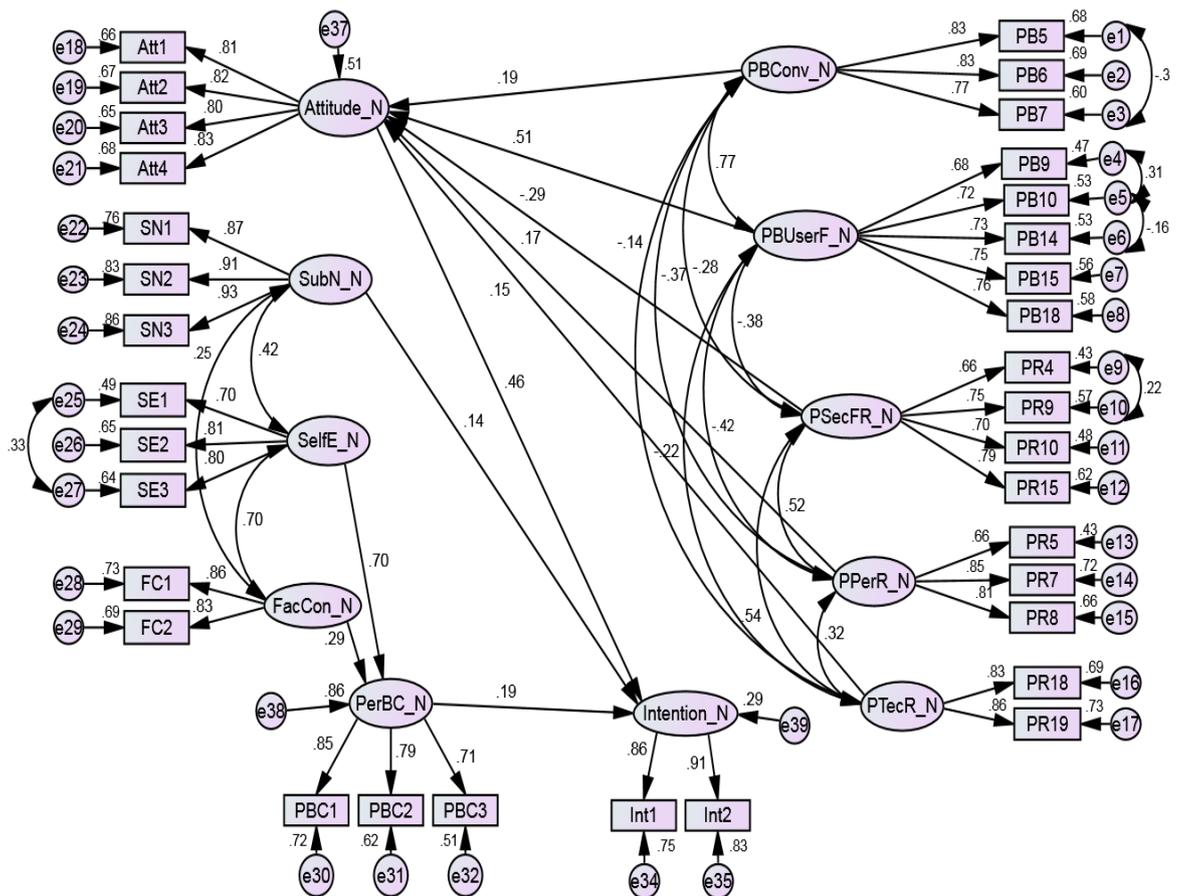


Figure 5.4. Structural Model for Intention for the Non Users.

Table 5.10

*Overall Model for Intention for the Non Users: Regression output*

Relationship	Standardised weights	Estimate	S.E.	C.R.	P	Significant Not Significant
PBConv → Attitude	.194	.199	.087	2.284	.022 **	<b>Significant</b>
PBUserF → Attitude	.514	.645	.120	5.368	***	<b>Significant</b>
PSecFR → Attitude	-.288	-.238	.059	-4.029	***	<b>Significant</b>
PPerR → Attitude	.167	.128	.046	2.787	.005 **	<b>Significant</b>
PTecR → Attitude	.148	.125	.050	2.506	.012 **	<b>Significant</b>
SelfE → PerBC	.696	.630	.072	8.797	***	<b>Significant</b>
FacCon → PerBC	.292	.256	.059	4.383	***	<b>Significant</b>
Attitude → Intention	.462	.503	.061	8.294	***	<b>Significant</b>
SubN → Intention	.136	.120	.047	2.567	.010 **	<b>Significant</b>
PerBC → Intention	.192	.214	.062	3.471	***	<b>Significant</b>

*Note:* \*\* represent 5% level of significance and \*\*\* represents 1% level of significance.

The Attitude of the Non Users towards internet banking is found to be significantly influenced by all the factors; perceived benefit of Convenience, perceived benefit of User friendliness, perceived security and financial risk, perceived performance risk and perceived technical risk. In this model the relationships between self efficacy and facilitating conditions with perceived behavioural control are found to be significant. The attitude, subjective norm and perceived behavioural control have a significant influence on the behavioural intentions of adoption and use of internet banking for the Non Users of internet banking.

Table 5.11

*Fit Indices of the Model for Intention for the Non Users*

Fit Index	CMIN/ DF	GFI	NFI	IFI	TLI	CFI	RMSEA
Recommended value	$\leq 3.00$	0-1	0-1	0-1	0-1	$\geq 0.9$	$\leq 0.07$
Model fit scores	2.681	0.848	.849	.900	.886	.899	.065

The overall model fit indices are within the recommended range. Thus the model has reached the acceptable level and can be used to explain the hypotheses.

The mean scores calculated for the items of attitude for the Users and the Non Users is shown in the following table.

Table 5.12

*Mean scores for the items of attitude towards internet banking*

Sr No.	Items of Attitude towards internet banking	Mean Scores	
		Users	Non Users
1.	I think that using Internet banking is a good idea.	4.28	3.78
2.	I think that using Internet banking for financial transactions would be a wise idea.	4.09	3.62
3.	I think that using Internet banking is pleasant.	4.10	3.56
4.	In my opinion, it is desirable to use Internet banking.	4.12	3.57
Total		16.59	14.53

The mean scores calculated for the items of perceived behavioural control for the Users and the Non Users are shown in the following table.

Table 5.13

*Mean scores of the items of PBC for the Users and the Non Users.*

Sr. No.	Items for Perceived Behavioural Control	Mean Scores	
		Users	Non Users
1.	I think that I would be able to use internet banking well for my financial transactions.	4.01	3.5
2.	I think that I have the resources, knowledge and ability to use internet banking.	4.11	3.63
3.	I think that using internet banking would be entirely within my control.	3.9	3.4
Total		12.02	10.53

The mean scores calculated for each of the items of intention for the Users and the Non Users are shown separately in the following tables.

Table 5.14

*Mean scores for Intentions of future usage of internet banking for the Users.*

Sr. No.	Items of intention towards internet banking Usage in future.	Mean Scores
1.	I would like to continue using internet Banking in future.	4.52
2.	I would like to use internet Banking more often in future.	4.29
3.	I would like to use internet Banking for additional services in future.	4.16
4.	I would like to increase my usage of internet Banking.	4.05
Total		17.02
Average Mean Score		4.255

Table 5.15

*Mean scores for Intentions of adoption and use of internet banking for the Non Users.*

Sr. No.	Items of intention of internet banking adoption and Use	Mean Scores
1.	I would like to start using internet banking services in future.	3.73
2.	I intend to use Internet banking for handling my banking transactions.	3.63
Total		7.36
Average Mean Score		3.68

### 5.2.2c The Theory of Planned Behaviour Model

The Theory of Planned Behaviour (TPB) model which is a part of the overall model for intention, is studied individually for the the users and for the non users of internet banking in order to better understand the relationships in the model and also to know the model fit statistics prior to the moderation effects and with the moderation effects.

1. The Theory of Planned Behaviour Model applied to the Users of internet banking is given in Figure 5.5.

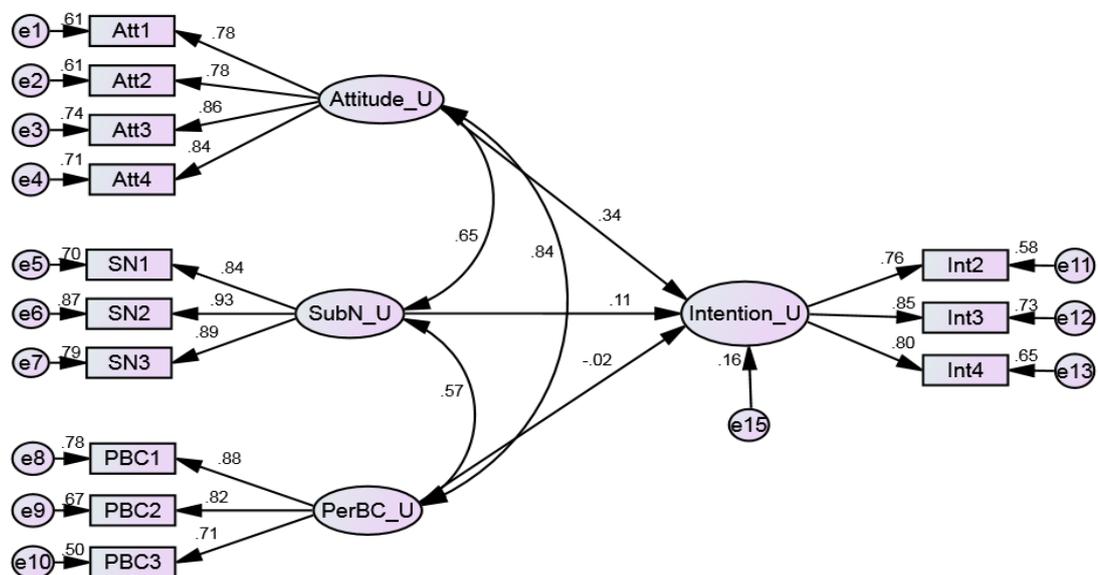


Figure 5.5. The TPB model for the Users.

Table 5.16

*Factors influencing intention in the TPB model: Regression output for users*

Relationship	Standardised weights	Estimate	S.E.	C.R.	P	Significant Not Significant
Attitu → Intention	.339	.356	.132	2.689	0.008 **	Significant
SubN → Intention	.106	.066	.053	1.240	0.125	Not Significant
PerBC → Intention	-.024	.014	.126	0.115	0.837	Not Significant

Note: \*\* represent 5% level of significance and \*\*\* represents 1% level of significance

For the Users of internet banking, only their attitude has an influence on their behavioural intentions whereas subjective norms and perceived behavioural control do not have a significant influence on their intentions to use internet banking in the future. It is observed that the results for the relationships in the individual TPB model are similar to the results for the relationships in the overall model.

Table 5.17

*Fit statistics for the structural model on the TPB for the users.*

Fit Index	CMIN/DF	GFI	NFI	IFI	TLI	CFI	RMSEA
Recommended value	≤ 3.00	0-1	0-1	0-1	0-1	≥0.9	≤0.07
Model fit scores	2.226	0.958	0.966	0.981	0.975	0.981	0.05

The overall model fit indices are within the recommended range. Thus the model has reached the acceptable level.

2. The Theory of Planned Behaviour Model applied to the Non Users of internet banking is given in Figure 5.6.

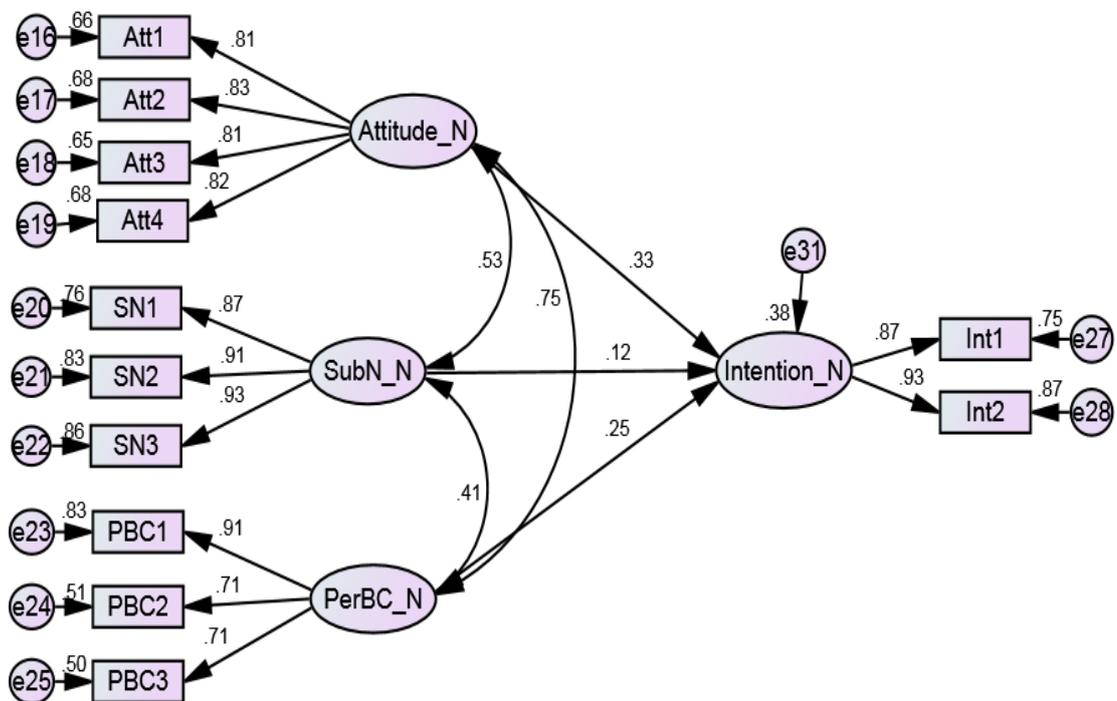


Figure 5.6. The TPB model for the Non Users.

Table 5.18

*Factors influencing intention in the TPB model: Regression output for non users*

Relationship	Standardised weights	Estimate	S.E.	C.R.	P	Significant Not Significant
Attitude → Intention	.335	.390	.103	3.774	***	<b>Significant</b>
SubN → Intention	.116	.109	.052	2.104	.035**	<b>Significant</b>
PerBC → Intention	.250	.300	.098	3.062	.002**	<b>Significant</b>

Note: \*\* represent 5% level of significance and \*\*\* represents 1% level of significance

Table 5.18 shows that the attitude, subjective norm and perceived behavioural control have a significant influence on the behavioural intentions of adoption and use of

internet banking for the Non Users of internet banking. It is observed that the results for the relationships in the individual TPB model are similar to the results of the relationships in the overall model.

Table 5.19

*Fit statistics for the structural model on the TPB for the Non Users.*

Fit Index	CMIN/ DF	GFI	NFI	IFI	TLI	CFI	RMSEA
Recommended value	$\leq 3.00$	0-1	0-1	0-1	0-1	$\geq 0.9$	$\leq 0.07$
Model fit scores	2.744	0.950	0.961	0.975	0.965	0.974	0.066

The overall model fit indices are within the recommended range. Thus the model has reached the acceptable level.

#### **5.2.2d Moderating Role of Felt Want in the TPB model.**

The proposed Research Model incorporated the moderation effect of Felt Want in the Theory of Planned Behaviour model. Thus this study examines the role of Felt Want as a moderator on the relationships between attitude, subjective norms and perceived behavioural control and behavioural intentions towards the adoption and use of internet banking, under conditions of different levels of Felt Want for the sub groups of low want and high want, users and non users. The sub groups were formed by performing a median split (Innocenti, Pilati & Peluso, 2011; Shee & Wu, 2008) based upon the scores of Felt Want to obtain two sub-samples with a low want and high want for the users and the non users. A Multi-Group Analysis is performed and the results of the moderating role of Felt want, examined by applying the chi-square

difference test, have been reported based on the probability values (P Value) at 5% and 10% level of significance.

Moderation exists when the causal relation between the independent variable and the dependent variable changes as a function of the moderator variable and the statistical analysis is used to measure and test the differential effect of the independent variable on the dependent variable as a function of the moderator (Baron & Kenny, 1986).

Subgroup analysis and moderated regression analysis are used to identify the form and the strength of the moderator variables. Subgroup analysis is performed for the model by splitting the sample into subgroups on the basis of the hypothesized moderator. The  $R^2$  difference across subgroups indicates the significant predictor variable. When the  $R^2$  varies between the subgroups it can be concluded that the variable used for sub grouping is a moderator (Sharma, Durand, & Gur-Arie, 1981).

Sauer & Dick, 1993 stated that “Tests of discrete (categorical) moderator variable effects can be performed by utilizing the moderator to divide the sample into groups and performing a Chi-square test of the significance of the difference between designated structural parameters across groups” (p. 336). They also suggested performing the tests of continuous moderator variable effects by specifying interaction effects within the context of the structural equation model.

### **1. Examining the moderating role of Felt Want for the Users: A Multi-Group Analysis**

Felt Want for internet banking for the Users is influenced by the services used, nature and number of bank transactions and online banking use by family members (refer

Table 5.3). Felt Want as a moderator for the users in the TPB model was studied to find out whether, Felt Want moderates the relationships between attitude, subjective norm and perceived behavioural control on the intention to use internet banking. A multi-group analysis was thus carried out to examine the moderating role of felt Want for the users of internet banking.

Preliminary analysis (Table 4.8) confirmed that the four items used to measure Felt Want were internally consistent and represented a reliable measure of the construct. The AVE for the 4 items was 0.685 ( $> 0.5$ ), indicating that the measurement model is of good convergent validity. The construct reliability for Felt Want is also very high i.e. 0.90 ( $> 0.7$ ) indicating that all the 4 items used to measure Felt Want consistently represent the same latent construct i.e. Felt Want.

The scores of the four items indicating Felt Want were then averaged to obtain a composite indicator of Felt Want (Median= 4.0, Standard Deviation= 0.64242). A median split was performed based upon the scores of Felt Want to obtain two sub-samples of subjects with a low (low want sample size:  $n_{lw}= 307$ ) versus a high level of Felt Want (high-want sample size:  $n_{hw}= 143$ ), respectively.

The model with different levels of Felt Want was then constrained, where the structural parameters associated with the link from attitude to intention, subjective norm to intention and perceived behavioural control to intention were not allowed to vary across the two sub-groups (low want and high want). This model had equal regression towards these 3 relationships.

The unconstrained model (original multi-group model) was compared with the constrained model (equal regression for the 3 paths). The results shown in table 5.20 indicate that both the models fit the data very well.

While testing for the moderation effect of Felt Want, it was found that between the unconstrained model and the constrained model the Chi-Square difference is 2.95 with 3 degrees of freedom which is not significant at 5% as well as at 10% level of significance ( $p= 0.3994$ ).

Thus the chi-square difference test did not confirm that the unconstrained model performs significantly better than the constrained model. Hence this finding does not support the moderating role of Felt Want in the Theory of Planned Behaviour model for the users of internet banking.

Secondly to test the Hypotheses; H13 to H15 for the users, the moderation effects for each path between attitude, subjective norms and perceived behavioural control and intention respectively was examined by applying the chi-square difference test. The results showed that between the unconstrained model and the model constrained for equal regression of attitude, the Chi-Square difference is 2.098 with 1 degree of freedom which is not significant at 5% as well as at 10% risk ( $p= 0.1475$ ). Hence Hypothesis **H13** is not supported. Secondly between the unconstrained model and the model constrained for equal regression of Subjective Norms, the Chi-Square difference is 0.014 with 1 degree of freedom which is not significant at 5% as well as at 10% risk ( $p= 0.9058$ ). Hence Hypothesis **H14** is not supported. Similarly between the unconstrained model and the model constrained for equal regression of Perceived Behavioural Control, the Chi-Square difference is 2.32 with 1 degree of freedom which is not significant at 5% as well as at 10% level of significance ( $p = 0.1277$ ). Hence Hypothesis **H15** is not supported. The results of the chi-square difference test for the users have been attached at Appendix K.

It is observed that although the P Value for the relationship between attitude and intention (table 5.21) are different for the low want and high want Users, the Chi-Square difference test for the moderating role of Felt Want on the path between attitude and intention does not give positive results. Thus the moderating role of Felt Want in the Theory of Planned Behaviour for the Users is not found to be supported.

Table 5.20

*Fit indices for different models for the Users: original and moderation*

Fit Index	CMIN	DF	CMI N/DF	GFI	NFI	IFI	TLI	CFI	RMSE A
Recommended value	-	-	≤ 3.00	0-1	0-1	0-1	0-1	≥ 0.9	≤ 0.07
Scores for Model 1	131.356	59	2.226	.958	.966	.981	.975	.981	.052
Scores for Model 2	241.894	118	2.050	.926	.925	.960	.946	.959	.048
Scores for Model 3	244.844	121	2.024	.925	.924	.960	.948	.959	.048

**Model 1** is the Original model.

**Model 2** is the Unconstrained Model with sub groups (low Want & High Want).

**Model 3** is the Constrained Model with sub groups (low Want & High Want).

Table 5.21

*Factors influencing intention for the Sub groups of Users.*

Relationship	Low Want		High Want	
	P Value	Significant Not Significant	P Value	Significant Not Significant.
Attitude → Intention	0.015**	<b>Significant</b>	0.904	Not Significant
SubN → Intention	0.291	Not Significant	0.600	Not Significant
PerBC → Intention	0.311	Not Significant	0.241	Not Significant

Note: \*\* represent 5% level of significance

The graphics of the relationship of attitude, subjective norm and perceived behavioural control with intention, with reference to the low want and high want Users are given in Figure 5.7 and Figure 5.8 respectively.

### 1. Users with Low Want for internet banking

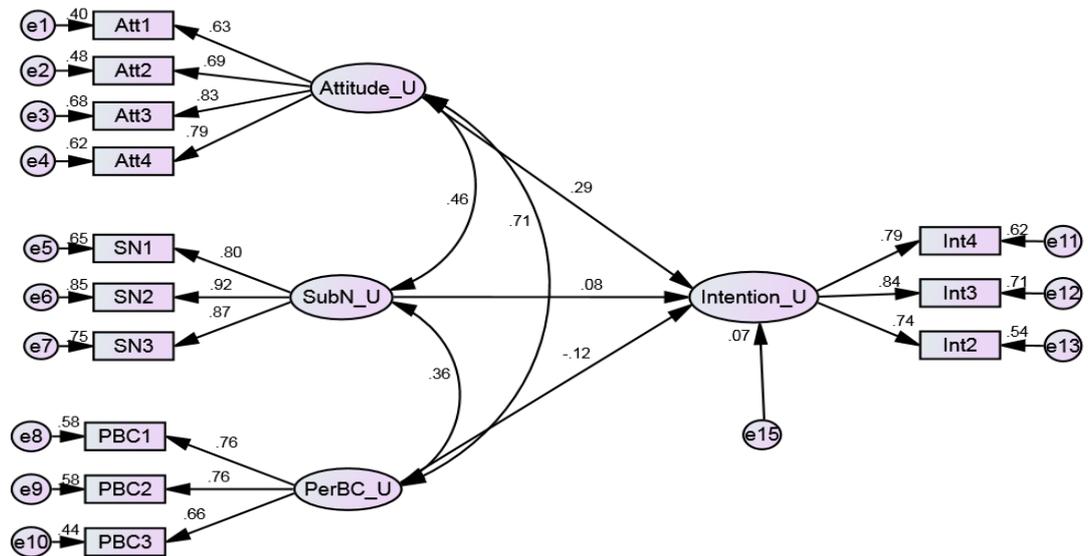


Figure 5.7. TPB model for the users with Low Felt Want

### 2. Users with High Want for internet banking

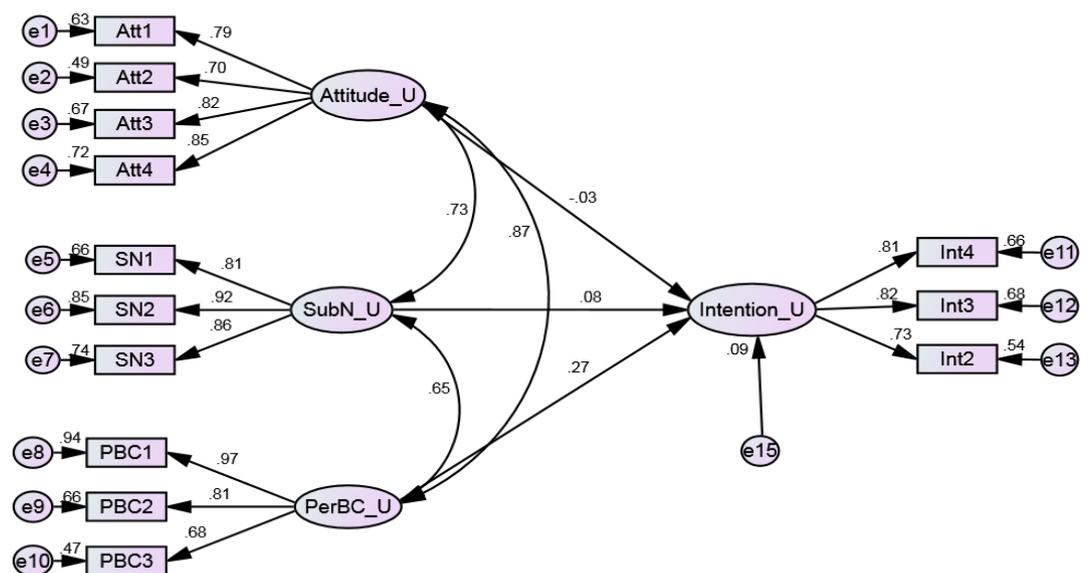


Figure 5.8. TPB model for the users with High Felt Want.

## **2. Examining the moderating role of Felt Want for the Non Users: A Multi-Group Analysis**

Felt Want for internet banking for the Non users is influenced by services felt required, satisfaction with branch banking and online banking use by the family members (Table 5.5). Felt Want as a moderator was studied in the TPB Model to find out whether for the non users, Felt Want moderates the relationships between attitude, subjective norm and perceived behavioural control on intention to use internet banking. A multi-group analysis was thus carried out to examine the moderating role of Felt Want for the Non users of internet banking.

Preliminary analysis (Table 4.15) confirmed that the four items used to measure Felt Want were internally consistent and represented a reliable measure of the construct. The AVE was 0.736 ( $> 0.5$ ), thus indicating that the measurement model is of good convergent validity. The construct reliability for all the items is also very high i.e. 0.918 ( $> 0.7$ ) indicating all the 4 items used to measure Felt Want consistently represent same latent construct i.e. Felt Want.

The scores of the four items indicating Felt Want was then averaged to obtain a composite indicator of felt want (Median= 3.5, Standard Deviation=0.83302). A median split was performed based upon the scores of Felt Want to obtain two sub-samples of subjects with a low want (low want sample size:  $n_{lw}= 230$ ) versus a high level of Want (high want sample size:  $n_{hw}= 170$ ), respectively.

The model with different levels of want was then constrained, where the structural parameters associated with the link from attitude to intention, subjective norm to intention and perceived behavioural control to intention were not allowed to vary

across the two sub-groups (low want and high want). This model had equal regression towards these 3 relationships.

The unconstrained model (original multi-group model) was compared with the constrained model (equal regression for the 3 paths). The results shown in the table 5.22 indicate that both the models fit the data very well. While testing for the moderation effect of Felt Want, it was found that between the unconstrained model and the constrained model the Chi-Square difference is 9.339 with 3 degrees of freedom which is significant at 5% level of significance ( $p= 0.0251$ ).

Thus the chi-square difference test confirmed that the unconstrained model performs significantly better than the constrained model. Hence this finding supports the moderating role of Felt Want in the Theory of Planned Behaviour model for the Non Users of internet banking.

Secondly to test the Hypotheses; H13 to H15 for the non users, the moderation effects for each path between attitude, subjective norms and perceived behavioural control and intention respectively was examined by applying the chi-square difference test. The results showed that between the unconstrained model and the model constrained for equal regression of attitude, the Chi-Square difference is 2.75 with 1 degree of freedom which is significant at 10% level of significance ( $p= 0.0973$ ). Hence Hypothesis **H13** is supported. Secondly between the unconstrained model and the model constrained for equal regression of Subjective Norms, the Chi-Square difference is 5.584 with 1 degree of freedom which is significant at 5% level of significance ( $p= 0.0181$ ). Hence Hypothesis **H14** is supported. Similarly between the unconstrained model and the model constrained for equal regression of Perceived

Behavioural Control, the Chi-Square difference is 3.597 with 1 degree of freedom which is significant at 10% level of significance ( $p = 0.0579$ ). Hence Hypothesis **H15** is supported. The results of the chi-square difference test for the non users have been attached at Appendix L.

The Chi-Square difference test for the moderating role of Felt Want on each of the paths between Attitude, Subjective Norm and Perceived Behavioural Control and Intention has given positive results. Thus the moderating role of Felt Want in the Theory of Planned Behaviour for the Non Users is supported.

It is also observed that the P Value indicating the significance of relationship between Attitude, Subjective Norm and Perceived Behavioural Control and intention for the low want non users ( Table 5.23) are significantly different from that of the high want non users. For the low want non users, only subjective norm and Perceived Behavioural Control has an influence on their intention, but attitude does not have an influence on their intentions to use internet banking. Whereas these relationships for the high want non users is just the opposite. For the high want non users, only their attitude has an influence on their intentions and Subjective Norm and Perceived Behavioural Control do not have a significant influence on their intentions. Also the  $R^2$  for the low want non user's model (0.21) is different from the  $R^2$  of the high want non user's model (0.27).

Thus the Chi-Square difference test, the  $R^2$  difference across subgroups, differences in the relation between the independent variable and the dependent variable across subgroups, proves that the moderating role of Felt Want in the Theory of Planned

Behaviour is significant and supported for the Non Users. Thus Felt Want as the moderator in the TPB is confirmed for the Non User's data.

Table 5.22

*Fit indices for different models for the Non Users: original and moderation*

Fit Index	CMIN	DF	CMI N/DF	GFI	NFI	IFI	TLI	CFI	RMSEA
Recommended value	-	-	≤ 3.00	0-1	0-1	0-1	0-1	≥0.9	≤0.07
Scores for Model 1	131.719	48	2.744	.950	.961	.975	.965	.974	.066
Scores for Model 2	188.568	96	1.964	.931	.928	.963	.949	.963	.049
Scores for Model 3	197.907	99	1.999	.927	.924	.961	.947	.960	.049

**Model 1** is the Original model.

**Model 2** is the Unconstrained Model with sub groups (low Want & High Want).

**Model 3** is the Constrained Model with sub groups (low Want & High Want).

Table 5.23

*Factors influencing intentions for the Sub groups of Non Users.*

Relationship	Low Want		High Want	
	P Value	Significant Not Significant	P Value	Significant Not Significant.
Attitude → Intention	0.224	Not Significant	***	Significant
SubN → Intention	0.009**	Significant	0.624	Not Significant
PerBC → Intention	0.020**	Significant	0.856	Not Significant

*Note: \*\* represent 5% level of significance and \*\*\* represents 1% level of significance*

The graphics of the relationship of attitude, subjective norm and perceived behavioural control and intention with reference to the low want and high want Non Users are given in Figure 5.9 and Figure 5.10 respectively.

### 1. Non Users with Low Want for internet banking

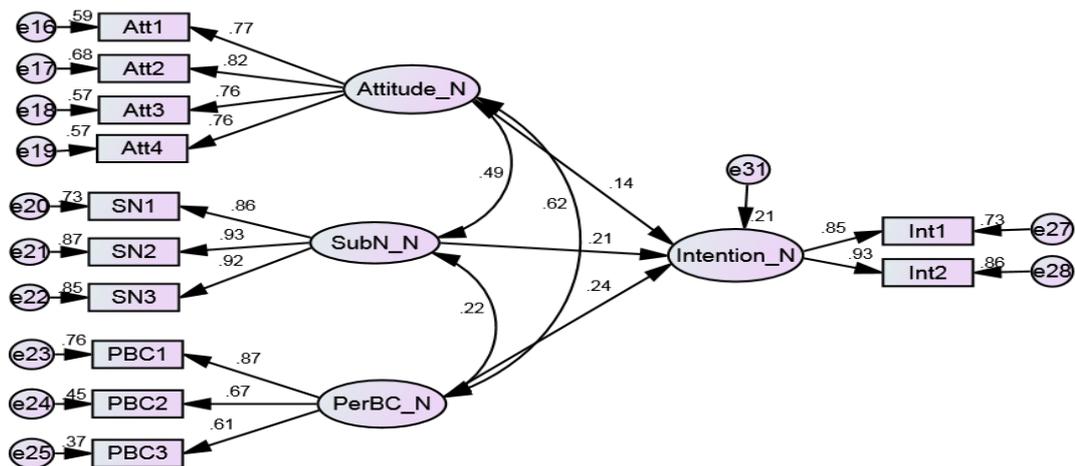


Figure 5.9. TPB model for the non users with Low Felt Want.

### 2. Non Users with High Want for internet banking

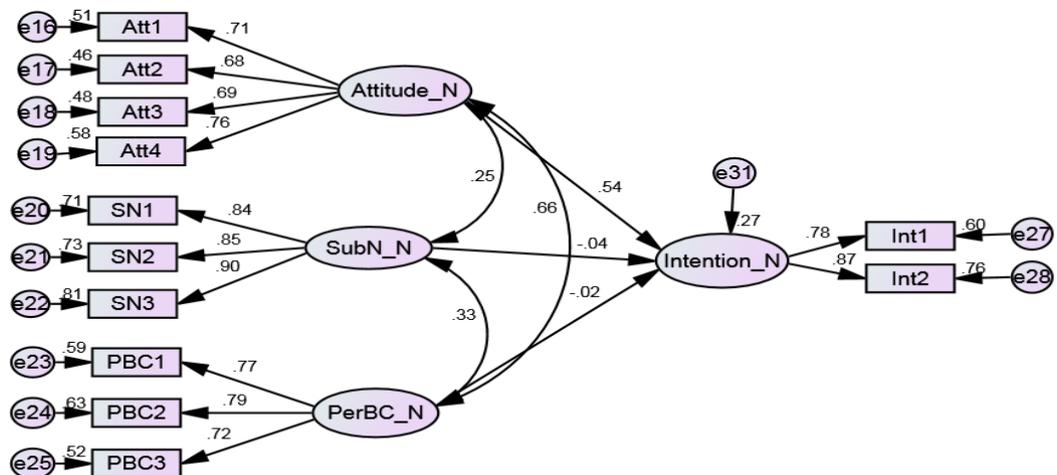


Figure 5.10. TPB model for the non users with High Felt Want.

The results of the multi-group analysis and the relationships stated for the structural models are tested for the hypotheses in the Chapter 6 and a comparative study is done of the users' and the non users' results.

## CHAPTER 6

### DISCUSSIONS AND CONCLUSIONS

This study developed a comprehensive model for the intentions to use internet banking by including the sub models for Felt Want, Attitude and Perceived Behavioural Control along with the Theory of Planned Behaviour model in order to better understand the bank customer's intentions to use internet banking with respect to the users and the non users of internet banking. The study also examined the moderating role of Felt Want in the Theory of Planned Behaviour model. The results of the models analysed in chapter 5 and also the moderating role of felt want analyzed in chapter 5 have been discussed in this chapter. This chapter summarizes the findings of the qualitative study and the quantitative study and examines the hypotheses and results comparatively for the users and the non users of internet banking. This chapter also provides the theoretical contribution and the managerial implications of the study, outlines the limitations of the study, makes suggestions for future research work in the area and gives the conclusions of the study.

#### 6.1 FINDINGS AND DISCUSSIONS OF THE QUALITATIVE STUDY

The semi-structured in-depth interviews conducted with 20 bank customers using internet banking and 20 bank customers not using internet banking, intended to collect data regarding; their perceptions of benefits and risks in using internet banking, their intentions of using internet banking in future, their reasons for using or not using internet banking and their general opinion regarding the internet banking service, provided a deeper understanding of the customer behaviour regarding the use of internet banking services. It also provided useful insights into the factors influencing

their adoption and use and the benefits and risks perceived by them in using internet banking.

The qualitative study revealed that the customers using online banking as well as not using online banking services, perceive benefits as well as risks in online banking. The benefits perceived by bank customers were that internet banking is convenient, it saves time and cost, involves paperless and cashless transactions, is more transparent and facilitates anyplace and anytime banking, is systematic, efficient and better than any other mode of payment. However customers do feel the threat of risks posed through online services which are not felt in branch banking. Almost all the customers face the risk of security and privacy; their account details being known to others or being misused. Most of them faced the risk of losing money, forgetting the password and not being able to successfully execute the online transaction. Inconvenience was also felt due to internet connectivity not being powerful enough or due to the breakdown of the bank's server. Also it was felt that since internet banking is based on technology, if technology fails, internet banking cannot be used. The qualitative study also revealed that most of the respondents using online banking also had other members of their family using online banking as compared to the non users.

The users of online banking have taken their own precautionary measures to minimize their risks in online banking usage. The usage pattern differs among the users of online Banking. Some customers use online banking only to view their account, they are not involved in online payments or fund transfers since they would like to play safe. Most of the others actively involved in online banking use the service for the payments of bills, recharge of mobile phones, dish TV recharge, fund transfer and for

online shopping. A few of them use online banking for booking tickets, for making fixed deposits and recurring deposits and to keep a track of their account.

In spite of being aware of the online banking service provided by their banks and the benefits of using online banking, the non users have still not availed of the service due to various reasons such as; perceived security and privacy risk involved in online banking, use of other products and services such as debit card, credit card and ATM's, satisfaction with branch banking, tedious procedure involved in getting into online banking, use of internet banking by other family members, limited number of bank transactions and not having felt the need for internet banking. Inadequate knowledge and guidance about the operation of online banking and also the benefits and drawbacks of online banking deterred some bank customers from adopting the system. Most of the customers not using online banking intended to avail of the service in future.

The findings of the qualitative study along with literature review enabled the preparation of the questionnaire, formulation of the hypotheses and the development of the research model. The results of the exploratory study gave a clear direction and guidance for the conduct of the research work.

## **6.2 FINDINGS AND DISCUSSIONS OF THE QUANTITATIVE STUDY**

The scale items for the measurement instrument were finalised based on the results of Content Validity, face Validity and pre-testing of the questionnaire. The Data collected on 850 questionnaires from 450 Users of Online Banking and 400 Non Users of online banking were entered using IBM SPSS Version 21. The analysis of the Data, development of the measurement models and the development of the

structural models has been done by employing the technique of SEM (Structural Equation Modeling) using AMOS software Version 22.

This section of the study discusses the results of the relationships tested for the structural model for Felt Want and the structural model for Intention (overall model) for the users and the non users of internet banking. Also a comparative study is done of the factors influencing Felt want, Attitude, Perceived Behavioural Control and intentions towards internet banking for the users and the non users. The moderating role of felt want is examined in the Theory of Planned Behaviour model and the results of low want and high want, users and non users has been discussed. Path analysis is used to test the hypotheses (H1 to H12) at 1% and 5% level of significance. Structural equation models developed in the study are statistical procedures employed for testing measurement, functional, predictive, and causal hypotheses (Bagozzi, & Yi, 2012). The results from AMOS output are used to test the Hypotheses on the basis of the Standardized Regression weights ( $\beta$ ), Critical Ratio (C.R.) should be greater than or equal to 1.96 ( $\geq 1.96$ ), and the Probability Value (P) at 1% and 5% level of significance ( $p < 0.01$ , &  $p < 0.05$  respectively). Chi-square difference test is used to test the hypotheses H13-H15 regarding Felt Want as the moderator at 5% and 10% level of significance.

The results of the analysis done in the previous chapter have been discussed as follows:

6.2.1 Factors influencing Felt Want.

6.2.2 Factors influencing Attitude.

6.2.3 Factors influencing Perceived Behavioural Control.

6.2.4 Factors influencing Intention.

### 6.2.5 Moderating role of felt want.

#### **6.2.1 Factors influencing Felt Want**

The qualitative study found that the construct Felt Want developed in the study is determined by the 5 factors; the services used for the users or services felt required for the non users, satisfaction with branch banking, nature and number of bank transactions, use of internet banking by the family members and the use of substitute products for banking. The influence of these 5 factors identified by the qualitative study has been examined on Felt Want for the users and the non users and a comparative study is being done.

##### **6.2.1a Factors influencing Felt Want for the users and the non users.**

For the users of internet banking Felt Want is positively influenced by the services used, the nature and number of bank transactions and the use of internet banking by the family members. Satisfaction with branch banking and the use of substitute products for banking do not have a significant influence on the Felt Want for the users of internet banking.

Whereas For the non users, Felt Want is positively influenced by the internet banking services felt required and the use of internet banking by the family members and is found to be negatively influenced by the satisfaction with branch banking. Nature and number of bank transactions and the use of substitute products for banking do not have a significant influence on the Felt Want for the non users.

### **6.2.1b Testing of Hypotheses and Comparative study of the factors influencing Felt Want.**

Following observations are made regarding hypotheses testing and the comparative study of the factors influencing felt Want for the Users and Non Users of internet banking:

**1.** For the users of internet banking Felt Want is positively influenced by the services used ( $\beta = .152$  and  $.158$ , C.R. 2.252 and 2.305,  $P < 0.05$ ). Hence the hypothesis **H1** is supported for the users. For the non users also Felt Want is positively influenced by the internet banking services felt required ( $\beta = .395$ , C.R. 7.155,  $P < 0.001$ ). Hence the hypothesis **H1** is supported for the users as well as the non users.

The user's Felt Want for internet banking is determined by the different internet banking services used by them such as; view account statement, bill payment, fund transfer, payment of insurance premiums and online reservations. The non user's Felt Want for internet banking is determined by the different internet banking services felt to be required, which they would like to avail in future. For both the Users and the Non Users of internet Banking, the services used or the services felt to be required have a significant positive influence on the Felt Want for internet banking.

**2.** For the users of internet banking, Satisfaction with branch banking does not have a significant negative influence ( $\beta = -.058$ , C.R.-1.218,  $p 0.223$ ) on the Felt Want. Hence the hypothesis **H2** is not found to be supported for the users. However the negative relationship of Satisfaction with branch banking on Felt Want is found to be significant ( $\beta = -.109$ , C.R.-2.171,  $P < 0.05$ ) for the non users. Therefore hypothesis **H2** is supported for the non users. Hence satisfaction with branch banking has an influence on the felt want for the non users whereas it does not have a significant influence on the Felt Want for the users of internet banking. This shows that when the

non user's Satisfaction with branch banking is low their Felt Want for internet banking would be high. However this finding contradicts with the study by Santouridis and Kyritsi (2014) which did not prove the negative effect of satisfaction with branch banking on behavioural intentions to use internet banking.

**3.** Nature and number of bank transactions has a significant positive influence ( $\beta = .298$ , C.R. 4.694,  $P < 0.001$ ) on the Felt Want for the users of internet banking. Hence hypothesis **H3** is supported for the users. However for non users, the Nature and number of bank transactions does not have a significant positive influence ( $\beta = .046$ , C.R. 0.865,  $P = .387$ ) on their Felt Want. Hence hypothesis **H3** is not supported for the non users. This explains that for the users of internet banking, performing a large number of banking transactions and dealing with huge amount of money in banking transaction will lead to a higher Felt Want for internet banking. This finding is supported by Ramayah et al. (2003) who state that internet banking is perceived to be more useful when the volume of bank transactions are high. However the findings contradict the study by Santouridis and Kyritsi (2014) who observed that the bank customers who are usually involved in transactions which are more complex and of higher volume would prefer branch banking.

**4.** Online banking use by the family members has a significant positive relationship ( $\beta = .110$ , C.R. 2.232,  $P < 0.05$ ) on the Felt Want for the users. Hence the hypothesis **H4** is supported for the users. Online banking use by the family members also has a significant positive relationship ( $\beta = 0.147$ , C.R. 3.063,  $P < 0.05$ ) on the Felt Want for the non users. Hence the hypothesis **H4** is also supported for the non users. The implication of this result is that when the online banking use by the family members is high, the felt want for internet banking will also be high.

5. The results of the data analysis further indicated that the use of substitute products such as mobile banking and mobile Apps for performing financial transactions did not have a significant influence on the Felt Want for the users ( $\beta = -.053$ , C.R.  $-.994$ , P  $.320$ ) as well as the non users ( $\beta = .017$ , C.R.  $0.320$ , P  $.749$ ) of internet banking. Hence Hypothesis **H5** is not supported for both the users and the non users.

6. It can be concluded that Felt Want is explained differently for the Users and the Non Users of internet banking.

7. The mean scores calculated for the items of Felt Want for the Users and the Non Users revealed that Felt Want is comparatively high for the Users as compared to the Non Users as shown in table 5.7.

### **6.2.2 Factors influencing the Attitude towards internet banking.**

The findings of the qualitative study revealed that perceived benefits and perceived risks have an influence on customer's attitude towards internet banking usage. In this study the perceived benefits are classified as benefits of convenience and benefits of user friendliness and the perceived risks are classified into security and financial risk, performance risk and technical risk. The influence of these 5 factors has been examined on the attitude towards internet banking for the users and the non users and a comparative study is being done.

#### **6.2.2a Factors influencing the Attitude of the users and the non users.**

For the users, their attitude towards internet banking is significantly influenced by the perceived benefit of user friendliness, perceived security and financial risk and

perceived technical risk. The perceived benefit of convenience and perceived performance risk do not have a significant influence on the attitude of the users of internet banking.

Considering the influence of perceived benefits and perceived risks on the attitude of the non users, it was observed that the 2 dimensions of perceived benefits; convenience and user friendliness and the 3 dimensions of perceived risks; security and financial risk, performance risk and technical risk, all have a significant influence on the attitude of the non users.

#### **6.2.2b Testing of hypotheses and Comparative study of the factors influencing Attitude.**

The Following observations are made for the testing of hypotheses and the comparative study of the factors; perceived benefits and perceived risk in influencing the Attitude of Users and Non Users of internet banking.

1. The perceived benefit of convenience does not have a significant influence ( $\beta = .029$ , C.R. 0.392,  $P > 0.05$ ) on the attitude of the users of internet banking whereas the perceived benefit of convenience has a significant positive influence ( $\beta = .194$ , C.R. 2.284,  $P < 0.05$ ) on the attitude of the non users of internet banking. Hence Hypothesis **H6a** is not supported for the users, but Hypothesis **H6a** is supported for the non users. This result can be interpreted as; the non users feel that by using internet banking they can have easy access to their bank account and can perform most of their banking transactions on their own, without visiting the bank. Hence they are of the opinion that adopting internet banking to perform their financial transactions is a wise idea. However for the users, it could be that since they have been already using internet banking to perform their banking transactions on their

own, without having to visit the bank, perhaps the perceived benefit of internet banking being convenient to them no longer influences their attitude.

2. The perceived benefit of user friendliness of internet banking has a significant positive influence on the attitude of both the users ( $\beta = .454$ , C.R. 5.648,  $P < 0.001$ ) and the non users ( $\beta = .514$ , C.R. 5.368,  $P < 0.001$ ) of internet banking. Hence the hypothesis **H6b** is supported for the users and the non users. This shows that the bank customers give high importance to the user friendliness of internet banking. The bank customer's perceptions of internet banking being user friendly and an efficient system, and that it is easy for them to gain expertise at using the internet banking services, influences their attitude towards internet banking. This indicates that, higher the bank customer's perceptions of internet banking being user friendly, then more positive will be their attitude towards using the internet banking services.

3. Perceived security and financial risk has a significant negative influence ( $\beta = -.310$ , C.R. -4.446,  $P < 0.001$ ) on the attitude towards using internet banking for the users. The perceived security and financial risk also has a significant negative influence ( $\beta = -.288$ , C.R. -4.029,  $P < 0.001$ ), on the attitude towards using internet banking, for the non users. Hence the hypothesis **H7a** is supported for the users and the non users. This result is supported by (Madinios, Chatzoudes, & Sarigiannidis, 2013) who state that the security risk affects usage intention and that even the more experienced users have not been fully convinced of the safety and security of their online transactions. This indicates that the bank customer's perceptions of their banking transactions not being secured enough and the risk of losing money in financial transactions while using internet banking, influences their attitude towards using the service. Hence the

higher the security and financial risk perceived by them lower would be their attitude towards the adoption and use internet banking.

4. Perceived performance risk does not have a significant influence ( $\beta = -0.070$ , C.R. -1.040,  $P = 0.299$ ) on the attitude of the users of internet banking. Hence the hypothesis **H7b** is not supported for the users. Whereas the perceived performance risk has a significant influence ( $\beta = .167$ , C.R. 2.787,  $P < 0.05$ ) on the attitude of the non users of internet banking. However it is observed that although the relationship between perceived performance risk and attitude is significant for the non users, it is not as hypothesized. The hypothesized relationship is negative whereas the relationship as per the data analysis for the non users is significant positive. Hence the hypothesis **H7b** is also not supported for the non users.

The significant relationship between perceived performance risk and attitude for the non users suggests that, for the non users, their feeling of not having adequate knowledge to perform the internet banking transactions and their perceptions of not being able to successfully perform the internet banking transactions, influences their attitude. Whereas for the users, there is no significant relationship between perceived performance risk and attitude. Hence for the users, it could be said that, as they start using internet banking they develop confidence in their ability to use the system and the fear of performing the transaction wrongly or spending too much time in performing the internet banking transaction does not seem to affect their attitude towards internet banking. Performance risk is generally felt to decline, as users become more familiar with the Internet Banking system. Therefore the influence of Performance risk on attitude may not be important for these sample users.

5. The attitude of the users towards internet banking is significantly influenced ( $\beta = .134$ , C.R. 2.193,  $P < 0.05$ ) by perceived technical risk. However it is observed that although the relationship of perceived technical risk on intention is significant, the relationship is not as hypothesized. The hypothesized relationship is negative whereas the relationship as per the regression output is significant positive. Hence hypothesis **H7c** is not supported for the users.

The attitude of the non users towards internet banking is also significantly influenced ( $\beta = .148$ , C.R. 2.506,  $P < 0.05$ ) by perceived technical risk. However it is observed that although the relationship between perceived technical risks on intention is significant, it is not as hypothesized. The hypothesized relationship is negative whereas the relationship as per the data analysis is significant positive. Hence hypothesis **H7c** is also not supported for the non users.

However the significant relationship of perceived technical risk on the attitude of the users and the non users shows that perceived technical risk has an influence on the attitude of the bank customers. This means that the bank customers' fear, that they shall not be able to use internet banking due to the lack of internet connectivity and the failure of the bank's server influences their attitude towards the adoption and use of internet banking.

6. The mean scores calculated for the items of attitude for the Users and the Non Users revealed that the attitude towards internet banking is comparatively higher for the Users as compared to the Non Users as shown in table 5.12.

Thus it is observed that attitude is explained differently for the Users and the Non Users of internet banking. The non users give importance to the benefits that will accrue from the use of internet banking as well as the risks that they will have to face

in using internet banking. The attitude of the non users of internet banking is significantly influenced by all the different types of perceived benefits and perceived risks. However perceived benefit of Convenience and perceived performance risk does not have a significant influence on the attitude of the Users of internet banking. The results are supported by Ozdemir et al (2008) who studied the adopters and non adopters of internet banking in turkey and found significant differences in their perceptions towards internet banking.

### **6.2.3 Factors influencing Perceived Behavioural Control.**

This study has examined the influence of the factors Self efficacy and facilitating conditions on Perceived Behavioural Control.

#### **6.2.3a Testing of hypotheses and Comparative study of the factors influencing Perceived Behavioural Control for the users and the non users.**

1. The analysis of data shows that Self efficacy ( $\beta = .482$ , C.R. 8.605,  $P < 0.001$ ), and facilitating conditions ( $\beta = .551$ , C.R. 9.218,  $P < 0.001$ ), have a significant influence on the perceived behavioural control for the users. The analysis of data also shows that Self efficacy ( $\beta = .696$ , C.R. 8.797,  $P < 0.001$ ) and facilitating conditions ( $\beta = .292$ , C.R. 4.383,  $P < 0.001$ ), have a significant influence on the perceived behavioural control for the non users. Hence hypothesis **H8** and **H9** are supported for the users and the non users.

2. For the users of internet banking, the facilitating conditions to use internet banking has a higher influence (standardised regression weight, 0.55) on their perceived behavioural control to use internet banking. However for the non users of internet

banking, their self efficacy has a higher influence (standardised regression weight, 0.61) on their perceived behavioural control to use internet banking.

3. The mean scores calculated for the items of perceived behavioral control revealed that the perceived behavioural control over the use of internet banking perceived by the Users is comparatively high as compared to that perceived by the Non Users as shown in the table 5.13.

In the light of the findings of this study it is understood that self efficacy and facilitating conditions have a significant influence on perceived behavioral control for the users as well as the non users of internet banking. The results are consistent with the findings by Zolait (2014).

#### **6.2.4 Factors influencing Intention.**

This study applied the Theory of Planned Behaviour and examined the influence of the factors; attitude, subjective norms and perceived behavioral control on intention.

##### **6.2.4a Factors influencing the Intention of the users and the non users.**

The results of the study revealed that for the users, only their attitude has a significant influence on their intentions to use internet banking whereas subjective norms and perceived behavioural control do not have an influence on their intentions of using internet banking. Whereas the intentions of the non users are significantly influenced by their attitude, subjective norms and perceived behavioral control.

##### **6.2.4b Testing of hypotheses and Comparative study of the factors influencing Intention for the users and the non users.**

1. For the users, their attitude has a significant influence ( $\beta = .385$ , C.R. 7.072,  $P = .001$ ) on their intentions to use internet banking. Hence the hypothesis **H10** is supported for the users. The attitude of the non users also has a significant influence ( $\beta = .462$ , C.R. 8.294,  $P < 0.001$ ) on their intentions to adopt and use internet banking. Hence the hypothesis **H10** is also supported for the non users.

2. Subjective norms do not have a significant influence ( $\beta = .119$ , C.R. 1.859,  $P = .063$ ) on the intentions of the users. Hence the hypothesis **H11** is not supported for the users. However subjective norms have a significant influence ( $\beta = .136$ , C.R. 2.567,  $P < 0.05$ ) on the intentions of the non users. Hence the hypothesis **H11** is supported for the non users.

3. Perceived behavioural control does not have a significant influence ( $\beta = -.048$ , C.R. -.743,  $P = .457$ ) on the intentions of the users. Hence the hypothesis **H12** is not supported for the users. Whereas Perceived behavioural control has a significant influence ( $\beta = .192$ , C.R. 3.471,  $P < 0.001$ ) on the intentions to adopt and use internet banking for the non users. Therefore the hypothesis **H12** is supported for the non users.

4. For the Users of internet banking only their attitude towards internet banking influences their intention to use internet banking. Whereas all the 3 factors: attitude, subjective norm and perceived behavioural control have a significant influence on the intentions of using internet banking for the Non Users. This result confirms with the findings by applying the Theory of Planned Behaviour as in the studies by Bhatt (2011) and AL-Majali, & Mat (2010) and indicate the applicability and ability of the Theory of Planned Behaviour to predict adoption intentions for the non users of internet banking.

5. Attitude towards internet banking is found to be the common factor and the most significant factor influencing the behavioural intentions of both the Users and the Non users. This shows that the bank customer's opinion about internet banking; their positive and negative feelings about using the internet banking service, influences their relative strength of intention to adopt and use internet banking. Attitude towards internet banking also has the highest influence on the intention as compared to subjective norm and perceived behavioural control for both the users and the non users with a standardized beta of 0.39 and 0.46 respectively for the users and the non users. Thus, it can be interpreted that, as the customers have positive attitude towards internet banking, their intentions to use internet banking will be high.

6. Subjective norms are found to have a significant influence on the behavioural intentions of using internet banking for the Non Users. This shows the importance of social pressure in influencing the non user's intention to use Internet banking. The non users can be motivated to use internet banking due to the expectations from their family and friends. This is consistent with the findings of other empirical studies (e.g., AL-Majali, 2011, Tan & Teo, 2000), which indicate the importance of social pressure in influencing customer's behavioural intention to use Internet banking. Customers are more likely to use internet banking if they feel positive influences from others (Abbad, 2013).

However for the users, it could be said that as they are already using internet banking and they know about the features of the service, the opinion of their family members and friends, that they should use internet banking for various banking transactions does not seem to influence their behavioural intentions. Another possible reason why subjective norm does not have a significant influence on the user's intention to use

internet banking could be that, since the relevant information of the functioning of internet banking is readily available from banks and the website, the users do not have to depend on their friends, family, or colleagues for information about these services. Hence the result of the analysis that Subjective norms do not have a significant influence on the behavioural intentions of using internet banking for the Users seems to be in the right direction.

**7.** Perceived behavioural control which is determined by self efficacy and facilitating conditions has a significant influence on the behavioural intentions of using internet banking for the Non Users, which is similar to previous findings by Tan & Teo (2000) and Shih & Fang (2004). Thus for the non users, the availability of the required resources, knowledge and their confidence of being able to successfully perform the online banking transactions influences their intention to use internet banking. Whereas for the customers who are already using internet banking, it can be said that they have the resources, experience and confidence of performing the online banking transactions, hence perceived behavioural control does not seem to influence their intention to use internet banking.

**8.** Thus our study on non users' data supports the Theory of Planned Behaviour. Whereas our study on users data does not fully support the Theory of Planned Behaviour.

**9.** Examining the intention of the bank customers to use internet banking in future, it was observed that the mean scores for intentions are high among the users (Table 5.14) as compared to the non users (table 5.15). Secondly regarding the User's intentions to continue using internet banking in future, 95.4% of the users

either agree or strongly agree to continue using internet banking in future, 4.4% of the users were neutral in their opinion and 1 respondent disagreed to continue using internet banking in future due to the security risk felt and the difficulty in remembering the password. Thus almost all the users have intentions of continuing the use of internet banking and increasing their usage of internet banking in future.

It was also observed that 68.5% of the non users either agree or strongly agree to start using internet banking in future, whereas 22% were neutral in their opinion and 9.5% of the non users disagreed to start using internet banking services in future. Thus majority of the non users have positive intentions to start using internet banking in future.

#### **6.2.5 Moderating role of felt want.**

The study has examined the moderating role of Felt Want on the relationships between the 3 factors; attitude, subjective norms and perceived behavioural control and behavioural intention to use internet banking services (TPB model). The users and the non users were thus segmented into sub groups of low want and high want. Examining the moderating role of Felt Want in the Theory of Planned Behaviour, it was observed that, the influence of attitude, subjective norms and perceived behavioral control on the intention to use internet banking was explained differently for the low want and high want users and the low want and high want non users.

#### **6.2.5a Comparative study of the moderating role of Felt Want in the Theory of Planned Behavior for the Users and the Non Users of internet banking.**

1. In examining the moderating role of felt want in the Theory of Planned Behaviour for the users it was found that for the low want users, only attitude has an influence on their intention to use internet banking and that subjective norms and perceived

behavioral control do not have a significant influence on their intention to use internet banking, whereas for the high want users of internet banking all the 3 factors; attitude, subjective norms and perceived behavioral control do not have an influence on their intention to use internet banking. Studying the moderating role of felt want in the Theory of Planned Behaviour for the non users, it was observed that for the non users with low want, subjective norms and perceived behavioral control have an influence on their intention whereas attitude does not have an influence on their intention to use internet banking. However the observation for the non users with high want for internet banking is just the opposite. The intention of the high want non users to use internet banking is influenced only by their attitude and not by subjective norms and perceived behavioral control.

**2.** The intention of the users with low felt want to use internet banking is found to be influenced only by their attitude. Further analysis of this result could mean that, although the users with low felt want for internet banking have been using internet banking to conduct various financial transactions, their intentions to continue using internet banking in future and their intentions to use internet banking for additional services would be influenced only by their attitude, which refers to their positive or negative feelings towards internet banking, which in turn would be determined by their perceptions of benefits and risks in using the internet banking service.

**3.** The intentions of the high want category of users is not influenced by any of the three factors; attitude, subjective norms and perceived behavioral control. This could perhaps be due to the fact that these users have high felt Want to use internet banking to conduct their various financial transactions. They have been using the internet banking service confidently for performing the banking transactions with convenience

and ease and have accepted it as a beneficial and trustworthy system. Thus due to their high felt want for using internet banking, their intentions to continue using internet banking in future and their intentions to use internet banking for additional services would not be influenced by either their attitude, subjective norms or perceived behavioral control.

4. The moderating role of Felt want in the study revealed that the intention of the low want non users to use internet banking in future was influenced only by subjective norms and perceived behavioural control and not by their attitude. This result could be interpreted as; since the non users have low felt want for using internet banking, their intentions to start using internet banking in future for handling their banking transactions would depend upon the opinions and influence of their family members and friends regarding the use of internet banking, and how much they are motivated to comply by the same. The intentions of the low want non users to use internet banking in future is also influenced by their knowledge, resources available and their ability to operate internet banking with confidence.

5. It is observed that for the high felt want category of non users only their attitude towards internet banking influences their intention to use internet banking in future and that subjective norms and perceived behavioural control do not have a significant influence on their intention to use internet banking. This result could mean that the non users with high felt want for internet banking are already having the knowledge, resources and ability to operate internet banking. Thus their intention to use internet banking in future would only depend on their attitude which refers to their positive or negative feelings towards internet banking, which in turn would be determined by their perceptions of benefits and risks in using the internet banking service.

6. For the high want category of non users and the low want users, the results are similar; it is observed that only their attitude towards internet banking influences their intention to use internet banking.

#### **6.2.5b Analysis of the results of Felt Want as moderator.**

The multi-group analysis conducted for the users and the non users of internet banking by comparing the two groups of low want and high want in the Theory of Planned Behaviour revealed the following:

1. When all the users of internet banking are studied together their intention to use internet banking is significantly influenced only by their attitude and not by subjective norms and perceived behavioural control (Table 5.16). The same results hold good for the users with low felt want. However the intentions of the users with high felt want to use internet banking are not influenced by any of the 3 factors and hence are explained differently (Table 5.21).

2. When all the non users of internet banking are studied together their intention to use internet banking is significantly influenced by all the 3 factors; attitude, subjective norm and perceived behavioural control (Table 5.18). However for the non users with low felt want and high felt want the results are different. The intentions of the non users with low felt want to use internet banking is found to be influenced by subjective norm and perceived behavioural control and not by their attitude. The intentions of the non users with high felt want to use internet banking are found to be influenced only by their attitude and not by subjective norms and perceived behavioural control (Table 5.23).

3. The chi square difference test conducted to test the moderating role of felt want in the Theory of Planned Behavior is not significant for the users (page 173, chapter 5), Also the moderating role of felt want on each of the three relationships between attitude, subjective norms and perceived behavioral control on the intention to use internet banking in the Theory of Planned Behavior is not significant for the users. Hence the hypothesis **H13**, **H14** and **H15** are not supported for the users. Whereas the moderating role of felt want in the Theory of Planned Behavior is significant for the non users data at 5% level of significance (page 177, chapter 5). Also felt want moderates each of the three relationships between attitude, subjective norms and perceived behavioral control on the intention to use internet banking for the non users in the Theory of Planned Behavior. The moderating role of Felt Want for the non users is further supported by the differences in the results for the low want and high want non users and is also supported by the differences in  $R^2$  for the sub groups of low want and high want non users which is 21 and 27 respectively (fig 5.9 and fig 5.10 resp.). Hence the data of the non users fully supports the moderating role of Felt Want. For the non users, the hypothesis **H13**, **H14** and **H15** are supported. It can be concluded that felt want moderates the relationships between attitude, subjective norms and perceived behavioral control on the intention to use internet banking in the theory of planned behavior for the non users of internet banking.

4. For the users of internet banking, it is observed that, although the P value for attitude is significant for the low want users and not significant for the high want users (table 5.21), the results of the chi-square difference test is not significant and hence the moderating effect of Felt Want is not found to be supported. It can be concluded that the moderating role of felt want on the relationships in the theory of planned behavior is not significant enough for the users of internet banking.

To conclude, the study found significant differences in the factors influencing Felt Want, attitude and intention, and also in the moderating role of Felt Want, for the users and the non users. The comparative study of the users and the non users for the determinants of Felt Want, attitude, perceived behavioural control and intention, and also for the moderating role of Felt Want has given significant results and comprehensive understanding of the relationships in the research model.

### **6.3 RESULTS OF HYPOTHESES TESTING AND FIT INDICES: COMPARATIVE STUDY**

The explanation for hypotheses testing for the determinants of Felt want, for the factors influencing attitude, Perceived behavioural control and intention for the users and the non users is given in the previous pages of this chapter. The detailed explanation for the moderating role of felt want in the theory of planned behaviour for the users and the non users is given in Chapter 5.

Hypotheses H1 to H5 for the determinants of Felt want for the users are tested in Table 5.3 and the Hypotheses H1 to H5 for the determinants of Felt want for the non users are tested in Table 5.5. Hypotheses H6a to H12 for the factors influencing attitude, Perceived behavioural control and intention are tested in Table 5.8 for the users and in Table 5.10 for the non users. Hypotheses H13 to H15 for the users are tested on page 173 in chapter 5. The Hypotheses H13 to H15 for the non users are tested on page 177 in chapter 5.

### 6.3.1 Hypotheses testing: Users and Non Users.

A comparison of the hypotheses (H1-H12), tested for the users and the non users regarding the factors influencing Felt want, Attitude, Perceived behavioural control and Intention is given in Table 6.1. These Hypotheses are tested at 1% and 5% level of significance.

Table 6.1

*Results for the Hypotheses tests: Users and Non Users*

No.	Hypotheses	Supported/Not Supported	
		Users	Non-Users
H1	There is a significant positive relationship between the services used/ felt required and the want felt for internet banking.	<b>Supported</b>	<b>Supported</b>
H2	There is a significant negative relationship between the satisfaction with branch banking and the felt want for internet banking.	Not Supported	<b>Supported</b>
H3	There is a significant positive relationship between the nature and number of bank transactions and the felt want for internet banking.	<b>Supported</b>	Not Supported
H4	There is a significant positive relationship between the use of internet banking by the family members and the felt want for internet banking.	<b>Supported</b>	<b>Supported</b>
H5	There is a significant negative relationship between the use of substitute products for banking and the felt want for internet banking.	Not Supported	Not Supported
H6a	There is a significant positive relationship between Perceived benefit of convenience and attitude towards internet banking.	Not Supported	<b>Supported</b>

H6b	There is a significant positive relationship between Perceived benefit of user friendliness and attitude towards internet banking.	<b>Supported</b>	<b>Supported</b>
H7a	There is a significant negative relationship between perceived security and financial risks and attitude towards internet banking.	<b>Supported</b>	<b>Supported</b>
H7b	There is a significant negative relationship between perceived performance risk and attitude towards internet banking.	Not Supported	Not Supported
H7c	There is a significant negative relationship between Perceived technical risk and attitude towards internet banking.	Not Supported	Not Supported
H8	Self efficacy has a significant positive influence on perceived behavioural control.	<b>Supported</b>	<b>Supported</b>
H9	Facilitating conditions have a significant positive influence on perceived behavioural control.	<b>Supported</b>	<b>Supported</b>
H10	There is a significant positive relationship between attitude towards internet banking and behavioural intention towards the use of internet banking.	<b>Supported</b>	<b>Supported</b>
H11	There is a significant positive relationship between subjective norm towards internet banking and behavioural intention towards the use of internet banking.	Not supported	<b>Supported</b>
H12	There is a significant positive relationship between perceived behavioural control on internet banking and behavioural intention towards the use of internet banking.	Not supported	<b>Supported</b>

A comparison of the hypotheses testing (H13-H15) for the moderating role of Felt want, for the users and the non users is given in Table 6.2. These Hypotheses are tested at 5% and 10% level of significance.

Table 6.2.

*Results for Tests of moderating role of felt want: Users and Non Users*

No.	Hypotheses	Supported/ Not Supported	
		Users	Non-Users
H13	The felt want for internet banking moderates the relationship between the attitude towards internet Banking and behavioral intention to use online Banking.	Not Supported	<b>Supported*</b>
H14	The felt want for online banking moderates the relationship between the subjective norms regarding the adoption of internet Banking and the behavioral intention to use internet Banking.	Not Supported	<b>Supported**</b>
H15	The felt want for internet banking moderates the relationship between the Perceived Behavioural Control over using internet Banking and the behavioral intention to use internet Banking	Not Supported	<b>Supported*</b>

\* Supported at 10% level of significance      \*\* Supported at 5% level of significance.

#### **Fit statistics: Users and Non Users**

AMOS output gives a number of Fit Indices all of which may not be taken to examine the model fit. Hair et al. (2017) have suggested that the multiple fit indices to assess the model's goodness of fit should include 1)  $\chi^2$  value associated with  $df$ , 2) One absolute fit Index ( i.e. RMSEA, GFI, or SRMR), 3) One incremental fit Index ( i.e. TLI or CFI), 4) One goodness-of- fit index ( GFI, TLI, CFI, etc.) and 5) One badness-

of fit index (RMSEA, SRMR, etc.). Accordingly the 5 fit indices; CMIN/DF, GFI, TLI, CFI and RMSEA have been considered along with 2 other fit indices: NFI and IFI to examine the fit of the models.

Table 6.3

*Fit Indices for the structural models for Felt Want and TPB for the users.*

Fit Statistics	Recommended Value*	Values for the model for Felt Want	Values for the TPB model
Chi-square/df	$\leq 3.00^{**}$	2.443	2.226
Goodness of Fit Index (GFI)	0-1	0.909	0.958
Normal Fit Index (NFI)	0-1	0.924	0.966
Comparative Fit Index (CFI)	$\geq 0.90$	0.953	0.981
Incremental Fit Index (IFI)	0-1 <sup>**</sup>	0.954	0.981
Tucker Lewis Index (TLI)	0-1	0.944	0.975
Root Mean Square Error of			
RMSEA	$\leq 0.07$	0.057	0.05

\* Criteria according to Hair et al. (2017), \*\*Criteria according to Arbuckle (2014)

Where the recommended value is 0-1, the higher values indicate a better fit (Hair et al., 2017)

The model for Felt Want and the TPB model for the users are having a very good fit.

All the fit indices are within the acceptable range.

Table 6.4

*Fit Indices for the structural models for Felt Want and TPB for the non users.*

Fit Statistics	Recommended Value*	Values for the model for Felt Want	Values for the TPB model
Chi-square/df	$\leq 3.00^{**}$	2.549	2.744
Goodness of Fit Index (GFI)	0-1	0.868	0.950
Normal Fit Index (NFI)	0-1	0.909	0.961
Comparative Fit Index (CFI)	$\geq 0.90$	0.942	0.974
Incremental Fit Index (IFI)	0-1 <sup>**</sup>	0.942	0.975
Tucker Lewis Index (TLI)	0-1	0.934	0.965
RMSEA	$\leq 0.07$	0.062	0.066

\* Criteria according to Hair et al. (2017), \*\*Criteria according to Arbuckle (2014)

Where the recommended value is 0-1, the higher values indicate a better fit (Hair et al., 2017)

The model for Felt Want and the TPB model for the non users are having a good fit.

All the fit indices are within the acceptable range.

The multiple fit indices namely CMIN/DF, GFI, NFI, IFI, TLI, CFI and RMSEA for the 2 individual models; Felt Want and TPB, for the Users (Table 6.3) and for the non users (Table 6.4) are within the acceptable range. The results for the model show a good fit. Comparatively, the multiple fit indices have been found to be better for the users as compared to the non users.

Table 6.5

*Fit Indices for the overall structural model on intention for the users and the non users.*

Fit Statistics	Recommended Value*	Values for the Overall Model for Users	Values for the Overall Model for Non Users
Chi-square/df	$\leq 3.00^{**}$	2.680	2.681
Goodness of Fit Index (GFI)	0-1	0.871	0.848
Normal Fit Index (NFI)	0-1	0.870	0.849
Comparative Fit Index (CFI)	$\geq 0.90$	0.914	0.900
Incremental Fit Index (IFI)	0-1 <sup>**</sup>	0.914	0.900
Tucker Lewis Index (TLI)	0-1	0.904	0.896
RMSEA	$\leq 0.07$	0.061	0.065

\* Criteria according to Hair et al. (2017), \*\*Criteria according to Arbuckle (2014)

Where the recommended value is 0-1, the higher values indicate a better fit (Hair et al., 2017)

The fit for the overall model for intention (Table 6.5) for the users and the non users also gave acceptable results. However the fit indices of the overall models for the users and the non users were lower than the fit indices of the 2 individual models for the users and the non users.

It is observed that the required 5 fit indices namely CMIN/DF, GFI, TLI, CFI and RMSEA are within the acceptable range for the models on intention for the users and the non users, except for the TLI in the overall model for intention for the non users which is 0.896, which is slightly less than the required cut off of 0.9. This is probably because of the inclusion of more constructs and variables in the overall model which has increased its complexity. Hair, Black, Babin, & Anderson (2017) stated that it is not practical to apply or use a single set of cut off rules to all the SEM models and that models that are more complex with larger number of measured variables and larger samples should be subject to less strict criteria for the evaluation of various fit

indices. Secondly RMSEA which tries to explicitly correct for both sample size and model complexity (Hair, Black, Babin, & Anderson, 2017) is 0.065 for the non user's overall model, which is very good and found to be less than the required cut off value of 0.07. Thus it shows that the overall model for intention for the non users is also having an acceptable fit. Based on the summary of the fit indices of the structural models it can be concluded that the structural models have achieved the acceptable fit although the overall models for intention have not achieved excellent results.

### **Variance explained**

The variance explained in Felt Want by the factors; the services used/ felt required satisfaction with branch banking, nature and number of bank transactions and the use of internet banking by the family members was found to be 23% (Fig 5.1 and Fig 5.2) for the users as well as the non users. Thus the model has equal explanatory power for the users and the non users.

The variance explained in attitude by perceived benefits and perceived risks is 41% for the users (Fig 5.3) and 51% for the non users (Fig 5.4). Thus attitude is better explained by perceived benefits and perceived risks for the non users as compared to the users.

A very high percentage of variance in perceived behavioural control is explained by self efficacy and facilitating conditions for both the users as well as the non users. However the variance is higher (93%) for the users as compared to the non users (82%).

The variance explained in the intention to use internet banking by attitude, subjective norm and perceived behavioural control is only 16% for the users (Fig 5.3) whereas it is 29% for the non users (Fig 5.4). Thus the variance explained in intentions is higher

for the non users as compared to the users indicating that the intention to use internet banking is better explained by the non user's data.

#### **6.4 THEORETICAL CONTRIBUTION**

From the theoretical point of view, the results of the present study contribute to the existing literature in a number of ways.

First, this research attempted a different approach in studying the intentions of the bank customers to use internet banking by examining the moderating role of felt want in the Theory of Planned Behaviour and by understanding the differences in the factors influencing intentions for the users and the non users. It is considered that the present study is the first to examine the moderating role of felt want and to make a comparative study of low want and high want, users and non users. Drawing upon the findings, there are indications that the influences of the factors are varied among the low want and high want users and non users.

Second, through the qualitative study undertaken, this study has identified several determinants of Felt Want namely; the services used/felt required, satisfaction with branch banking, nature and number of bank transactions, use of internet banking by the family members and use of substitute products for banking.

Third, an attempt is made through this study to conceptualise, develop and validate an instrument to measure Felt Want and its determinants. The new measurement scales developed for felt want and its determinants may also be used to understand customer's felt want for other technologies.

Fourth, the present study provided a deeper understanding of the influence of perceived benefits and perceived risks on the attitude towards internet banking

adoption and use. The results revealed that the dimensions of perceived benefits and perceived risks have different influences on the attitude of the users and the non users. This study has classified perceived risk differently from previous studies by grouping them in three dimensions; security and financial risk, performance risk and technical risk, thus providing a better understanding of the characteristics of such risks regarding internet banking. A new dimension of technical risk has been identified.

The results of this study support the robustness of the TPB model in explaining the intention to use internet banking for the non users of internet banking. Also in this study, felt want moderates the relationship between attitude, subjective norm and perceived behavioural control and intention to use internet banking services for the non users of internet banking. Thus this study adds to the existing body of knowledge related to technology adoption and consumer behaviour research. Finally, the results of this study could serve as an important benchmark for further research in the area.

### **6.5 MANAGERIAL IMPLICATIONS**

The results of this study have several practical implications and can be of interest to the bankers to motivate increasing number of bank customers to use internet banking. This study has identified the factors influencing attitude and examined the factors influencing intentions of the bank customers to use internet banking. The study has also divided the customers into sub groups of low want and high want users and non users. Thus, understanding the influence of the factors on attitude and on behavioural intentions to use internet banking can help the banks to adopt appropriate strategies in order to encourage their customers to adopt and use the internet banking channel.

This study, by applying the Theory of Planned Behaviour to understand the intentions of the bank customers, found that the customer's attitude, subjective norms towards internet banking and perceived behavioural control on internet banking have an influence on the intentions of the non users to use internet banking in future. However for the users only their attitude had an influence on their intention to continue using and to increase their usage of internet banking. A significant positive relationship between attitude and behavioral intention for the users and the non users suggests that, positive attitude towards the internet banking service could influence individuals to use Internet banking. In this study it was found that both perceived benefits and perceived risks have an influence on the attitude of the bank customers and that attitude has an influence on the intention to adopt and use internet banking. Therefore, the banks should focus on developing strategies to build a positive attitude of the bank customers towards internet banking. Banks can create a positive attitude amongst its customers towards Internet banking by promoting its benefits of convenience and user friendliness and by reducing the risk perceptions of security and financial risk, performance risk and technical risk.

Since perceived benefit of user friendliness has a significant positive influence on the attitude towards adoption and use of internet banking, designing user friendly websites for internet banking which are easy to use and facilitate efficient performance of banking transactions would be of utmost importance to the banks, for attracting more customers and for increasing their usage of internet banking. Using internet banking enables the bank customers to have an easy access to their bank account and facilitates keeping a track of their banking transactions, without visiting the bank. The key to the success of the internet banking channel is that it provides a wide application of banking services to the bank customers at their convenience.

Banks must emphasize on the convenience that internet banking can provide the customers, in order to motivate them to use the service. Thus, the banks should promote the benefits of the Internet banking being convenient and user friendly in order to increase the intentions of the bank customers to adopt and use the Internet banking service.

The security and financial risk has been found to have a strong negative influence on the attitude of the bank customers. The bank customers using internet banking as well as not using internet banking felt that their online banking transactions would be unsafe, unsecured and vulnerable to possible financial loss caused by misuse of their account details. Therefore, it is of top priority for the banks to ensure highest level of security in the internet banking services. Since the bank customers perceive high degree of security and financial risk in online banking transactions, the banks should address these concerns by taking adequate security measures and by informing the customers about the same, also the customers should be educated to take proper precautions to ensure the security of their online transactions. Banks should focus their efforts on adopting risk-reducing strategies that could assist in inspiring high level of confidence in potential customers. Hence, banks must employ advanced security technologies, and focus their promotion campaigns on the privacy and security measures taken for internet banking.

Also the perceived technical risks have been found to have a significant influence on the attitude of the bank customers. Customers are concerned about not being able to perform online banking transactions due to the lack of internet connectivity and due to the failure of the bank's server. Banks should therefore ensure that their internet banking system is free from frequent problems and interruptions in service and that

there is no failure of the bank's server. Banks should ensure that their online banking system is working effectively and efficiently, so as to avoid system failure, which may discourage the adoption and use of the service.

The attitude of the non users of internet banking is also influenced by their perceptions of performance risk. These bank customers feel that their knowledge of using internet banking is inadequate and hence lack confidence in successfully performing the online banking transactions. The banks should therefore educate these customers with basic skills required to conduct internet banking. Hands on Training should be organised by the banks, to educate the customers regarding the safe use of internet banking, so that the willingness to try and adopt the Internet banking service will increase among the non users. Therefore risk perceptions must be controlled for internet banking adoption to grow.

Banks by making Internet banking safe and secured and easy to understand and use, by stressing on the convenience provided and by reducing the complexity in the performance of internet banking, can influence the intention of the bank customers to adopt and use internet banking and can draw more customers towards the service.

For the non users, subjective norms regarding the use of internet banking and their perceived behavioural control over the use of internet banking have an influence on their intentions to use internet banking. The findings of the study show the importance of social pressure in influencing the non user's intention to use Internet banking, thus indicating that, if the current internet banking users are happy they will influence other bank customers to use internet banking. The perceived behavioural control over the use of internet banking is influenced by self efficacy and facilitating conditions.

Banks need to educate the customers who are hindered by the lack of computer skills,

on the basic knowledge and skills required to conduct internet banking. Hence the bank managers could organize hands on training programmes in order to make the non users familiar with the internet banking system and to enable them to operate internet banking on their own.

In examining the moderating role of felt want in influencing the intentions to use internet banking, the bank customers were segmented into sub groups of low want and high want. The moderating role of Felt want in the study revealed that the intentions of the low want non users to use internet banking was influenced by subjective norm and perceived behavioural control. Hence in order to increase their felt want for internet banking and to encourage them to use internet banking, it is important for the banks that the current customers using internet banking should have a good experience and opinion of using internet banking and that they should trust the system, so that they would influence their family members and friends who are not using internet banking, to start using the system. Also the low want non users should be imparted training to provide them the knowledge and skills required to operate internet banking. Thus for the low want non users, the banks will have to put in more efforts in imparting them the knowledge of internet banking, training them to use the system, instilling confidence in them and motivating them to use internet banking. Thus the bankers should try to create high want in the non users with low want and create a positive attitude in them towards internet banking, so that more and more non users will develop the intention to use internet banking.

Secondly for the high want category of non users and the low want users, it is observed that only their attitude towards internet banking influences their intention to use internet banking. Hence the bankers should promote the benefits of internet

banking and adopt risk reduction measures so that the customers develop a positive attitude towards internet banking which in turn will influence the intention of the high want non users to start using internet banking and the intention of the low want users to continue using and to increase their usage of internet banking.

The intentions of the high want category of users is not influenced by any of the three factors, indicating that they have well accepted the internet banking system as beneficial to them to conduct various financial transactions, they have the resources, knowledge and ability to use the system, they trust the system and use internet banking cautiously and confidently, thus perceiving high benefits and low risk. Hence the bank managers need not put in any effort on this category of users as they have well accepted the internet banking system. The bank managers should only ensure that the trustworthiness of these users in the internet banking system is retained by seeing to it that the bank's internet banking system functions efficiently and that there is no breakdown of the bank's server.

Bank Managers should focus on creating positive attitude for the customers towards internet banking so as to influence their intention to use internet banking. Banks should emphasize on the benefits of convenience and user friendliness and promote the message that Internet banking is a safe and secured way of doing banking transactions. When banks market their system, they should give special importance to the potential benefits that result from internet banking usage. Since majority of the non users are willing to use the internet banking services, convincing them about the benefits of internet banking shall increase the number of adopters of internet banking. Since security and financial risk, performance risk and technical risk have detrimental impact on the intention to adopt internet banking, banks should focus their

promotional activities aimed to counteract such negative perceptions. Bank should undertake an aggressive marketing campaign to make the customers aware of the benefits, risk and operation of the internet banking service. Advertising through different media, such as brochures, banners and notices at the banks, web site, email, television, newspapers and radio should be done in order to inform and remind the consumers of the benefits of using Internet banking.

This study which highlights the influence of the factors on the intention to adopt and use internet banking would enable the bankers to take relevant measures to extend the internet banking services among increasing number of customers. This knowledge could also help the bank managers in changing their marketing strategy for promoting internet banking among the non users and also for ensuring the continued use and increase in usage for the users of internet banking. Thus the findings of this study shall facilitate the bankers to formulate strategies for creating, maintaining and enhancing the customer intentions to use internet banking.

## **6.6 LIMITATIONS OF THE STUDY**

1. Since the research was intended to study the intention of the bank customers to use internet banking, the model of the Theory of Planned Behaviour was adopted till intention, as in other studies (Bhatt, 2011; Khanifar et al., 2012; Rouibah, Ramayah, & May, 2011; Zolait, 2014). The intention leading to behaviour is not considered in the study.
2. The influence of attitude, subjective norm and perceived behavioural control on intention is studied in this research by applying the Theory of Planned Behaviour. The

factors influencing intention towards adoption of innovation considered by other theoretical framework are not included in the study.

3. This study is conducted in the state of Goa in India, which has many unique cultural and demographic features, technological exposure and economic policies, hence the findings of this study may not be generalisable to other states and countries.

4. The factors identified as antecedents of Felt Want in this study by using qualitative methods may not be complete and comprehensive thus leaving scope for identification of additional factors contributing to felt want.

5. Factors like changes in Government policies such as demonetisation and the promotion of cashless transactions could influence the customer's attitude towards internet banking and in turn influence their intention to use internet banking.

### **6.7 DIRECTIONS FOR FUTURE RESEARCH**

This study by introducing Felt Want as a moderator in the theory of planned behaviour and by studying the differences between users and non users generates some areas for future research.

1. Similar studies could be done in the context of areas other than internet banking. Future Research could determine the extent to which the results of this study can be generalised to include other technologies.

2. Additional determinants of felt want for internet banking may be explored. Also additional research in other internet technologies like mobile banking, ATM, online shopping is required to confirm the influence of the dimensions of Felt Want studied in this research.

3. The model in the study could be tested by introducing other moderators such as demographic factors and technology related constructs.
4. Another important area of study would be to examine the moderating role of felt want in other Technology Adoption models such as the Theory of Reasoned Action, Technology Acceptance Model and the Unified Theory of Acceptance and Use of Technology.
5. The variance explained for some of the constructs in the study could be improved by including additional variables. Therefore future research should attempt to enhance the explanatory power of the research model by considering the influence of additional variables.
6. Future research could replicate this study in other geographical areas.
7. Also future research should attempt longitudinal studies in order to account for variations in the customer's intention to use Internet Banking over time.

## **6.8 CONCLUSION**

This research has been conducted to better understand the factors influencing the bank customers' intentions to adopt and use internet banking for the non users and the users of internet banking respectively. The comprehensive research model developed for the study includes the Theory of Planned Behaviour model and the 3 sub models for Felt want, Attitude and Perceived Behavioural Control. The models for Felt Want, Intention and the TPB model are tested separately for the users and the non users of internet banking.

The study has adopted the model of the Theory of Planned Behaviour (TPB) as the theoretical foundation to understand customer intentions regarding the adoption and use of the internet banking service, since it was felt that this model best suits the approach of the intended research work. The study has thus examined the influence of the factors; attitude, subjective norms and perceived behavioral control on the intentions to use internet banking and has also examined the moderating role of Felt want on these relationships. The results indicate that all the three factors have a significant influence on the intentions of the non users to adopt and use internet banking, whereas, for the users, only their attitude has an influence on their intentions to use the internet banking service.

The moderating role of felt want on the relationships between attitude, subjective norms and perceived behavioural control on the intention to adopt and use internet banking differed between the users and the non users and the low want and high want users and non users. The results of the analysis on moderation effects indicated that felt want moderates all the three relationships of the Theory of Planned Behaviour model for the non users, however the moderating role of felt want in the Theory of Planned Behaviour model for the users is not found to be significant enough.

The research work identified the determinants of felt want and developed a scale to measure felt want and its determinants. It was supported by this study that perceived benefits and perceived risks have a significant influence on the attitude of the bank customers. This study also found significant differences between the users and the non users regarding the factors influencing Felt want, attitude and intentions towards internet banking.

The study by introducing felt want as the moderator in the theory of planned behaviour and by making a comparative study between the users and the non users of internet banking has made some original contributions in the area of felt want and the intentions to use internet banking.

Since positive attitude of the bank customers is found to have a strong influence on customer's intentions to adopt and use internet banking, the bankers should play a significant role in creating and maintaining positive attitude of the bank customers towards internet banking. The study has provided insights to the bank managers for adopting different strategies for the different categories of bank customers, which could be designed to enhance the customer's perceptions of benefits and to reduce their perceptions of risk towards internet banking.

The findings of the study shall help the bankers to motivate increasing number of non users to adopt and use internet banking. The results of the study shall also guide the banks to ensure continued and increased usage of internet banking by the users. Being internet banking savvy, shall provide the bank customers a lot of convenience in performing their financial transactions and shall thus save their time, effort and cost. Hence increased use of internet banking will help the society in general as the time saved by the bank customers in using internet banking could be put to productive use elsewhere.

Due to the various benefits that internet banking provides and the efforts towards the promotion of a cashless economy, Government could take the initiative of promoting internet banking by offering incentives to bank customers for adopting internet

banking. Also awards could be instituted to the banks and their employees for promoting internet banking. Government could also conduct awareness programmes to inform the people about the benefits of internet banking, the risk involved and the risk reduction measures to be undertaken. Increased awareness created by the Government shall increase the adoption and use of internet banking.

The results of the data analysis using the structural equations modeling, AMOS software, shows that the research model has a good explanatory power in predicting the intentions of the bank customers in using the internet banking services. The comparative study of the users and the non users and low want and high want users and non users has provided a deeper understanding of the approach of the users and non users towards internet banking and the factors influencing their intentions to use internet banking. The study has made some important theoretical and managerial contributions which would be of great help to the academicians and the bank managers alike. The study has also outlined the directions for future research which shall guide future researchers to extend the work in this area.

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## APPENDIX A

### Semi-Structured Interview (Qualitative Study)

#### Questionnaire No 1-----For the Users of Internet Banking

Respondent No. \_\_\_\_\_ Married/ Unmarried\_\_\_\_\_

Occupation\_\_\_\_\_ Educational qualifications\_\_\_\_\_

Income per month\_\_\_\_\_ Age \_\_\_\_\_ Gender\_\_\_\_\_

1. Do you have internet connection at home, for what purpose do you use it?
2. Do you use online Banking?
3. How did you come to know about the Net Banking service?
4. For how long have you been using internet banking and at which bank do you use the online banking service?
5. Are other members of your family using internet banking?
6. Why are you using the internet banking service?
7. Which are the different types of Internet Banking Services that you use and how often do you avail of them?
8. What are the benefits of using internet banking perceived by you?
9. What are the problems faced by you in using the internet Banking service?
10. Do you perceive any risk in internet banking, are there any precautions taken by you?
11. What is your general opinion about the Internet Banking Service?

#### Questionnaire No 2-----For the Non Users of Online Banking

Respondent No. \_\_\_\_\_ Married/ Unmarried\_\_\_\_\_

Occupation\_\_\_\_\_ Educational qualifications\_\_\_\_\_

Income per month\_\_\_\_\_ Age \_\_\_\_\_ Gender\_\_\_\_\_

1. Do you have internet connection at home, for what purpose do you use it?
2. Do you use internet banking?
3. Are you aware of internet banking?
4. How did you come to know about the internet banking service?
5. Are other members of your family using internet banking?
6. Why are you not using the internet banking service?
7. What are the benefits perceived by you in using internet Banking?
8. What are the risks perceived by you in using internet banking?
9. Would you like to use internet banking in future, if so of which bank and why would you want to use internet banking in future?
10. Which are the different types of internet banking services that you would like to use and why?
11. What is your general opinion about Internet Banking.

## APPENDIX B

### Letter to the Expert for Content Validity

Dear Expert,

Kindly refer to the description of the scale items and give your score/rating based on the details given below and the meaning of the dimensions given in Annexure 1. Kindly refer to the instructions given.

Thanking You for your Co-operation,

Prisca Braganza.

#### **Initial item generation:**

In order to generate the initial pool of scale items methods like review of Literature and in-depth interviews were used. The details of the items constructed and to be validated are as follows.

- a) Perceived Benefits -- 33 items
- b) Perceived Risks -- 32 items
- c) Online banking Services used/Required by the bank customers -- 11 items
- d) Nature and number of Bank Transactions -- 4 items
- e) Satisfaction with branch banking -- 11 items
- f) Use of substitute products -- 6 items
- g) Use of Online Banking by the family members -- 6 items
- h) Felt Want For Online Banking -- 6 items
- i) Intention to use internet banking ( for the Users of internet banking) – 6 items.
- j) Intention to adopt and use internet banking (for the Non Users of internet banking) – 4 items.

#### **Rating Guidelines:**

The rater is required to review the statements (test items) based on Relevance, Clarity and Simplicity of the content in each of the dimensions. In the rating sheet the rater is required to indicate the following for all the scale dimensions.

##### 1. Relevance:

Indicate on a scale of 1-4 whether the specified item is relevant as a measure for which it is intended. The ratings are given as follows:

1- Not relevant, 2- Item needs some revision, 3- Relevant but needs minor revision, 4- Very relevant

## 2. Clarity:

Indicate on a scale of 1-4 whether the specified item has clarity in understanding. The ratings are given as follows:

- 1- Not clear,      2- Item needs some revision,      3- Clear but needs minor revision,  
4- Very clear.

## 3. Simplicity:

Indicate on a scale of 1-4 whether the specified item is simple to understand. The ratings are given as follows:

- 1- Not simple,      2- Item needs some revision,      3- Simple but needs minor revision,  
4- Very simple.

**The Scale has been designed to be completed by the Bank Customers both using and not using the Online Banking Service.**

## Annexure 1

**A. Perceived Benefits:** These are the benefits perceived to be enjoyed by using a wide range of financial services by adopting online banking. Perceived benefits are intended to be measured using the 5 point Likert Scale for items relating to:

1. Convenience: Convenience provided by internet Banking can be stated in terms of 24/7 accessibility, comfort, saving time and reduction in physical effort.

2. Cost effectiveness/ Economical/saves cost: the extent to which internet banking has reduced the cost of performing banking transactions in terms of savings in fuel charges, parking fees etc in comparison with the internet charges.

3. Easy to use: the extent to which the bank customer feels Internet Banking would be Easy to use for performing the bank transactions.

4. Efficient system: The extent to which the bank customer feels Internet Banking is a systematic and efficient method of performing bank transactions.

5. Greater Personal control/ fulfillment: The extent to which Internet Banking enables the bank customers to operate their account on their own and have a control over their financial transactions

**B. Perceived Risk:** Perceived risk in online banking as the subjectively determined expectation of loss by an online banking user in contemplating a particular online transaction. To be measured using the 5 point Likert Scale for the following:

1. Security/privacy risk: Risk of private financial information known to others without permission. This is defined as a potential loss due to fraud or a hacker compromising the security of an online bank user.

2. Financial risk: It is defined as the potential for monetary loss due to transaction error or bank account misuse.

3. Performance risk: This refers to losses incurred by deficiencies or malfunctions of online banking websites, breakdown of system servers, lack of proficiency/expertise/adequate knowledge on the part of the customer, wrong entry being made or disconnection from the Internet occurring while conducting the online transactions.

4. Time risk: It refers to the loss of time in learning how to operate online banking or in waiting for the Website to open or the loss of time due to the difficulty of navigation.

**C. Services Felt Required:** These are the online banking services which the respondent would like to avail in future.

**D. Nature and number of Bank Transactions:** The nature of Bank Transactions could be understood on the basis of the financial transaction being made on cash basis or by cashless basis or by the use of credit cards, debit cards, mobile banking, ATM's etc. Number of bank transactions would refer to the volume of payments, collections, fund transfers, deposits etc. in a month.

**E. Satisfaction with branch banking:** It refers to the evaluation of the actual performance of the branch banking in meeting the goals and expectations of the bank customers. Satisfaction with branch banking is the attitude that a customer attains about branch banking based on the quality of services and the functioning of branch banking.

**F. Use of Online Banking by the family members:** It refers to the other members of the family having adopted Online Banking and being involved in performing various transactions using Online Banking.

**G. The use of substitute products for banking:** It refers to the channels and products other than Branch banking used for performing the banking jobs such as ATM's, Mobile banking, Credit cards, Debit cards and various Apps.

**H. Want felt for Online banking:** Desire for using internet banking based on the purpose it would serve and how useful it would be for the bank customer.

**I. Intention to use internet banking (for the Users of internet banking):** It refers to the intentions that a bank customer who is using internet banking, has regarding the use of internet banking in future.

**J. Intention to adopt and use internet banking (for the Non Users of internet banking):** It refers to the intentions that a bank customer who is not currently using internet banking, has regarding the adoption and use of internet banking in future.

[A] Kindly rate the following statements/ items for the construct “**Perceived Benefits**” with the score of 1- 4 for Relevance, Clarity and Simplicity based on the following:

Score and its description:

**Relevant (Rel):** 1- not relevant, 2- item needs some revision, 3- relevant but need minor revision, 4-very relevant.

**Clarity (Cla):** 1- not clear, 2- item needs some revision, 3- clear but need minor revision, 4- very clear.

**Simplicity (Sim):** 1- not simple, 2- item needs some revision, 3- simple but need minor revision, 4- very simple.

**A. Perceived Benefits of using Internet Banking.**

Sr. No.	STATEMENTS	Rel 1-4	Cla 1-4	Sim 1-4
1.	I feel Internet banking facilitates transactions at any time.			
2.	I feel Internet banking facilitates transactions from any place.			
3.	I think Internet banking enables easy access to up-to-date information of my bank Account.			
4.	Online Banking allows banking to be done at leisure.			
5.	I feel Online Banking facilitates banking to be done from the comfort at home or office.			
6.	Online banking enables keeping a track of the account without visiting the bank.			
7.	I feel by using Online Banking I don't have to personally go to the bank to perform most of my Banking jobs.			
8.	I feel Internet banking facilitates Cashless transactions.			
9.	I feel Internet Banking saves the customers from standing in a queue at the bank.			
10.	I feel Internet Banking saves the customers from facing parking problem to go to the bank.			
11.	I think using internet Banking saves the customers from paper work and procedures.			
12.	I think by using the Internet banking I can get data instantly.			
13.	I think by using the Internet banking my banking task can be performed with speed.			
14.	I feel by using the Internet banking I can accomplish my banking jobs more quickly.			
15.	I feel that Internet banking saves my time in performing the banking transactions.			
16.	I would save a lot of time using internet banking.			

17.	I think that the internet banking service does not involve any charges by the bank.			
18.	I feel Internet Banking saves fuel charges required to travel to the bank.			
19.	I feel the internet charges for Online banking are negligible.			
20.	I feel it is cheaper to do banking Online.			
21.	I think that learning to use online banking would be easy.			
22.	I feel Internet Banking is user friendly.			
23.	It is easy for me to become skillful at the use of the Internet Banking services.			
24.	I would find Internet Banking service easy to use.			
25.	I think that it is easy to use online banking to accomplish my banking tasks.			
26.	I can get instant feedback for my transactions through Internet banking.			
27.	I feel internet Banking is Systematic and efficient.			
28.	I feel internet banking is free of error			
29.	I feel by using Internet Banking my banking jobs can be performed accurately.			
30.	I feel by using Internet Banking I can perform my banking jobs on my own.			
31.	I feel Internet Banking facilitates banking transactions to be performed independently by the bank customers.			
32.	I feel Internet Banking enables the bank customers to operate their account by themselves.			
33.	I think by using by internet banking I can have a control over my financial transactions			

**[B] Kindly rate the following statements/ items for the construct Perceived Risks with the score of 1- 4 based on the following.**

Score and its description

Relevant (Rel): 1- not relevant, 2- item need some revision, 3- relevant but need minor revision, 4-very relevant.

Clarity (Cla): 1- not clear, 2- item need some revision, 3- clear but need minor revision, 4- very clear.

Simplicity (Sim): 1- not simple, 2- item need some revision, 3- simple but need minor revision, 4- very simple

### B. Perceived Risks of using Internet Banking.

Sr. No.	Items	Rel 1-4	Cla 1-4	Sim 1-4
1.	I am worried my online banking Account may be hacked.			
2.	I am concerned about the lack of confidentiality of my account information.			
3.	I am afraid my privacy is not protected on the Online Banking website.			
4.	I feel someone may come to know my account details.			
5.	I am worried about using internet banking because other people may be able to access my account.			
6.	I am afraid due to virus my account information may be known to the third party.			
7.	I am afraid my personal information might fall into wrong hands.			
8.	I am worried someone may misuse the information in my online Banking Account			
9.	I am afraid payments and transfers made through online banking may not be processed securely.			
10.	I feel there is no security of personal data in Online Banking.			
11.	During fund transfers and payments, I am afraid that I will lose money due to a wrong entry of the amount of money.			
12.	I am concerned about the possible financial loss that can be caused by my Account details being leaked.			
13.	I am afraid of the possible financial loss that could be caused by virus attacks.			
14.	I am concerned about the financial loss that could be caused due to insufficient security measures taken by the Bank.			
15.	I am afraid during the process of Bill Payment and fund transfers the money may not reach the concerned Party.			
16.	A lot of time is required to learn how to use online banking.			
17.	A lot of time would be required to open the online banking website and to log into the Account.			
18.	I would have to spend a lot of time if the pages are slow to download.			
19.	Much time would be wasted in finding the required links due to the disorganized website.			
20.	I would have to spend a lot of time searching for the required bank services			
21.	A lot of time would be required to complete the Online Banking transaction			

Sr. No.	Items	Rel 1-4	Cla 1-4	Sim 1-4
22.	In case I forget the password much time would be required to get it activated.			
23.	I fear my knowledge of using internet is inadequate.			
24.	I fear I may not be able to successfully execute the online banking transactions			
25.	I am afraid I may forget the password and shall not be able to use the Online Banking Service.			
26.	I am afraid I may make the wrong entry or click the wrong button.			
27.	I am worried that I may not be able to cancel incorrectly entered transaction.			
28.	I am afraid I may not be able to use the Online Banking service due to the Lack of Internet connectivity.			
29.	I am afraid I may not be able to use the Online Banking service due to the failure of the Bank's server.			
30.	Online banking servers may not perform well and may leave the transaction incomplete.			
31.	I am worried I may not be able to make urgent payments and transfer funds due to the Lack of Internet connectivity.			
32.	I am worried that a wrong balance may be shown in my account due to an error in the software.			

[C] Kindly rate the following statements for the Dimension, “**Services felt required**” or “**Services used**” with the score of 1- 4 based on the following.

**Score and its description**

**Relevant (Rel):** 1- not relevant, 2- item needs some revision, 3- relevant but needs minor revision, 4-very relevant.

**Clarity (Cla):** 1- not clear, 2- item needs some revision, 3- clear but needs minor revision, 4- very clear.

**Simplicity (Sim):** 1- not simple, 2- item needs some revision, 3- simple but needs minor revision, 4- very simple.

**C. Services Used/ Felt Required by the bank customer.**

	Items	Rel 1-4	Cla 1-4	Sim 1-4
1	I need to view the account statements for balance and activities information.			
2	I would like to download history and get the Account statement printed.			

3	I need to make payments towards utility bills.			
4	I would want to make payments towards recharge of mobile phone and Dish T.V.			
5	I need to transfer Funds.			
6	I need to make payments towards Insurance premiums, Tax and EMI on Loans.			
7	I need to make payments towards Online shopping.			
8	I would want to make payment for Hotel reservation, conferences, buying tickets of Airlines, railways and bus and for movies			
9	I would want to make Fixed Deposits and Recurring Deposits.			
10	I would want to update my personal data			
11	I would want to request for cheque book, credit card or debit card.			

[D] Kindly rate the following statements for the Dimension, “**Nature and number of Bank Transactions**” with the score of 1- 4 based on the following.

Score and its description:

**Relevant (Rel):** 1- not relevant, 2- item needs some revision, 3- relevant but need minor revision, 4-very relevant.

**Clarity (Cla):** 1- not clear, 2- item needs some revision, 3- clear but need minor revision, 4- very clear.

**Simplicity (Sim):** 1- not simple, 2- item needs some revision, 3- simple but need minor revision, 4- very simple.

#### **D. Nature and number of Bank Transactions**

	Items	Rel 1-4	Cla 1-4	Sim 1-4
1	I perform most of my transactions on cashless basis ( using debit card, credit card, cheque, fund transfers, etc.)			
2	I have large number of bank transactions in a month.			
3	My volume of financial transactions is high.			
4	I handle large volume of banking transactions.			

[E] Kindly rate the following statements for the Dimension, “**Satisfaction with branch banking**” with the score of 1- 4 based on the following.

**Score and its description:**

**Relevant (Rel):** 1- not relevant, 2- item needs some revision, 3- relevant but need minor revision, 4-very relevant.

**Clarity (Cla):** 1- not clear, 2- item needs some revision, 3- clear but need minor revision, 4- very clear.

**Simplicity (Sim):** 1- not simple, 2- item needs some revision, 3- simple but need minor revision, 4- very simple.

**E. Satisfaction with branch banking**

	Items	Rel 1-4	Cla 1-4	Sim 1-4
1	I feel Branch Banking is reliable			
2	I am satisfied with face-to-face interaction with bank officials.			
3	I feel Bank officials are easy to approach and contact.			
4	I feel I can meet the bank officials to seek advice and to clarify my doubts.			
5	I feel I have adequate time for Branch Banking.			
6	I am happy with the operation of branch banking.			
7	I feel the Branch banking method is convenient.			
8	I feel there is no risk involved in branch banking.			
9	I feel by using branch banking I do not have to operate my bank Account independently on my own.			
10	I think I can manage my Banking jobs with Branch Banking.			
11	I feel I am satisfied with branch banking.			

[F] Kindly rate the following statements for the Dimension, the use of substitute products for banking with the score of 1- 4 based on the following.

**Score and its description:**

**Relevant (Rel):** 1- not relevant, 2- item needs some revision, 3- relevant but need minor revision, 4-very relevant.

**Clarity (Cla):** 1- not clear, 2- item needs some revision, 3- clear but need minor revision, 4- very clear.

**Simplicity (Sim):** 1- not simple, 2- item needs some revision, 3- simple but need minor revision, 4- very simple.

**F. The use of substitute products for banking.**

Sr. No.	STATEMENTS	Rel 1-4	Cla 1-4	Sim 1-4
1	I perform most of my financial transactions using ATM			
2	I make most of the payments using Credit Card.			
3	I make most of the payments using Debit Card.			
4	I use the App provided by the bank to make payments and to transfer funds.			
5	I use the Mobile App provided by the service provider to make payments and transfer funds.			
6	I perform most of my financial transactions using Mobile Banking.			

[G] Kindly rate the following statements for the Dimension, “**Use of Online Banking by other members of the family**” with the score of 1- 4 based on the following.

**Score and its description:**

**Relevant (Rel):** 1- not relevant, 2- item needs some revision, 3- relevant but need minor revision, 4-very relevant.

**Clarity (Cla):** 1- not clear, 2- item needs some revision, 3- clear but need minor revision, 4- very clear.

**Simplicity (Sim):** 1- not simple, 2- item needs some revision, 3- simple but need minor revision, 4- very simple.

**G. Use of Online Banking by the family members.**

Sr. No.	STATEMENTS	Rel 1-4	Cla 1-4	Sim 1-4
1	The banking jobs are performed by other members of my family.			
2	The bills are paid by other family members using internet banking.			
3	Fund transfers are executed by other members of my family			

	using internet banking.			
4	The Bank Account details are viewed by other members of my family.			
5	Online Banking transactions are performed by my family members.			
6	Other members of my family are actively involved in online banking.			

**[ H ] Kindly rate the following statements for the Dimension, want felt for online banking with the score of 1- 4 based on the following.**

**Score and its description:**

**Relevant (Rel):** 1- not relevant, 2- item needs some revision, 3- relevant but need minor revision, 4-very relevant.

**Clarity (Cla):** 1- not clear, 2- item needs some revision, 3- clear but need minor revision, 4- very clear.

**Simplicity (Sim):** 1- not simple, 2- item needs some revision, 3- simple but need minor revision, 4- very simple.

**H. Felt Want For Online Banking**

Sr. No.	STATEMENTS	Rel 1-4	Cla 1-4	Sim 1-4
1.	I feel Internet Banking is useful for me to perform my banking jobs.			
2.	I think using internet banking can offer me a wider range of products, services and investment opportunities.			
3.	I think Internet banking is significant for me.			
4.	I feel I would find the Internet Banking service useful.			
5.	I feel internet Banking will solve my banking problems.			
6.	I would want to use internet banking.			

**[ I ] Kindly rate the following statements for the Dimension, User's intention of using internet banking in future with the score of 1- 4 based on the following.**

**Score and its description:**

**Relevant (Rel):** 1- not relevant, 2- item needs some revision, 3- relevant but need minor revision, 4-very relevant.

**Clarity (Cla):** 1- not clear, 2- item needs some revision, 3- clear but need minor revision, 4- very clear.

**Simplicity (Sim):** 1- not simple, 2- item needs some revision, 3- simple but need minor revision, 4- very simple.

**I. Intentions of using internet banking in future (For the Users of Internet Banking).**

Sr. No.	STATEMENTS	Rel 1-4	Cla 1-4	Sim 1-4
1.	I would like to continue using internet Banking in future.			
2.	I would like to use of internet Banking more frequently in future.			
3.	I would like to use internet Banking at more banks in future.			
4.	I would like to use internet Banking for more services in future.			
5.	I would like to increase my usage of internet Banking in future.			
6.	I would like to discontinue the use of internet Banking in future.			

**[ J ] Kindly rate the following statements for the Dimension, Non User's intention of using internet banking in future with the score of 1- 4 based on the following.**

**Score and its description:**

**Relevant (Rel):** 1- not relevant, 2- item needs some revision, 3- relevant but need minor revision, 4-very relevant.

**Clarity (Cla):** 1- not clear, 2- item needs some revision, 3- clear but need minor revision, 4- very clear.

**Simplicity (Sim):** 1- not simple, 2- item needs some revision, 3- simple but need minor revision, 4- very simple.

**J. Intentions of using internet banking in future (For the Non Users of Internet Banking).**

Sr. No.	STATEMENTS	Rel 1-4	Cla 1-4	Sim 1-4
1.	I would like to start using internet banking services in future.			
2.	I intend to use Internet banking soon.			
3.	I would like to use some of the services provided by Internet banking.			
4.	I intend to use Internet banking for handling my banking transactions.			

## APPENDIX C

### Result of Content Validity

The items having an acceptable Item Content Validity Index of 0.78 and above are included in the tables.

**Table 1:** Content Validity Index (CVI) of Subscale- **Online Banking Services Used / felt required by the bank customer.**

Sr. No.	Items	Item CVI
1	I need to view the bank account statements for balance and banking transactions information.	1
2	I would like to download the Account history and get the Account statement printed.	0.857
3	I need to make payments towards utility bills.	1
4	I would want to make payments towards recharge of mobile phones and Dish T.V.	0.857
5	I need to transfer Funds.	1
6	I need to make payments towards Insurance premiums, Tax and EMI on Loans.	1
7	I need to make payments towards Online shopping.	1
8	I would want to make payment for Hotel reservation, conferences, buying tickets of Airlines, railways and bus and for movies	1
9	I would want to make Fixed Deposits and Recurring Deposits.	1
10	I would want to request for cheque book, credit card or debit card.	0.857

**Scale CVI= 0.957**

**Table 2:** Content Validity Index (CVI) of Subscale- **Satisfaction with branch banking.**

Sr. No	Items	Item CVI
1	I feel Branch Banking is reliable	0.857
2	I feel satisfied with face-to-face interaction with bank officials.	0.857
3	I feel Bank officials are easy to approach and contact.	1
4	I feel I can meet the bank officials to seek advice and to clarify my doubts.	1
5	I feel I have adequate time for Branch Banking.	1
6	I am happy with the operation of branch banking.	1
7	I feel the Branch banking method is convenient.	1
8	I feel there is no risk involved in branch banking.	1
9	I think I can manage my Banking jobs with Branch Banking.	1
10	I feel I am satisfied with branch banking.	1

**Scale CVI= 0.97**

**Table 3: Content Validity Index (CVI) of Subscale--Nature and number of Bank Transactions.**

Sr. No.	Items	Item CVI
1	I perform most of my transactions on cashless basis ( using debit card, credit card, cheque, fund transfers, etc.)	1
2	I have a large number of bank transactions in a month.	1
3	My volume of financial transactions is high.	0.857

**Scale CVI= 0.95**

**Table 4: Content Validity Index (CVI) of Subscale-Use of Online Banking by the family members.**

Sr. No.	Items	Item CVI
1	The banking jobs are performed by other members of my family.	1
2	The bills are paid by other family members using internet banking.	1
3	Fund transfers are executed by other members of my family using internet banking.	1
4	The Bank Account details are viewed by other members of my family.	0.857
5	Online Banking transactions are performed by my family members.	1
6	Other members of my family are actively involved in online banking.	0.857

**Scale CVI= 0.95**

**Table 5: Content Validity Index (CVI) of Subscale--The use of substitute products for banking**

Sr. No.	Items	Item CVI
1	I perform most of my financial transactions using the ATM	1
2	I make most of the payments using Credit Card.	1
3	I make most of the payments using Debit Card.	0.857
4	I use the Mobile App provided by the bank to make payments and to transfer funds.	1
5	I use the Mobile App provided by the service provider to make payments and transfer funds.	0.857
6	I perform most of my financial transactions using Mobile Banking.	0.857

**Scale CVI= 0.928**

**Table 6:** Content Validity Index (CVI) of Subscale--**Want Felt For Online Banking**

Sr. No.	Items	Item CVI
1.	I feel Internet Banking is useful for me to perform my banking jobs.	0.857
2.	I think Internet banking is significant for me.	0.857
3.	I feel I would find the Internet Banking service useful.	1
4.	I feel internet Banking will solve my banking requirements.	1
5.	I would want to use internet banking.	1

**Scale CVI= 0.94**

**Table 7:** Content Validity Index (CVI) of Subscale--**Intentions of internet banking usage in future** (for the users of internet banking).

Sr.No.	Items	Item CVI
1.	I would like to continue using internet Banking in future.	1
2.	I would like to use of internet Banking more frequently/often in future.	1
3.	I would like to use internet Banking at more banks in future.	0.857
4.	I would like to use internet Banking for more/additional services in future.	1
5.	I would like to increase my usage of internet Banking in future.	0.857
6.	I would like to <b>discontinue</b> the use of internet Banking in future.	0.857

**Scale CVI= 0.928**

**Table 8:** Content Validity Index (CVI) of Subscale--**Intentions to use internet banking in future** (for the non-users of internet banking).

Sr.No.	Items	Item CVI
1.	I would like to start using internet banking services in future.	1
2.	I intend to use Internet banking soon.	1
3.	I would like to use some of the services provided by Internet banking .	0.857

4.	I intend to use Internet banking for handling my banking transactions.	1
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Scale CVI= 0.96

**Table 9:** Content Validity Index (CVI) of Subscale--**Perceived Benefits of using Internet Banking.**

Sr. No.	Items	Item CVI
1.	I feel Internet banking facilitates transactions at any time.	1
2.	I feel Internet banking facilitates transactions from any place.	1
3.	I think internet banking enables easy access to up-to-date information of my bank Account.	0.857
4.	I feel Online Banking facilitates banking transactions to be done from the comfort at home or office.	0.857
5.	Online banking enables keeping a track of the account without visiting the bank.	0.857
6.	I feel by using Online Banking I don't have to personally go to the bank to perform most of my Banking jobs.	1
7.	I feel Internet banking facilitates Cashless transactions.	1
8.	I feel Internet Banking saves the customers from standing in a queue at the bank.	1
9.	I feel Internet Banking saves the customers from facing parking problem to go to the bank.	0.857
10.	I think using internet Banking saves the customers from paper work.	1
11.	I think by using Internet banking I can get data instantly. I can get instantly data of my bank Account.	1
12.	I think by using Internet banking my banking task can be performed with speed.	0.857
13.	I feel that Internet banking saves time in performing the banking transactions.	0.857
14.	I feel the internet charges for Online banking are negligible.	0.857
15.	Overall I feel it is cheaper to do banking Online.	0.857
16.	I think that learning to use online banking would be easy.	1
17.	I feel Internet Banking is user friendly.	1
18.	It is easy for me to become skillful at the use of the Internet Banking services.	1
19.	I think that it is easy to use online banking to accomplish my banking tasks.	0.857
20.	I can get instant record/report for my transactions through Internet banking.	1

21.	I feel internet Banking is Systematic and efficient.	1
22.	I feel by using Internet Banking my banking jobs can be performed accurately.	1
23.	I feel by using Internet Banking I can perform my banking jobs on my own.	1
24.	I feel Internet Banking facilitates banking transactions to be performed independently by the bank customers.	0.857
25.	I think by using by internet banking I can have a control over my financial transactions	1

**Scale CVI= 0.94**

**Table 10: Content Validity Index (CVI) of Subscale--Perceived Risks of using Internet Banking.**

Sr. No	Items	Item CVI
1.	I am worried that my online banking Account may be hacked.	1
2.	I am concerned about the lack of confidentiality of my account information.	1
3.	I am worried about using internet banking because other people may be able to access my account.	0.857
4.	I am worried someone may misuse the information in my online Banking Account	0.857
5.	I am afraid payments and transfers made through online banking may not be processed securely.	0.857
6.	I feel there is no security of personal data in online banking.	1
7.	During fund transfers and payments, I am afraid that I will lose money due to a wrong entry.	1
8.	I am concerned about the possible financial loss that can be caused by my Account details being leaked.	1
9.	I am afraid of the possible financial loss that could be caused by virus attacks.	0.857
10.	I am concerned about the financial loss that could be caused due to insufficient security measures taken by the Bank.	0.857
11.	I am afraid during the process of Bill Payment and fund transfers the money may not reach the concerned Party.	0.857
12.	A lot of time is required to learn how to use online banking.	0.857
13.	I would have to spend a lot of time if the pages are slow to download.	1
14.	Much time would be wasted in finding the required links due to a disorganized website.	1
15.	I would have to spend a lot of time searching for the required bank services	0.857

16.	A lot of time would be required to complete the Online Banking transaction	0.857
17.	In case I forget the password much time would be required to get it activated.	0.857
18.	I fear my knowledge of using internet is inadequate.	0.857
19.	I fear I may not be able to successfully execute the online banking transactions	0.857
20	I am afraid I may forget the password and hence shall not be able to use the Online Banking Service.	0.857
21	I am afraid I may make a wrong entry while using internet banking.	0.857
22	I am worried that I may not be able to cancel incorrectly entered transaction.	1
23.	I am afraid I may not be able to use the Online Banking service due to the Lack of Internet connectivity.	1
24	I am afraid I may not be able to use the Online Banking service due to the failure of the Bank's server.	0.857
26	Online banking servers may not perform well and may leave the transaction incomplete.	1
26	I am worried I may not be able to make urgent payments and transfer funds due to the Lack of Internet connectivity.	0.857
27.	I am worried that a wrong balance may be shown in my account due to an error in the software.	0.857

**Scale CVI= 0.91**

## APPENDIX D

### Final Measurement Scales

#### Perceived Benefits

Sr. No	Items
1.	I feel Internet banking facilitates transactions at any time.
2.	I feel Internet banking facilitates transactions from any place.
3.	I feel Internet Banking saves transportation cost required to travel to the bank.
4.	I think that learning to use internet banking is easy for me.
5.	I feel by using Internet Banking I can perform most of my banking transactions on my own.
6.	I think internet banking enables easy access to my bank Account.
7.	Internet banking enables keeping a track of my bank account transactions without visiting the bank.
8.	I feel the internet charges for using Online banking are negligible.
9.	I feel Internet Banking is user friendly.
10.	I feel internet Banking is an efficient system.
11.	I feel Internet banking facilitates Cashless transactions.
12.	I feel Internet Banking saves the customers from the physical effort of going to the bank for most of the banking transactions (standing in a queue, vehicle parking etc.).
13.	Overall I feel it is less costly to do banking Online.
14.	It is easy for me to gain expertise at the use of the Internet Banking services.
15.	I feel by using Internet Banking my banking transactions can be performed accurately.
16.	I think by using internet banking I can have a control over my bank Account.
17.	I feel that Internet banking saves time in performing the banking transactions.
18.	I think that it is easy to use internet banking to accomplish my banking transactions.

### Perceived Risk

Sr. No	Perceived Risk
1	I am worried that my online banking Account may be hacked.
2	I am worried that other people may be able to access the details of my online banking account.
3	During fund transfers and payments, I am afraid that I will lose money due to a wrong entry.
4	I am concerned about the possible financial loss that can be caused by my Account details being leaked.
5	A lot of time is required to learn how to use online banking.
6	A lot of time would be required to log into the online banking Account.
7	I fear my knowledge of using internet Banking is inadequate.
8	I fear I may not be able to successfully perform the online banking transactions.
9	I am worried someone may misuse the information in my online Banking Account.
10	I am afraid of the possible financial loss that could be caused by virus attacks.
11	I am concerned about the financial loss that could be caused due to insufficient security measures taken by the Bank.
12	I would have to spend a lot of time searching for the required bank services.
13	I am afraid I may forget the password and hence shall not be able to use the Online Banking Service.
14	I am afraid I may make a wrong entry while using internet banking.
15	I am afraid my bank account information may not be protected in Online Banking.
16	A lot of time would be required to complete the Online Banking transaction.
17	In case I forget the online banking password much time would be required to get it activated.
18	I am afraid I may not be able to use the Online Banking service due to the Lack of Internet connectivity.
19	I am afraid I may not be able to use the Online Banking service due to the failure of the Bank's server.

### Online banking Services used/ Felt required

Sr.No.	Online banking Services used/ Felt required by the bank Customers
1	View the account statements for balance and banking transactions information.

2	Download the Account history
3	Download application forms, deposit slips, interest certificate etc.
4	Making payments towards utility Services (telephone, mobile phone, electricity, DTH etc.)
5	Payment of Insurance premiums, Purchase of insurance policies.
6	Fund Transfer.
7	Payment for online reservations (hotels, cinema tickets, travel tickets).
8	Making Fixed Deposits and Recurring Deposits
9	Request for cheque book, demand draft
10	Update KYC details, Aadhar card number, PAN number, phone number, address etc..

### **Banking related information**

Sr. No	Items
	<b>Satisfaction with Branch banking</b>
1	I feel satisfied with the face-to-face interaction with the bank officials.
2	I am satisfied with the ease to approach the bank officials at the branch.
3	I am happy about the advice provided by the bank officials at the branch.
4	I am happy with the performance of branch banking.
5	I feel satisfied with the convenience of Branch banking.
6	I feel happy there is no risk involved in branch banking.
7	I am happy I can manage my Banking transactions with Branch Banking.
8	I am satisfied with branch banking.
	<b>Nature and number of Bank Transactions</b>
1	I perform most of my transactions on cashless basis ( using debit card, credit card, cheque, fund transfers, etc.).
2	I perform a large number of bank transactions in a month.
3	I deal with huge amount of money in banking transactions.
	<b>The use of Substitute Products for banking</b>
1	I perform my banking transactions using ATM
2	I make payments using Credit Card.

3	I make payments using Debit Card.
4	I use Mobile App to make payments and to transfer funds.
5	I perform my banking transactions using Mobile Banking.
	<b>Use of Online Banking by Family Members.</b>
1	The utility bills are paid by other members of my family using internet banking
2	Fund transfers are performed by other members of my family using internet banking.
3	Banking transactions are performed by my family members using internet banking.
4	Other members of my family use internet banking.
	<b>Want Felt For Online Banking</b>
1	I feel Internet Banking is useful for me to perform my banking jobs.
2	I think Internet banking is significant for me.
3	I feel internet Banking will solve my banking requirements.
4	I would want to use internet banking.

#### **Intentions of Internet Banking usage in future**

Sr. No.	Intention to use internet banking (for the Users of Online Banking).
1.	I would like to continue using internet Banking in future.
2.	I would like to use internet Banking more often in future.
3.	I would like to use internet Banking for additional services in future.
4.	I would like to increase my usage of internet Banking.
Sr. No.	Intention to use internet banking (for the Non Users of Online Banking)
1.	I would like to start using internet banking services in future.
2.	I intend to use Internet banking for handling my banking transactions.

#### **Items relating to the theory of planned behavior being applied to internet banking**

Sr. No.	<b>STATEMENTS</b>
	<b>Attitude</b>
1	I think that using Internet banking is a good idea.

2	I think that using Internet banking for financial transactions would be a wise idea.
3	I think that using Internet banking is pleasant.
4	In my opinion, it is desirable to use Internet banking.
	<b>Subjective Norm</b>
1	People who are important to me would think that I should use online banking.
2	People who influence me would think that I should use online banking
3	People whose opinions are valued to me would prefer that I should use online banking
	<b>Self Efficacy</b>
1	I know enough to operate Internet banking.
2	I would feel comfortable using Internet banking.
3	I could easily operate Internet banking on my own.
	<b>Facilitating Conditions</b>
1	I have the required infrastructure to use online banking.
2	I have the required financial resources to use Internet banking.
	<b>Perceived Behavioural Control</b>
1	I think that I would be able to use internet banking well for my financial transactions.
2	I think that I have the resources, knowledge and ability to use internet banking.
3	I think that using internet banking would be entirely within my control.

## APPENDIX E

### Questionnaire for the Users of internet Banking

Dear Sir/Madam,

The purpose of this questionnaire is to analyse the adoption and usage of internet banking (online banking) by the bank customers and to study the factors influencing their banking behaviour.

Kindly spare some time to answer the following questions. The information provided by you will be kept strictly confidential and the data will be used for academic purpose only.

**Please answer all the questions.**

Thank You for your co-operation and participation in this survey.

#### **A. Personal information:**

Please **tick** [√] the Box provided representing the most appropriate option or fill in the space provided.

1] Age :- \_\_\_\_\_ years

2] Gender :-  Male  Female

3] Marital Status :-  Single  Married

4] Highest Qualifications:-  
i)  SSC (10<sup>th</sup>) or equivalent      iii)  Graduation (Bachelor's Degree) or equivalent  
ii)  HSSC (12<sup>th</sup>) or equivalent      iv)  Post Graduation (Master's Degree) or equivalent  
v)  Doctorate (Ph.D) or equivalent

5] Occupation: i)  Student      ii)  Homemaker  
iii)  Service      iv)  Business  
v)  Professionals      vi)  Retired

#### **B) General information:**

Please **tick** [√] the Box provided representing the most appropriate option or fill in the space provided.

1] Are you aware of internet banking?      Yes       No

2] If Yes then how did you **initially** come to know about the Internet Banking Service?

- i) Informed by the bank
- ii) Through media
- iii) By word of mouth (friends/colleagues/family members)

3] Do you use Internet Banking (Online Banking)? Yes  No

**4] Services used:** How often do you avail of the following Online Banking Services?  
Kindly **Tick** [ ✓ ] the appropriate box for the frequency of use of the internet banking services.

Sr. No	Types of internet Banking Services.	Frequency of use				
		Never 1	Rarely 2	Someti mes 3	Mostly 4	Always 5
1	View the account statements for balance and banking transactions information.					
2	Download the Account history					
3	Download application forms, deposit slips, interest certificate etc.					
4	Making payments towards utility Services (telephone, mobile phone, electricity, DTH etc.)					
5	Payment of Insurance premiums, Purchase of insurance policies.					
6	Fund Transfer.					
7	Payment for online reservations (hotels, cinema tickets, travel tickets).					
8	Making Fixed Deposits and Recurring Deposits					
9	Request for cheque book, demand draft					
10	Update KYC details, Aadhar card number, PAN number, phone number, address etc..					

**Instructions:** Please indicate the extent to which you agree or disagree with each of the following statements. Please **tick** [ ✓ ] distinctly in the boxes provided on a 5 point scale from Strongly Disagree to Strongly Agree with 1 : Strongly Disagree, 2 : Disagree, 3 : Neutral ( neither agree nor disagree) or Can't Say 4 : Agree and 5 : Strongly Agree.

**5] Intentions of Internet Banking usage in future.**

Sr. No.	Items	Strongly disagree	Disagree	Neutral	Agree	Strongly Agree
1.	I would like to continue using internet Banking in future.					
2.	I would like to use internet Banking more often in future.					
3.	I would like to use internet Banking for additional services in future.					
4.	I would like to increase my usage of internet Banking.					

**6] Perceived Benefits of using Internet Banking.**

Sr. No.	Items	Strongly disagree	Disagree	Neutral	Agree	Strongly agree
1.	I feel Internet banking facilitates transactions at any time.					
2.	I feel Internet banking facilitates transactions from any place.					
3.	I feel Internet Banking saves transportation cost required to travel to the bank.					
4.	I think that learning to use internet banking is easy for me.					
5.	I feel by using Internet Banking I can perform most of my banking transactions on my own.					
6.	I think internet banking enables easy access to my bank Account.					
7.	Internet banking enables keeping a track of my bank account transactions without visiting the bank.					
8.	I feel the internet charges for using Online banking are negligible.					
9.	I feel Internet Banking is user friendly.					
10.	I feel internet Banking is an efficient system.					
11.	I feel Internet banking facilitates Cashless transactions.					
12.	I feel Internet Banking saves the customers from the physical effort of going to the bank for most of the					

	banking transactions (standing in a queue, vehicle parking etc.).					
13.	Overall I feel it is less costly to do banking Online.					
14.	It is easy for me to gain expertise at the use of the Internet Banking services.					
15.	I feel by using Internet Banking my banking transactions can be performed accurately.					
16.	I think by using internet banking I can have a control over my bank Account.					
17.	I feel that Internet banking saves time in performing the banking transactions.					
18.	I think that it is easy to use internet banking to accomplish my banking transactions.					

**7] Perceived Risks in using Internet Banking.**

Sr. No	Items	Strongly disagree	Disagree	Neutral	Agree	Strongly agree
1	I am worried that my online banking Account may be hacked.					
2	I am worried that other people may be able to access the details of my online banking account.					
3	During fund transfers and payments, I am afraid that I will lose money due to a wrong entry.					
4	I am concerned about the possible financial loss that can be caused by my Account details being leaked.					
5	A lot of time is required to learn how to use online banking.					
6	A lot of time would be required to log into the online banking Account.					
7	I fear my knowledge of using internet Banking is inadequate.					
8	I fear I may not be able to successfully perform the online banking transactions.					
9	I am worried someone may misuse the information in my online Banking Account.					
10	I am afraid of the possible financial loss that could be caused by virus attacks.					
11	I am concerned about the financial loss that could be caused due to insufficient					

	security measures taken by the Bank.					
12	I would have to spend a lot of time searching for the required bank services.					
13	I am afraid I may forget the password and hence shall not be able to use the Online Banking Service.					
14	I am afraid I may make a wrong entry while using internet banking.					
15	I am afraid my bank account information may not be protected in Online Banking.					
16	A lot of time would be required to complete the Online Banking transaction.					
17	In case I forget the online banking password much time would be required to get it activated.					
18	I am afraid I may not be able to use the Online Banking service due to the Lack of Internet connectivity.					
19	I am afraid I may not be able to use the Online Banking service due to the failure of the Bank's server.					

**8] Items of the theory of planned behavior being applied to internet banking.**

Sr. No.	STATEMENTS	Strongly disagree	Disagree	Neutral	Agree	Strongly agree
	<b>Attitude</b>					
1	I think that using Internet banking is a good idea.					
2	I think that using Internet banking for financial transactions would be a wise idea.					
3	I think that using Internet banking is pleasant.					
4	In my opinion, it is desirable to use Internet banking.					
	<b>Subjective Norm</b>					
5	People who are important to me would think that I should use online banking.					
6	People who influence me would think that I should use online banking					
7	People whose opinions are valued to me would prefer that I should use online banking					

	<b>Self Efficacy</b>					
8	I know enough to operate Internet banking.					
9	I would feel comfortable using Internet banking.					
10	I could easily operate Internet banking on my own.					
	<b>Facilitating Conditions</b>					
11	I have the required infrastructure to use online banking.					
12	I have the required financial resources to use Internet banking.					
	<b>Perceived Behavioural Control</b>					
13	I think that I would be able to use internet banking well for my financial transactions.					
14	I think that I have the resources, knowledge and ability to use internet banking.					
15	I think that using internet banking would be entirely within my control.					

### **9) Banking related information**

Sr. No	Items	Strongly disagree	Disagree	Neutral	Agree	Strongly agree
	<b>Satisfaction with Branch banking</b>					
1	I feel satisfied with the face-to-face interaction with the bank officials.					
2	I am satisfied with the ease to approach the bank officials at the branch.					
3	I am happy about the advice provided by the bank officials at the branch.					
4	I am happy with the performance of branch banking.					
5	I feel satisfied with the convenience of Branch banking.					
6	I feel happy there is no risk involved in branch banking.					
7	I am happy I can manage my Banking transactions with Branch Banking.					

8	I am satisfied with branch banking.					
	<b>Nature and number of Bank Transactions</b>					
9	I perform most of my transactions on cashless basis. ( using debit card, credit card, cheque, fund transfers, etc.)					
10	I perform a large number of bank transactions in a month.					
11	I deal with huge amount of money in banking transactions.					
	<b>Want Felt For Online Banking</b>					
12	I feel Internet Banking is useful for me to perform my banking jobs.					
13	I think Internet banking is significant for me.					
14	I feel internet Banking will solve my banking requirements.					
15	I would want to use internet banking.					

**10] Frequency of use of the banking products and services.** Kindly tick [√] the appropriate frequency.

Sr. No	Items	Frequency of use				
		Never	Rarely	Sometimes	Mostly	Always
	<b>The use of Substitute Products for banking</b>					
1	I perform my banking transactions using ATM					
2	I make payments using Credit Card.					
3	I make payments using Debit Card.					
4	I use Mobile App to make payments and to transfer funds.					
5	I perform my banking transactions using Mobile Banking.					
	<b>Use of Online Banking by Family Members.</b>					
6	The utility bills are paid by other members of my family <b>using internet banking</b>					

7	Fund transfers are performed by other members of my family <b>using internet banking.</b>					
8	Banking transactions are performed by my family members <b>using internet banking.</b>					
9	Other members of my family <b>use internet banking.</b>					

11] Are other members of your family using online banking. Please **tick** [√] either Yes or No. If Yes then kindly also **tick** [√] the options corresponding to Yes.

No     Yes     ➔ Spouse\_\_\_\_ Parents\_\_\_\_ Siblings\_\_\_\_ Children\_\_\_\_

## APPENDIX F

### Questionnaire for the Non Users of internet Banking

Dear Sir/Madam,

The purpose of this questionnaire is to analyse the adoption and usage of internet banking (online banking) by the bank customers and to study the factors influencing their banking behaviour.

Kindly spare some time to answer the following questions. The information provided by you will be kept strictly confidential and the data will be used for academic purpose only.

**Please answer all the questions.**

Thank You for your co-operation and participation in this survey.

#### **A. Personal information:**

Please **tick** [√] the Box provided representing the most appropriate option or fill in the space provided.

1] Age :- \_\_\_\_\_ years

2] Gender :-  Male  Female

3] Marital Status :-  Single  Married

4] Highest Qualifications:-  
i)  SSC (10<sup>th</sup>) or equivalent  
ii)  HSSC (12<sup>th</sup>) or equivalent  
iii)  Graduation (Bachelor's Degree) or equivalent  
iv)  Post Graduation (Master's Degree) or equivalent  
v)  Doctorate (Ph.D) or equivalent

5] Occupation: i)  Student  
ii)  Homemaker  
iii)  Service  
iv)  Business  
v)  Professionals  
vi)  Retired

#### **B) General information:**

Please **tick** [√] the Box provided representing the most appropriate option or fill in the space provided.

1] Are you aware of internet banking? Yes  No

2] If Yes then how did you **initially** come to know about the Internet Banking Service?

- i) Informed by the bank
- ii) Through media
- iii) By word of mouth (friends/colleagues/family members)

3] Do you use Internet Banking (Online Banking)?      Yes                       No

**Instructions:** Please indicate the extent to which you agree or disagree with each of the following statements. Please tick [√] distinctly in the boxes provided on a 5 point scale from Strongly Disagree to Strongly Agree with 1 : Strongly Disagree, 2 : Disagree, 3 : Neutral ( neither agree nor disagree) or Can't Say 4 : Agree and 5 : Strongly Agree.

**4] Intentions to use internet banking in future**

Sr. No	Items	Strongly disagree	Disagree	Neutral	Agree	Strongly agree
1.	I would like to start using internet banking services in future.					
2.	I intend to use Internet banking for handling my banking transactions.					

**5] Perceived Benefits of using Internet Banking.**

Sr. No.	Items	Strongly disagree	Disagree	Neutral	Agree	Strongly agree
1.	I feel Internet banking facilitates transactions at any time.					
2.	I feel Internet banking facilitates transactions from any place.					
3.	I feel Internet Banking saves transportation cost required to travel to the bank.					
4.	I think that learning to use internet banking is easy for me.					
5.	I feel by using Internet Banking I can perform most of my banking transactions on my own.					
6.	I think internet banking enables easy access to my bank Account.					
7.	Internet banking enables keeping a track of my bank account transactions without visiting the bank.					

8.	I feel the internet charges for using Online banking are negligible.					
9.	I feel Internet Banking is user friendly.					
10.	I feel internet Banking is an efficient system.					
11.	I feel Internet banking facilitates Cashless transactions.					
12.	I feel Internet Banking saves the customers from the physical effort of going to the bank for most of the banking transactions (standing in a queue, vehicle parking etc.).					
13.	Overall I feel it is less costly to do banking Online.					
14.	It is easy for me to gain expertise at the use of the Internet Banking services.					
15.	I feel by using Internet Banking my banking transactions can be performed accurately.					
16.	I think by using internet banking I can have a control over my bank Account.					
17.	I feel that Internet banking saves time in performing the banking transactions.					
18.	I think that it is easy to use internet banking to accomplish my banking transactions.					

**6] Perceived Risks in using Internet Banking.**

Sr. No	Items	Strongly disagree	Disagree	Neutral	Agree	Strongly agree
1	I am worried that my online banking Account may be hacked.					
2	I am worried that other people may be able to access the details of my online banking account.					
3	During fund transfers and payments, I am afraid that I will lose money due to a wrong entry.					
4	I am concerned about the possible financial loss that can be caused by my Account details being leaked.					
5	A lot of time is required to learn how to use online banking.					
6	A lot of time would be required to log into the online banking Account.					

7	I fear my knowledge of using internet Banking is inadequate.					
8	I fear I may not be able to successfully perform the online banking transactions.					
9	I am worried someone may misuse the information in my online Banking Account.					
10	I am afraid of the possible financial loss that could be caused by virus attacks.					
11	I am concerned about the financial loss that could be caused due to insufficient security measures taken by the Bank.					
12	I would have to spend a lot of time searching for the required bank services.					
13	I am afraid I may forget the password and hence shall not be able to use the Online Banking Service.					
14	I am afraid I may make a wrong entry while using internet banking.					
15	I am afraid my bank account information may not be protected in Online Banking.					
16	A lot of time would be required to complete the Online Banking transaction.					
17	In case I forget the online banking password much time would be required to get it activated.					
18	I am afraid I may not be able to use the Online Banking service due to the Lack of Internet connectivity.					
19	I am afraid I may not be able to use the Online Banking service due to the failure of the Bank's server.					

**7] Items of the theory of planned behavior being applied to internet banking.**

Sr. No.	STATEMENTS	Strongly disagree	Disagree	Neutral	Agree	Strongly agree
	<b>Attitude</b>					
1	I think that using Internet banking is a good idea.					
2	I think that using Internet banking for financial transactions would be a wise idea.					
3	I think that using Internet banking is pleasant.					

4	In my opinion, it is desirable to use Internet banking.					
	<b>Subjective Norm</b>					
5	People who are important to me would think that I should use online banking.					
6	People who influence me would think that I should use online banking					
7	People whose opinions are valued to me would prefer that I should use online banking					
	<b>Self Efficacy</b>					
8	I know enough to operate Internet banking.					
9	I would feel comfortable using Internet banking.					
10	I could easily operate Internet banking on my own.					
	<b>Facilitating Conditions</b>					
11	I have the required infrastructure to use online banking.					
12	I have the required financial resources to use Internet banking.					
	<b>Perceived Behavioural Control</b>					
13	I think that I would be able to use internet banking well for my financial transactions.					
14	I think that I have the resources, knowledge and ability to use internet banking.					
15	I think that using internet banking would be entirely within my control.					

### **8] Banking related information**

Sr. No	Items	Strongly disagree	Disagree	Neutral	Agree	Strongly agree
	<b>Satisfaction with Branch banking</b>					
1	I feel satisfied with the face-to-face interaction with the bank officials.					
2	I am satisfied with the ease to approach the bank officials at the branch.					
3	I am happy about the advice provided by the bank officials at the branch.					

4	I am happy with the performance of branch banking.					
5	I feel satisfied with the convenience of Branch banking.					
6	I feel happy there is no risk involved in branch banking.					
7	I am happy I can manage my Banking transactions with Branch Banking.					
8	I am satisfied with branch banking.					
	<b>Nature and number of Bank Transactions</b>					
9	I perform most of my transactions on cashless basis. ( using debit card, credit card, cheque, fund transfers, etc.)					
10	I perform a large number of bank transactions in a month.					
11	I deal with huge amount of money in banking transactions.					
	<b>Want Felt For Online Banking</b>					
12	I feel Internet Banking is useful for me to perform my banking jobs.					
13	I think Internet banking is significant for me.					
14	I feel internet Banking will solve my banking requirements.					
15	I would want to use internet banking.					

9] Kindly tick (✓) the appropriate frequency of use for the following statements..

Sr. No	Items	Frequency of use				
		Never	Rarely	Someti mes	Mostly	Always
	<u>Types of Online Banking Services felt to be required.</u> I would like to avail of the following services---					
1	View the account statements for balance and banking transactions information.					
2	Download the Account history.					
3	Download application forms, deposit slips, interest certificate etc.					
4	Make online payments towards utility Services (telephone, mobile phone,					

	electricity, DTH etc.)					
5	Payment of Insurance premiums, Purchase of insurance policies.					
6	Fund Transfer.					
7	Payment for online reservations (hotels, cinema tickets, travel tickets).					
8	Making Fixed Deposits and Recurring Deposits.					
9	Online request for cheque book, demand draft					
10	Update online KYC details, Aadhar card number, PAN number, phone number, address etc..					
	<b>The use of substitute products for banking</b>					
11	I perform my banking transactions using ATM					
12	I make payments using Credit Card.					
13	I make payments using Debit Card.					
14	I use Mobile App to make payments and to transfer funds.					
15	I perform my banking transactions using Mobile Banking.					
	<b>Use of Internet Banking by family members.</b>					
16	The utility bills are paid by other members of my family <b>using internet banking.</b>					
17	Fund transfers are performed by other members of my family <b>using internet banking.</b>					
18	Banking transactions are performed by my family members <b>using internet banking</b>					
19	Other members of my family <b>use internet banking.</b>					

10] Are other members of your family using online banking. Please **tick** [√] either Yes or No. If Yes then kindly also **tick** [√] the options corresponding to Yes.

No  Yes  ➔ Spouse\_\_\_\_ Parents\_\_\_\_ Siblings\_\_\_\_ Children\_\_\_\_

## APPENDIX G

### EFA of Factors influencing Felt Want for the users

Rotated Component Matrix<sup>a</sup>

	Component							
	1	2	3	4	5	6	7	8
Sat5	.848							
Sat4	.829							
Sat2	.825							
Sat8	.798							
Sat3	.789							
Sat7	.767							
Sat1	.744							
Sat6	.643							
ObF3		.939						
ObF2		.920						
ObF4		.883						
ObF1		.868						
WaF2			.889					
WaF4			.856					
WaF3			.809					
WaF1			.802					
SerU4				.731				
SerU7				.678				
SerU5				.671				
SerU6				.605				
SerU10				.555				
SerU9				.532				
SerU8				.520				
SerU2					.849			
SerU1					.689			
SerU3					.576			
SubP5						.877		
SubP4						.874		
NaN3							.857	
NaN2							.826	
SubP1								.768
SubP3								.667

Extraction Method: Principal Component Analysis.  
Normalization. Rotation converged in 8 iterations.

Rotation Method: Varimax with Kaiser

## APPENDIX H

### EFA of factors influencing Felt Want for the Non-User

**Rotated Component Matrix<sup>a</sup>**

	Component					
	1	2	3	4	5	6
SerR9	.871					
SerR5	.848					
SerR10	.835					
SerR8	.835					
SerR6	.830					
SerR3	.807					
SerR7	.805					
SerR4	.794					
SerR2	.706					
SerR1	.638					
Sat8		.797				
Sat2		.793				
Sat1		.792				
Sat4		.779				
Sat7		.777				
Sat3		.766				
Sat5		.760				
Sat6		.673				
ObF3			.969			
ObF2			.950			
ObF1			.942			
ObF4			.933			
SubP4				.902		
SubP5				.898		
NaN3					.903	
NaN2					.900	
SubP1						.833
SubP3						.674

Extraction Method: Principal Component Analysis.

Rotation Method: Varimax with Kaiser Normalization.

a. Rotation converged in 5 iterations.

## Appendix I

### EFA of perceived benefits and Perceived risks for the users

#### EFA of Perceived Benefits

Rotated Component Matrix<sup>a</sup>

	Component	
	1	2
PB14	.772	
PB10	.748	
PB18	.744	
PB15	.723	
PB9	.721	
PB13	.695	
PB8	.634	
PB11	.609	
PB2		.799
PB1		.753
PB6		.705
PB5		.661
PB7		.655

Extraction Method: Principal Component Analysis.

Rotation Method: Varimax with Kaiser Normalization.

a. Rotation converged in 3 iterations.

#### EFA of Perceived Risks

Rotated Component Matrix<sup>a</sup>

	Component		
	1	2	3
PR5	.790		
PR8	.774		
PR7	.764		
PR6	.755		
PR16	.595		
PR12	.531		
PR4		.800	
PR9		.785	
PR10		.778	
PR3		.764	
PR15		.609	
PR19			.816
PR18			.808
PR17			.680
PR13			.540
PR14			

Extraction Method: Principal Component Analysis.

Rotation Method: Varimax with Kaiser Normalization.

a. Rotation converged in 5 iterations.

## APPENDIX J

### EFA of Perceived Benefits and Perceived Risks for the Non Users

#### **1. EFA of Perceived Benefits**

**Rotated Component Matrix<sup>a</sup>**

	Component	
	1	2
PB15	.784	
PB14	.734	
PB9	.711	
PB10	.690	
PB18	.682	
PB16	.678	
PB8	.610	
PB13	.588	
PB4	.541	
PB2		.836
PB1		.780
PB6		.637
PB7		.574
PB5		.545

Extraction Method: Principal Component Analysis.

Rotation Method: Varimax with Kaiser Normalization.

a. Rotation converged in 3 iterations.

#### **2. EFA of Perceived Risks**

**Rotated Component Matrix<sup>a</sup>**

	Component		
	1	2	3
PR4	.834		
PR9	.773		
PR1	.709		
PR3	.708		
PR10	.679		
PR15	.659		
PR11	.637		
PR8		.821	
PR7		.788	
PR5		.787	
PR16		.601	
PR13		.591	
PR18			.839
PR19			.822
PR17			.646

Extraction Method: Principal Component Analysis.

Rotation Method: Varimax with Kaiser Normalization.

a. Rotation converged in 5 iterations.

## APPENDIX K

### Result of Chi-Square test for users

The following Chi-Square test were performed to examine the moderating role of felt want

#### 1. Baseline model and Equal Regression model

	Chi-Square	ddl	P
Model 0	241.894	118	0.00%
Model 1	244.844	121	0.00%
Chi-Square	<b>2.95</b>	<b>3</b>	<b>39.94%</b>

#### 2. Baseline model and Equal Regression of Attitude model

	Chi-Square	ddl	P
Model 0	241.894	118	0.00%
Model 1	243.992	119	0.00%
Chi-Square	<b>2.098</b>	<b>1</b>	<b>14.75%</b>

#### 3. Baseline model and Equal Regression of Subjective norm model

	Chi-Square	ddl	P
Model 0	241.894	118	0.00%
Model 1	241.908	119	0.00%
Chi-Square	<b>0.014</b>	<b>1</b>	<b>90.58%</b>

#### 4. Baseline model and Equal Regression of Perceived Behavioral Control model

	Chi-Square	ddl	P
Model 0	241.894	118	0.00%
Model 1	244.214	119	0.00%
Chi-Square	<b>2.32</b>	<b>1</b>	<b>12.77%</b>

## APPENDIX L

### Result of Chi-Square test for non users

The following Chi-Square test were performed to examine the moderating role of felt want

#### 1. Baseline model and Equal Regression model

	Chi-Square	ddl	P
Model 0	188.568	96	0.00%
Model 1	197.907	99	0.00%
Chi-Square	<b>9.339</b>	<b>3</b>	<b>2.51%</b>

#### 2. Baseline model and Equal Regression of Attitude model

	Chi-Square	ddl	P
Model 0	188.568	96	0.00%
Model 1	191.318	97	0.00%
Chi-Square	<b>2.75</b>	<b>1</b>	<b>9.73%</b>

#### 3. Baseline model and Equal Regression of Subjective norm model

	Chi-Square	ddl	P
Model 0	188.568	96	0.00%
Model 1	194.152	97	0.00%
Chi-Square	<b>5.584</b>	<b>1</b>	<b>1.81%</b>

#### 4. Baseline model and Equal Regression of Perceived Behavioral Control model

	Chi-Square	ddl	P
Model 0	188.568	96	0.00%
Model 1	192.165	97	0.00%
Chi-Square	<b>3.597</b>	<b>1</b>	<b>5.79%</b>

## APPENDIX M

### Publication based on Research

1. Braganza, P. I., & Mekoth, N. (2015). Customer Perceptions of benefits and risks in Online Banking Usage. *Bhruti, Journal of Business and Finance*, Vol.4, 4-16. ISSN: 2321-7685.
2. Braganza, P., & Mekoth, N. (2015). Sources of Awareness and Use by Family Members: Differences between Users and Non Users of Online Banking. *Aloysius Journal of Management and Research*, 3 (3), 43-49, ISSN: 2321-8797.
3. Braganza, P. I., & Mekoth, N. (2017). Reasons influencing Non Adoption and Discontinued Use of Online Banking. *Proceedings of the conference on Fostering Innovation in Financial Inclusion: Bridging Resources and Opportunities [FIFI 2017]*, Manipal University, 240-249, ISBN 978-93-5268-069-6.