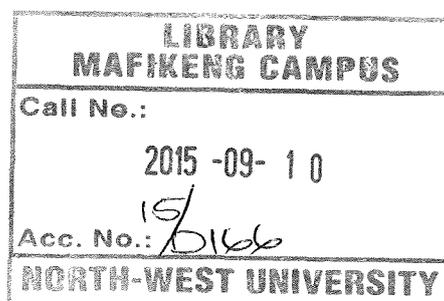


**AN EMPIRICAL INVESTIGATION INTO FACTORS AFFECTING THE  
USE OF BANKING TECHNOLOGIES BY ELDERLY CITIZENS**

by

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**Mini-dissertation submitted in partial fulfillment of the requirements for the  
degree of Master of Business Administration (MBA) at the North-West  
University (Mafikeng Campus)**



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## **DECLARATION**

I, Lebogang Mosolotsane, solemnly declare that this mini-dissertation hereby submitted is of my own accord. I therefore certify that unless stated, all work contained herein is my own to the best of my knowledge. The thesis is being submitted in partial fulfilment of the requirements for the Degree of Masters in Business Administration (MBA) at the Graduate School of Business & Government Leadership, North-West University, Mafikeng Campus. It has not been submitted for any degree or examination at any other University.

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**LEBOGANG MOSOLOTSANE**

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**Date**

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*“One can pay back the loan of gold, but one dies forever in debt to those who are kind”. Malayan Proverb*

## ABSTRACT

In this highly competitive business environment, banks are faced with the challenges of providing products which are relevant to their customers. In a quest of achieving this, there is a possibility of banks to redesign and integrate business processes and channels to achieve better market share. Karjaluoto *et al.* (2002) maintain that banks should keep a close look on how their customers respond towards service and products that are offered to them. This study determined the factors affecting the use of banking technologies by elderly citizens as customers of the banks. A quantitative research methodology was utilised in this study. A survey was conducted and 66 elderly citizens responded to the questionnaire administered to them. The study reveals that elderly citizens have average access to banking technologies and mostly ATM and the actual bank branch. Furthermore, the study reveals that elderly citizens are not comfortable with using technological banking service and products due to lack of trust and confidence and furthermore they prefer human interaction when it comes to banking activities.

# TABLE OF CONTENTS

<b>CHAPTER 1: OVERVIEW OF THE STUDY .....</b>	<b>12</b>
1.1 INTRODUCTION.....	12
1.2 BACKGROUND TO PROBLEM STATEMENT .....	12
1.3 PROBLEM STATEMENT.....	13
1.3.1 Problem Analysis .....	14
1.4 OBJECTIVES.....	14
1.5 RESEARCH DESIGN.....	15
1.6 LAYOUT OF THE STUDY.....	16
1.7 CONCLUSION .....	16
<b>CHAPTER 02: LITERATURE REVIEW .....</b>	<b>18</b>
2.1 INTRODUCTION.....	18
2.2 ELDERLY CITIZENS AND MOBILE BANKING.....	18
2.3 DEFINITIONS .....	19
2.4 TECHNOLOGY IN BANKING .....	20
2.5 ADOPTION AND SERVICE .....	23
2.6 TECHNOLOGY READINESS.....	26
2.7 SATISFACTION AND MOBILE.....	27
2.8 SELF-SERVICE.....	29
2.9 INNOVATION/S.....	31
2.10 TRUST AND MOBILE BANKING .....	33
2.11 RESEARCH QUESTIONS .....	34
2.12 CONCLUSION .....	35
<b>CHAPTER 03: RESEARCH METHODOLOGY .....</b>	<b>36</b>

3.1 INTRODUCTION.....	36
3.2 RESEARCH TYPES .....	36
3.2.1 Qualitative and Quantitative Research .....	36
3.2.2 What Research Method (s) Used In This Thesis? .....	38
3.2.3 What data is required? .....	38
3.3 DATA COLLECTION METHOD.....	38
3.3.1 Methods for collecting primary data .....	38
3.3.2 Questionnaire.....	39
3.3.3 Sampling Method .....	40
3.3.4 Types of variables.....	40
3.4 DATA COLLECTION .....	41
3.5 RESEARCH POPULATION .....	42
3.6 ETHICAL CONSIDERATIONS PERTAINING TO THE STUDY .....	42
3.7 CONCLUSION .....	42
<b>CHAPTER 4: DATA DISCUSSION.....</b>	<b>43</b>
4.1 INTRODUCTION.....	43
4.2 DATA ANALYSIS .....	43
4.3 DATA OF THE STUDY .....	43
4.4 FINDINGS.....	44
4.4.1 DEMOGRAPHIC PROFILES OF RESPONDENTS .....	44
4.4.2 FINDINGS LINKED TO ACCESS TO INFORMATION TECHNOLOGIES AND TECHNOLOGY BASED BANKING SERVICES AND PRODUCTS.....	45
4.4.3 FINDINGS LINKED TO BANKING PRODUCTS AND SERVICES RESPONDENTS WISH TO ACQUIRE.....	46

4.4.4 FINDINGS LINKED TO BANKING PRODUCTS AND SERVICES that respondents have used .....47

4.4.5 FINDINGS LINKED TO TECHNOLOGY ACCEPTANCE AND READINESS .....47

4.5 MEASURES OF ASSOCIATION .....69

4.6 CONCLUSION .....72

**CHAPTER 5: MAIN FINDINGS AND RECOMMENDATIONS .....74**

5.1 INTRODUCTION.....74

5.2 MAIN FINDINGS .....74

5.2.1 Do senior citizen bank customers currently have access to mobile technology based banking products and services more technologically ready for technology based banking services?.....75

5.2.2 Do senior citizen bank customers currently have access to mobile technology based banking products and services more technologically ready for technology based banking services?.....76

5.2.3 Do senior citizen bank customers currently have access to mobile technology based banking products and services more technologically ready for technology based banking services?.....77

5.3 SUMMARY OF FINDINGS.....78

5.4 LIMITATIONS .....79

5.5 RECOMMENDATIONS AND GUIDELINES .....79

5.6 CONCLUSION .....80

**REFERENCES .....81**

**APPENDIX A: MATRIX.....86**

**APPENDIX B: QUESTIONNAIRE .....87**

## LIST OF TABLES

Table 1.1	Problem Analysis	14
Table 2.1	Adoption of Services	24
Table 3.1	Qualitative and Quantitative Research	36
Table 4.1	Demographic Profiles of Respondents	44

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## LIST OF FIGURES

Figure 4.1	Information Technology Banking Services and products that respondents had Access?	45
Figure 4.2	Information Technology Banking Services and products that respondents wish to acquire in the next 12 months?	46
Figure 4.3	Information Technology based Banking services and products that have been used by respondents in the last 12 months	47
Figure 4.4	Mobile technology gives me more control of my daily life?	48
Figure 4.5	Banking services and products that use mobile technology are much more convenient to use?	48
Figure 4.6	I like the idea of banking with mobile technology because I am not limited to business hours	49
Figure 4.7	I prefer the use of most technologies available?	49
Figure 4.8	I like mobile technology that allows me to tailor my needs?	50
Figure 4.9	I find mobile technologies to be mentally stimulating?	51
Figure 4.10	Mobile technology gives me freedom to move?	51
Figure 4.11	Learning about mobile technology can be as rewarding as technology itself?	52

Figure 4.12	I feel confident that mobile technology will do what you tell them to do?	53
Figure 4.13	Other people come to me for advice on mobile technologies?	53
Figure 4.14	It seems like my friends are learning more about mobile technologies than I am?	54
Figure 4.15	In general, I am the first amongst my circle of friends to acquire mobile technologies?	54
Figure 4.16	I can usually figure out mobile technology products and services without help from others?	55
Figure 4.17	I keep up with the latest mobile technologies in my area of interest?	55
Figure 4.18	I enjoy the challenge of figuring out how gadgets work?	56
Figure 4.19	I find I have fewer problems than others in making mobile technology work for me?	56
Figure 4.20	Sometimes I think mobile technology are not designed for use by ordinary people ?	57
Figure 4.21	I do prefer having a basic model, rather, than one with a lot of features?	57
Figure 4.22	It is embarrassing when I have trouble with a mobile technology gadget when people are watching?	58
Figure 4.23	When replacing important people-tasks organizations must be careful because mobile technologies can breakdown or get disconnected?	58
Figure 4.24	Mobile technologies have a health or safety that is not	

	discovered until people have used them?	59
Figure 4.25	Mobile technologies makes it too easy for governments and companies to spy on other people?	59
Figure 4.26	Technology always seems to fail at any possible time?	60
Figure 4.27	I don't think it's safe to give out a credit card number over the phone?	60
Figure 4.28	I do any kind of financial transaction over the cell-phone?	61
Figure 4.29	I don't feel confident with transaction online?	61
Figure 4.30	Any banking transaction you do electronically should be confirmed later with someone in writing?	62
Figure 4.31	There is no such thing as a manual for mobile technology products that is written in plain language	62
Figure 4.32	When I get technical support from a provider of mobile technologies I feel as if I am taken for granted?	63
Figure 4.33	The human touch is very important when banking?	
Figure 4.34	The human touch is very important when banking?	64
Figure 4.35	If I provide information over a machine, I'm never sure if it gets to the right place?	64
Figure 4.36	I Make mobile banking transfers and payments?	64
Figure 4.37	I view accounts and balances through mobile banking?	65
Figure 4.38	I download banking account statements through mobile banking?	65
Figure 4.39	I purchase small items like tickets via banking online services?	66
Figure 4.40	Whenever something gets automated, you need to check carefully that the machine is not making mistakes?	66

Figure 4.41	I Purchase large items like furniture via banking online services?	67
Figure 4.42	I apply for banking services online?	67
Figure 4.43	I buy prepaid airtime via mobile banking?	67
Figure 4.44	I make mobile banking payments and transfers?	68
Figure 4.45	I view accounts and balances via mobile banking?	68
Figure 4.46	I let someone know via email or SMS that you have paid them?	68
Figure 4.47	View and download banking account balances via mobile banking?	69
Figure 4.48	Apply for banking products and services via mobile banking?	69

# **CHAPTER ONE**

## **OVERVIEW OF THE STUDY**

### **1.1 INTRODUCTION**

Many organisations in their pursuit to sustain competitive advantage opt for technology as a natural strategic choice that will align with their business to help maintain a leading position in the market place. The importance of IT continues to expand and to have a dramatic impact on organisations. IT managers are facing problems in justifying the value and contribution of IT expenditure in promoting productivity, quality and strategic competitiveness for organisations. Business and operations are increasingly becoming global in the current IT era; people, goods and services are gradually transforming into mobile processes causing tight competition, this calls for organisation to continuously employ new ways of keeping the competitive edge.

The use of and investment in, IT by banking organisations will continue to increase for two reasons. The first reason is that today virtually everyone is using some kind of IT in their day-to-day activities. Banking organisations cannot afford to be left behind technologically, since many customers are using these systems to manage their money, accounts and savings. Secondly, virtually every effort to enhance the effectiveness and efficiency of banking organisations mandates the use of IT to improve service delivery and reduces costs (Yoon and Steege, 2013). Changes and innovations are needed to stay competitive and continuously meet business needs.

Customers use IT for banking because of the benefits related to the services which includes, more accessibility to banking, convenience offered to them, less costs (e.g. travelling), and time saving irrespective of the customers characteristics (Rojid and Seetana, 2008). This study measures factors that cause reluctance by elderly customers to use IT mobile banking services.

### **1.2 BACKGROUND TO PROBLEM STATEMENT**

Banks are financial institutions that secures customers' funds and related financial instruments, borrows and lends money, and also provide other financial services. Delone and Mclean (2003) reveal that the first modern bank was founded in Genoa (Italy) in 1406; its name was Banco di San Giorgio (Bank of St. George). Previously grain and other goods including cattle, agricultural implements and precious metals such as gold were common

deposits in banks; today the world of banking has evolved into a (Delone and Mclean, 2003):

- Savings and payment engine
- Insurance house
- Credit provider
- Investment conveyor
- Stock trader

The majority of the South African banking industry is dominated by 6 local banks, ABSA, FNB, Nedbank, and Standard-Bank with Capitec and African-Bank leading the credit retail market. The South African banking system is well regulated and is recognized as the most advanced banking system in the African continent (Banking Association of South Africa 2010).

Most research in IT focuses on studying the effectiveness of IT in adding economic value by reducing costs or differentiating its product and service. Bharwadaj (2000) maintains that in a wide variety of circumstances, IT does add value to a firm but Carr (2003) contends that reduction of costs by IT and/or profit maximisation is not the same as IT offering a strategic competitive advantage for the organisation; this present study will allow more elderly customers to use IT banking methods and this will help banks to find a strategic advantage by making their services more usable.

Information Technology literature lacks studies that focus on evaluation of IT usability for banking services (Rose and Fogarty, 2010) and it is of assistance to conduct this study. Banking is by nature IT intense, banks continuously invest substantial resources in IT and it is important for them to become familiar with issues that are holding back the willingness of elderly customers from using IT technologies for banking (Berndt, Saunders and Petzer, 2010).

### **1.3 PROBLEM STATEMENT**

Beshouri and Gravråk (2010) found that formal banking in developing countries like South Africa, reaches about 37% of the population compared with a 50% penetration rate for mobile phones. According to them, South Africa has approximately one bank branch, one ATM and 5100 mobile phones for every 10000 people. They further indicate that 1 billion people in developing countries have mobile phones but they are not using online banking

services. This shows that of the entire population there is still a substantial portion that is unbanked technologically or that not all banking customers use IT banking.

### 1.3.1 Problem Analysis

<b>The problem of</b>	Less usability on IT Banking methods by customers.
<b>Affects</b>	<ul style="list-style-type: none"> <li>• Customers.</li> <li>• Banks.</li> <li>• Government/South African Reserve Bank (Too much cash in transition)</li> </ul>
<b>The impact of which is</b>	<ul style="list-style-type: none"> <li>• Too many manual processes for banks (card creation, ATM &amp; Branch Management).</li> <li>• Inconvenience for customers (costs, travelling, loss of physical cash and more).</li> <li>• Environmental unfriendliness (paper printing).</li> <li>• Limited banking abilities to customers (e.g. banks are closed after business hours, weekends and public holidays)</li> </ul>

**Table 1.1:** Problem Analysis

The contemporary IT banking has been in existence for some time. However, customers are still reluctant to use them.

## 1.4 OBJECTIVES

The main objective of this study is to reveal the causes of reluctance of elderly customers to use IT banking methods. The attention of this study lies on the evaluation of the causes of the low level of IT banking usability by customers. Additionally, the challenges faced by customers, in as far as gaining access and knowledge to banking products and their

ability to make use of banking services, are revealed. This study will establish the issues affecting the adoption of IT banking methods by customers. This will be achieved by looking at different factors affecting the adoption of technological banking usage. Bankers obtain an opportunity to learn more about the characteristics and behaviour of customers around IT banking. Bankers will also learn whether the IT banking methods meet customer needs. The study will also help bankers in the process of developing solutions for customers and improving service delivery.

## **1.5 RESEARCH DESIGN**

According to Zikmund (2000), the design of the research serves as a bridging link between the research questions and the actual running of the research. A deductive research method begins with a theory and uses theory to guide which observations to make as it moves from general to particular (Zikmund, 2000). The observations should provide a test of the worth of the theory. This research uses the deductive approach to research as it aims to test the theory of elderly customer's tentativeness in using IT banking which is offered by most banks in the North-West Province.

Creswell (2003) notes that quantitative research involves gathering data that is absolute, such as numerical data, so that it can be examined in an unbiased manner as possible. It involves the testing of a theory composed of variables, measured with numbers, and analysed using statistical techniques. The goal of quantitative methods is to determine whether the predictive generalization of a theory holds true (Frankfort and Nachmias and Nachmias, 1994). Quantitative research methods are objective, and yield reliable research findings when the sample drawn from the population of study is large in size, and a suitable sampling technique is used for the selection of units from the population of study into the sample. Qualitative research explores attitudes, behaviour and experiences through methods such as interviews or focus groups. It is an approach that is able to encompass interpersonal, social, and cultural contexts more fully (Solutes, 1990).

It attempts to get an in-depth opinion from participants. Some research questions are subjective in nature, and can only be answered adequately by using qualitative research methods such as in-depth interviews and personal observation (Solutes, 1990). Qualitative research is concerned with finding the answer to questions which begin with why?, how?, in what way?, whereas quantitative research is concerned with questions about: how much?, how many?, how often?, to what extent?

## **1.6 LAYOUT OF THE STUDY**

### **Chapter1: Overview**

This chapter discusses the background of the research and related subject matters such as IT and banking, problem statement, objectives of the research, and the design of the research.

### **Chapter 2: Literature Review**

Literature review is presented. This chapter reviews collected works and writings related to the study. Special attention is given to the role of technology in banking, with focus on the usability of IT banking systems by customers. This chapter provides a brief overview of the findings from the literature review to establish a basis for the arguments presented and to indicate why the chosen theories were favoured to develop the research problem.

### **Chapter 3: Research Methodology**

This chapter elaborates the approach employed in conducting this research. The methodology covers the research design, clearly stating the sampling frame and the nature of the study (as a quantitative study involving collection of primary data)

Chapter 4: This chapter discusses the outcomes of the data collection and the actual study data. Formal statistical testing is conducted and a brief interpretation of the results is given.

### **Chapter 5: Research Findings and Recommendations**

This chapter presents a general discussion of the research findings and how they relate to the literature reviewed. This chapter combines the findings from the literature review and the research questions testing to come to a sensible conclusion. This chapter also evaluates the success of the report in achieving what it set out to achieve. Recommendations are made.

## **1.7 CONCLUSION**

As time goes, technology continues to grow. Banking is anyhow motivated by improving technology trends, making banking convenient and simple to customers. Banks should deliver innovated products to customers so that they can stay competitive and meet business needs. Banks should relate to customers in such a way that will allow them to know customer needs.

In this tough economic times where customers are adamant about the value they receive from products and services sold to them, banks should not necessarily provide any services. It is important for the banks to build a relationship across the age sub-segments and effectively offer right products to right customers. As technology grows, banks need to allocate their resources to segments where it can gain more profits and market share.

The next chapter is a Literature Review (Chapter 2). This chapter discusses the origin of ideas on the foundation of the study and also provides an in depth understanding of rationale behind the problem investigated in the study.

## **CHAPTER TWO:**

### **LITERATURE REVIEW**

#### **2.1 INTRODUCTION**

Many researchers have focused on various barriers to the adoption of information technology or Internet (Yiu et al., (2007) but there is limited empirical work that examines the nature and essence of mobile banking in developing countries such as South Africa. This study seeks to uncover barriers preventing elderly people from using mobile banking and electronic media and this chapter reviews literature related to the study. There is a portion of the population that is not using mobile banking for their banking activities.

To search for relevant literature, the key words: information technology in banking, trust and banking, IT frameworks, technology satisfaction, innovation, adoption of technology in banking, self-service in the banking industry, were used to search for articles. Search engines used were Google Scholar and Science Direct.

This chapter (literature review) aims to convey knowledge about banking and technology in general, and to convey knowledge about the subject of mobile banking. The chapter will include the following: an overview of the barriers facing the elderly customers in adopting banking technology; experiences in different countries on banking technology; the characteristics of the elderly citizens; the stipulations of various models in as far as adoption technology affects the elderly market; and an overview of the features of the banking technologies. The overviews emanate from the arranged literature matrix (Appendix A).

#### **2.2 ELDERLY CITIZENS AND MOBILE BANKING**

The elderly have been ignored as users of technology since they are believed to be both dismissive and unable to adapt to technology. The elderly may experience age-related impairments, such as deterioration of vision, memory and impaired intellectual ability but they might still be able to perform certain activities or use certain devices (Karahasanovic et al., 2009). This study seeks to uncover barriers limiting elderly citizens from using mobile banking.

## 2.3 DEFINITIONS

According to Polat (2012), the digital divide is the inequalities in access to the Internet; extent of use; knowledge of search strategies; and the lack of access to other Information and Communication Technology (ICT) services such as access to a computer and phone. The digital divide exists globally.

Technology readiness (TR) is one of the factors that encourages or delays the adoption of new technologies (Liljander, 2006). Empirical research to back up this claim is scarce. TR can be seen as customers' tendencies to hold and use new innovations for accomplishing desired goals, but there are not enough research results available to support this theory, because many empirical studies have failed to confirm the expected relationship between technology readiness and customers' behaviour (Liljander, 2006).

Internet banking is defined as the delivery of banking services through the connected computer networks (the Internet) directly to the customer's point of location. Internet does not restrict banks to geographical boundaries and it offers a range benefits, such as accessibility, convenience and ease of banking (Yiu et al., 2007).

The main intention of using the Technology Acceptance Model (TAM) is the ability it offers (Yiu et al. 2007) to determine how individual customer beliefs and attitudes relate towards using technology, in this case mobile banking, and whether or not the system is used as intended. Bankers are interested in customer's behaviour in adopting Internet Banking. Yiu et al. (2007) claim that banking customers have already established personal banking norms, finance management systems, and account monitoring instruments before the inception of mobile banking. Their acceptance or rejection of this new innovation will rely on the extent that this new innovation accommodates or rejects all or some of the past values.

Mobile banking refers to the multimedia development of remote banking services for end-users (retail remote banking) and it support communications services between banks and customers, general information services, personal information services and transaction services (Garrone and Colombo, 1999). Making use of mobile banking makes use of a telecommunications network to access personal or company accounts, request consultancy, make payments, purchase banking, financial or insurance products (Garrone and Colombo, 1999). Hanafizadeh et al. (2012) also support that mobile banking is helpful to the low-income individual because they have a strong need for access to banking services.

According to Rampersad et al. (2012), innovation is a process of transforming opportunities from ideas to a widely used practice or instrument. Innovation helps companies to find competitive advantage and assist firms in surviving adverse global financial conditions. Innovation has become a priority in the production policies of many countries (Rampersad et al. 2012). Innovation is on the President Obama's top list of administration policies in the United States of America and it is also part of major priorities in the policies and strategic research in many countries such as the United Kingdom, Australia, India and China.

## **2.4 TECHNOLOGY IN BANKING**

Emerging technologies impact on customers' service needs to be examined by banks so that efficient resources can be offered to different market segments. Enjoying full citizenship in the information technology era requires new individuals to have educational competencies, skills and access to the technology itself. According to Polat (2012) many people are disadvantaged by social problems such as poverty and illiteracy, from being fully active in the online world. Turkey as a developing country with a small population and a growing economy, has shown a strong growth on the adoption of internet and use of related technology (Polat, 2012). However, the country has a digital divide and inequality issues which still need to be resolved. Turkish Internet usability has increased from 7% in 2004 to 43% in 2011. Although there is a significant growth there is still a large portion of the population that is not active in virtual banking.

Internet Banking is becoming one of the most common technological advances in banking, changes the way business is done in Hong Kong retail banks (Yiu *et al.* 2007). In order for banks to respond positively to global trends, they have to understand their customers and quickly respond strategically to the market because Internet Banking alone is not enough for competitive advantage (Yiu *et al.* 2007). Banks should also offer incentives to customers in order to promote Internet Banking usage. Estonia launched the first Internet Banking 1996 (Estonian Banking Association, 2002) and since then they have witnessed a penetration of usage, with 45 per cent of the population (ages 15-74) active in Internet Banking (Eriksson *et al.* 2004). However, higher adoption of internet banking in Estonia remains the extreme case among Central Eastern European (CEE) countries (Eriksson *et al.* 2004).

Research shows that Asia Pacific Internet Banking will realize a usage growth of about 45.5 million users in the next few years (Agarwal *et al.* 2009) and there is a growth in online banking services being launched by banks. Yiu *et al.* (2007) further allege that in order to stay competitive, banks should shift away from typical bases of retail bank competition controlled by fees, interest and customer loyalty, to a freshly brewed internet based type of competition dictated by reduction of cost, responsiveness, credibility, security and ease of use.

Using Internet banking as a business model offers considerable opportunities for banks and could result in a good market share (Yiu *et al.* 2007). Internet Banking would not only provide funds for banks, but will also allow market opportunities to shape the market to technology and management of customer expectations. Internet banking customers show preference of fairly low risk activities, products and services. In this regard, banks should instil service quality, credibility and responsiveness in their Internet Banking services; banks should also communicate with and teach customers about recent innovations available in their services and other quick and easy tools (Yiu *et al.* 2007). Liao and Cheung (2002) stress customers quality attributes are security, accuracy, transaction speed and convenience.

Looking at the manner in which Internet banking is structured, I think it is backward to realise that the main use is related to activities that minimise operating costs. Banks need to boost confidence in using Internet Banking services as compared to focusing on cost reduction. Yiu *et al.* (2007), argue that banks should strive to encourage customers to use Internet Banking services and show them related benefits.

Justification of the existence of bank branches may contribute to communities suffering cross cutting, though Argent (2002) argues that closure of bank branches in Australian rural areas disadvantages individual consumers, inconvenience local businesses and causes a huge impact on economic development in the area. Belgium's branch foot print went down from 8000 to 5000 from 1985 to 2004, and this was caused by, among others, banks minimising operational costs with the use of technology (Huysentruyt *et al.* 2013). Technology can offer banks an escape point from high operational costs (Demirguc-Kunt and Huizinga, 2013). Technology can minimise costs for banks, but it may have certain impact on customers and other parties. It may be tough to generalise the impact because

some components of the population are flexible to reorganise their banking needs but other, like elderly and disabled, may find it tough; thus, removal of branches may affect the least technologically mobile, least physically able and those who cannot afford more (Argent, 2002). The branch as a fore front sale face of the bank's products and services has been challenged by the diffusing of technology and other substitutes like self-service terminals, Internet Banking, telephone banking and partnership with other commercial entities such as supermarkets (Argent, 2002).

Mobile banking is a part of electronic banking that involves billing and paying for goods and services using a mobile device (Lu *et al.* 2011). In America, about 5% of 25 million technology active banking services users make use of mobile banking (Hanafizadeh *et al.* 2012). This is lower than in Germany were 12% use their cell phones for banking (Hanafizadeh *et al.* 2012). Though there is an increasing desire to use mobile banking, industry experts were expecting a higher diffusion rate (Hanafizadeh *et al.* 2012).

Electronic banking research produces conflicting evidence on variables associated with the use of electronic banking. Guerrero *et al.* (2007), find that individual variables, like age, occupation, income, and education, relate more to the use of electronic banking though this study did not find strong relationships between respondents' demographic characteristics and the tendency to use electronic banking. On the contrary, most studies show strong influences electronic banking usage in relation to educational level, income, occupation, and age (Guerrero *et al.* 2007).

Although ICT studies found the following variables to be significant (marital status, gender, educational level, income, occupation, and family size), young people (from 18 to 35 years of age) are the most active population in the use of electronic banking (Guerrero *et al.* 2007) and adults are interested in using electronic banking. Hanafizadeh *et al.* (2012) also allege that younger people in America use their cellphone for banking and shopping. Guerrero *et al.* (2007) state that a typical user of electronic banking services is a relatively young, well-educated person, with a balanced income and a good job. According to Guerrero *et al.* (2007) electronic banking users are individual customers with a strong educational background and computer literate. Users need new market segments and frequently changing business processes that make their lives easy, according to Garrone and Colombo (1999) multimedia services may meet new user needs. There is an IT

transition in the lives of 55 to 65 year olds (Salovaara *et al.* 2010), Examining the technology usage of elderly people could be a good research focus.

## **2.5 ADOPTION AND SERVICE**

The Internet was only accessed by a vast minority during its inception stage. As the adoption of internet steadily grew, customers remained hesitant to use it for banking related purposes. Banks should strongly consider using tactics and create campaigns that will promote more adoption of technology for banking service (Lu *et al.* 2011). A delayed adoption of technology usage has a huge impact on per capita income, development of skill and gross domestic production of a country (Hanafizadeh *et al.* 2012). The delay is mostly caused by the related costs in using the technology (Hanafizadeh *et al.* 2012). They also concluded that there is a negative correlation with cost and the intention to use mobile banking. Lack of knowledge of technology plays a role in customers delay to adopt technology (Grantham and Tsekouras, 2005). It is important to take note of these challenges in order to establish methods which can increase adoption.

Electronic banking offers the bank an opportunity to operate in a broad geographical horizon with new markets. Electronic banking is an important source of stimulating geographical diffusion of banking (Diniz *et al.* 2012). Banks should continuously review technology they use and establish certain mergers that will fit in their technology to promote more adoption in the use of their banking services (Yiu *et al.* 2007). Elderly people may be resistant to change but they do adopt new innovations that are mostly suitable to their needs and those that are easy for them to use (Ryu *et al.* 2009). Direct interaction with elderly users shows to be working, unlike relying on marketing practices with the expectation that training can change attitudes of elderly people towards technology (Ryu *et al.* 2009). Ryu *et al.* also state that grandchildren can act socially as change agents in the adoption of technology for elderly people. These studies do not reflect the direct characteristics of elderly people in technology and adoption.

Studies that employ Technology Acceptance Model (TAM) in finding certain behaviour of elderly people show good results (Ryu *et al.* 2009). Using TAM in research can yield theories such as (Karahasanovic *et al.* 2009):

- Fear of learning difficult systems
- Lack of social influence

- Pre-established negative attitudes towards technology (e.g. privacy and computer anxiety)

TAM has been a useful model in providing a deeper understanding on usage behaviour of technology (Yang *et al.* 2012). The data in the table below is extracted from the 2011 cellphone banking survey only. The results show that Cellphone, telephone and Internet are the least frequently used channels for accessing banking services. On the other hand, ATM is the most frequented banking channel. The statistics also shows how recent information technology is used least. According to (Perpamans, Verleye and Cappellen, 1996), the more customers consider ATM for usage, the more it will be used.

	Bank hall	ATM	Store/shop	Telephone	Internet	Cell phone
Never (1)	56	16	100	134	129	138
Seldom (2)	46	19	10	7	7	3
A few times						
monthly (3)	26	47	16	4	11	2
Weekly (4)	11	29	12	1	3	2
A few times a week (5)	19	37	13	4	5	1
Daily (6)	4	14	11	12	7	16
Average frequency of use (1- Never, 6- Daily)	2.4	3.6	2.1	1.6	1.6	1.6

**Table 2.1:** Adoption of Services. Source:

[http://www.cellular.co.za/stats/statistics\\_south\\_africa.htm](http://www.cellular.co.za/stats/statistics_south_africa.htm).

Perpamans, Verleye and Cappellen (1996) maintain that older customers have a lower acceptance of ATMs and other banking technology. This is advanced by the decreasing interest in technology as age increases. Technical problems with banking machines also have a negative influence in the use of technology (Perpamans, Verleye and Cappellen, 1996). Research shows that the use of mobile technology is more associated with younger

individuals; there is need of studies focusing on elderly people (Perpamans, Verleye and Cappellen, 1996).

Karjaluoto *et al.* (2002) support Perpamans, Verleye and Cappellen (1996) in that personal experience with a banking technology has an influence on attitude and usage. This means that, customers who are satisfied with the technology have a tendency to keep up with the technology. Karjaluoto *et al.* (2002) further maintain that continuous human social contact with banks and staff has a negative impact on attitudes towards mobile banking and customers will feel more satisfied if their banking activities are handled by humans, as compared to machines.

A technology adoption research would yield good results if the study can be related to TAM. In relation to TAM the study should highlight the importance of usefulness, effectiveness, productivity and convenience as some of the factors that promote adoption (Liljander, 2006).

The organisation's brand can cause affecting reactions to the adoption of the technology (Rampersad *et al.* 2012). Users who favour a particular brand may have a good perception with of it and prefer products or technologies related to it more. The individual's attitude towards a financial service provider may shape that person's perceptions about technologies provided by the same brand (Rampersad *et al.* 2012).

Research shows that customers are reluctant to use a freshly released innovation because of limited information on the experience and satisfaction of using it (Littler and Melanthiou, 2006). There is limited research focus on the role of uncertainty in the adoption of technology or innovation that is in its early life (Littler and Melanthiou, 2006).

Adoption can be delayed due to certain risk associated with the technology (Littler and Melanthiou, 2006):

- Financial Risk: costs involve in the procurement, maintenance and using the technology.
- Performance Risk: this covers technical issues in technology such responsiveness, average time taken by the user to complete a desired task and security issues like fraud and hacking.
- Time: customers may need to devote time to buying, understanding and using the technology. Making queries or inquires for transactions made from electronic banking can be time consuming.

- Social Risk: people may have positive or negative perception of electronic banking that may affect adopting or non-adopting users.

Complexity of products and technology can cause resistance to adoption by customer; (Durkin *et al.* 2008). Complexity can be realized from:

- General view of the customer.
- Customers with simple banking needs may find technology channels complex.

Durkin *et al.* (2008) conclude that there are number of researchers who are investigating whether information technology banking channels have negative effects on the relationship with customers. This study will uncover customers' perceptions towards technology in terms of banking.

Xue *et al.* (2012) examine the usefulness of self-care information applications on mobile phone platforms for the ageing female population in three categories. Firstly, women live longer than men despite ethnicity derivation, they are more mobility driven and they seek more services over the internet. Secondly, mobile device technology, as well as mobile technologies are adopted more by elderly people and elderly people are becoming more interested in mobile gadgets. They refer to a United Kingdom study that showed that in early 2006, 60% of people aged 65–74 years old and 36% of people aged 75 years and over owned and actively used mobile gadgets. Xue *et al.* (2012) find that mobile network usage is considered mature in many countries. Therefore, mobile phones are adopted more by older as compared to internet usage.

## **2.6 TECHNOLOGY READINESS**

Technology continues to make a positive impact on services offered by banks. Indeed, researchers believe that changes in technology will result in a positive impact in the banking sector (Durkin *et al.* 2008). Retail banks have been experiencing radical challenges in the last decade that have had a strong impact on profitability (Haenlein *et al.* 2007) and as a result this caused more strategic alliances in banks in a form of mergers and acquisitions.

Strategic alliance also includes acquiring a company's customer's, with the assumption that the acquiring company will satisfy the customers better. Marketing in banks has also been playing a strategic role by creating new channels through which customers can transact their accounts and interact with their bank (Agarwal *et al.* 2009). For that reason, it

is not surprising that the issue of valuation of customers is becoming important (Haenlein *et al.* 2007). This study evaluates the responsiveness of customers towards banking technologies.

Change and growth in the internet world have positively changed how banking services are offered to clients and how clients enjoy banking services (Yoon and Steege, 2013). Customers can access their bank accounts, transfer funds between accounts and conduct other banking transaction electronically through Internet Banking and mobile banking (Yoon and Steege, 2013). However, Seyfang and Longhurst (2013) argue that there is still a great need of more socially and economically sustainable systems in the current global economy.

Theories on the behaviour of customers' have been associated with the acceptance of new technology, such as mobile banking (Karjaluoto *et al.* 2002). Therefore, consumer behaviour should be examined by looking at the demographics, beliefs and attitude. In this paper, areas of scrutiny are attitude and belief, because they are said to be easier to measure and study (Karjaluoto *et al.* 2002).

The costs of putting a new technology into production in an electronic banking are high from both the time and the financial perspective Balke *et al.* (2005). The slow but sure phase out of the bank branch has been seen as deep sinks for bank current and capital costs increases and this is becoming large targets for the banks to minimize costs (Argent, 2002). As such, many banks recognised technology as a possible solution for controlling costs (Yiu *et al.* 2007) and commercial banks are undergoing a continuous change as the global economy expands and advances (Liao and Cheung, 2002). Banks should take advantage of the technology driven market by matching their business relationship with current trends in the market, internet banking providers offer the right products and services to the right customers by shifting banking services to the mobile world (Liao and Cheung, 2002).

According to Ryu *et al.* (2009), there is a balanced diffusion of older adults into online computing; even though many of them have been using computers for some time in their workspace and personal capacity. This may imply there is a possible adoption by elderly people of mobile banking. Unfortunately, few studies have explored elderly people's usage of mobile banking (Ryu *et al.* 2009). This study attempts to uncover factors affecting elderly people's adoption to mobile banking services.

Grantham and Tsekouras (2005) showed how big pioneers in the computer world did not foresee either significant business or consumer markets for their machines. They had a perception of the need for greater improvement in the technology before diffusion could really take place. Microsoft Corporation, seemed to overlook the potential of the Internet and in GSM/2G (Global System for Mobile Communications), key stakeholders and financial analysts were way off in their predictions of the diffusion of mobile phones, especially in their general disregard for the consumer market (Grantham and Tsekouras, 2005).

## **2.7 SATISFACTION AND MOBILE**

Internet Banking can improve customer banking satisfaction because it provides a faster, easier, and more reliable method of banking. Customers' satisfaction with technology increases loyalty to the company (Lin and Hsieh, 2006), and technology can be used as a strategic tool to retain customers. Internet Banking provides a good opportunity for cross-selling of banking services and products and by meeting customer demands; it gives the company a competitive advantage (Yiu *et al.* 2007). This is supported by Karjaluoto (2002) who maintain that technology is useful in attracting and retaining customers in the current turbulence of changing business environment, globalisation and competition particularly in the financial industry.

Since the Internet is now an additional channel for managing the relationship with customers, banks need to think and act in a different way in terms of satisfying customers with Internet Banking (Yiu *et al.* 2007). Banks should be able to quickly know what is perceived by customers to work and what is perceived not to work, as information will allow the bank that responds quickly a strategic advantage via more user friendly systems. Strategically this may create barriers to new entrants on the innovation and a consumer ownership into services which are difficult to imitate by competitors. TAM can also help banks and researchers to understand what is perceived to work and what does not when informing the decision making processes of Internet Bankers (Yiu *et al.* 2007). Kavetsos (2011) examines the satisfaction of customers on technology by attempting to understand if technology improves satisfaction or if individuals with increased life satisfaction purchase more technologies. He concludes that less satisfied customers intentionally select not to have an internet connection and also, the less satisfied customers choose not to own any technology device.

Mobile payment has become the world's most preferred mobile internet service, providing a range of business utilities (Lu *et al.* 2011). According to Lu *et al.* (2011) China had about 155 million users of mobile internet, making 22.6% of the total 687 million cellphone subscribers. The number one mobile provider of China (China Mobile) released a mobile market in August 2009 that offered mobile based applications and digital contents for various gadgets. By September 2010, the number of end users on the mobile market had reached 20 million (Lu *et al.* 2011). It is important for banks to understand customers' behaviour towards mobile banking and take effective measures to manage those (Lu *et al.* 2011).

Harris and Fleming (2005) conducted a study that compared customer and employee perceptions of banking services. Their analysis included the potential gap between employee and customer perception of service personality. Their results showed that customers perceived bank technologies as being more knowledgeable than their contact employees.

A new technology is more important to customers in its early stages of use, and once customers become more comfortable with it, excitement and satisfaction may drop (Johns and Perrott, 2008). Banks should improve features on the technology to continuously improve customer satisfaction (Johns and Perrott, 2008).

According to Karahasanovic *et al.* (2009) different age groups have differences in the use of the Internet. For example, in the United Kingdom the Internet is only used by 52% of the population between 55 and 64 years. In Austria and Norway, people less active in the use of internet are 45 years old and above and younger people are seen to be more active. Belgium has a similar pattern where 48% of the population between 55 and 64 years has never used the internet. This shows no evidence of the elderly people in their 70s and 80s becoming active in the internet.

## **2.8 SELF-SERVICE**

Offering customers a direct form of self-service banking mechanism at their leisure gives a great return on reduced costs with increased income (Argent, 2002). Commercial banks in Singapore have been quick in implementing this mechanism to battle the competitive edge (Liao and Cheung, 2002). In the last 3 decades Singapore has established innovative banking products and services like electronic share application, tele-banking, TV-banking, electronic transfers and internet-built banking platforms (Liao and Cheung, 2002).

Yiu *et al.* (2007) propose a new theory, namely personal innovativeness in information technology. He recognises personal innovativeness as an important concept in examining the acceptance of information technology innovations and also focuses on the PIIT model (personal innovativeness in the domain of information technology: PIIT). Yiu *et al.* (2007) refer to PIIT as the enthusiasm of an individual to try out any new information technology. They suggest that PIIT can serve as a fundamental mediator between customers' experience and the perception of the technology; thus, PIIT is helpful in evaluating barriers to the adoption of new technology. Therefore, innovativeness and self-service are important parts of the study of factors affecting the mobile banking by elderly customers.

Innovations are normally new products in their early lives to customers and cause apprehension in those who lack sufficient experience with the technology (Liljander, 2006). Customers' reluctance to adopt SSTs has become a hurdle for companies that want the full cost benefits of technological service innovations. It is important to be informed of factors affecting customer's readiness to adopt technologies because the adoption self-service terminals have become a barrier to achieve cost benefits technology of customers (Liljander, 2006).

Liljander (2006) conducted a study of the adoption self-service terminals in the airline industry. In a sample of 1 258 customers, he found that 58 customers (4.6%) had used the Internet check-in of airlines and only 473 customers (37.6%) used other airline kiosks. The adoption rate in the airline service is slightly higher than in banking technology because the risks are relatively lower than those in the banking industry risk associated with minimising adoption of a technology service are lower.

Johns and Perrott (2006) argue that technology may have a harmful impact on the relationship if the strategy applied is not suitable for the business or customers. The quality of technology plays a significant role in the overall customer satisfaction with the organisation (Lin and Hsieh, 2006). According to Lin and Hsieh (2006), technology quality should be examined in relation to the customer's perception and behaviour towards technological interaction. Johns and Perrott (2006) argue that customers are responsible for their own satisfaction and banks should train customers in using the available technology, even though technology helps to maintain a good relationship with the customer.

Karjaluoto *et al.* (2002) conducted a study to examine the general attitudes of customers' towards mobile banking. They chose four strongly salient beliefs towards the technology, namely:

1. Fast – believe that mobile is faster than other banking methods.
2. Cheap – believe that the costs of mobile banking are reasonably lower than other banking methods.
3. Easy – believe that mobile banking is easier to use than other banking methods.
4. Service – the consistency of good service provided by mobile banking.

Based on deductive reasoning coming from qualitative data analysis, the outcome of the study shows that beliefs are forming strong attitudes in customers and it takes much effort to convince them otherwise. The study also suggests that different users will have opposing beliefs and it is important for a researcher to find the true belief. This helps to unfold the proper beliefs of elderly customers towards limited adoption of mobile banking.

Mobile banking has more risk as compared to other technologies because of the distant connection and high probability of theft and loss of mobile devices (Hanafizadeh *et al.* 2012). Hanafizadeh *et al.* (2012) investigated the effect of risk on attitude towards the adoption of mobile banking and concluded that risk as a variable, it has a great impact on minimising the customer's willingness in using mobile banking.

## **2.9 INNOVATION/S**

The electrification of the banking system for customers' started with automated teller machines (ATM), a device-like machine normally installed against the wall to dispensed cash on the instruction of the user (Perpamans, Verleye and Cappellen, 1996). The introduction of technology became an important innovation to the bank and customers. Competition in the financial industry encourages banks to revise the way they offer products and services to customers. Johns and Perrott (2006) maintain that banks are continuously creating methods that would boost the customer's adoption of technology, and these initiatives help them to remain competitive.

Yiu *et al.* (2007) describe innovation as an idea or practice which is recognized as new by the individual. They recognised that the freshness of the innovation is controlled by the individual reaction to it. It is typically known that marketing shapes the development of a new product. Garrone and Colombo, (1999) maintain that banks should be dictated by user needs to drive the development of a special class of innovative service.

Researchers have been fascinated for decades by customer innovation adoption behaviour and the diffusion of innovations (Liljander, 2006) and this shows little emphasis on mobile banking innovation from elderly customer's perspective.

The potential of Internet Banking was recognised about 15 years ago (Yiu *et al.* 2007) and innovation still lacks a fair share of adoption. This is mainly because TAM's theoretical frameworks were not considered. It is important for banks to consider the TAM factors when implementing an innovation's perceived usefulness, perceived ease of use, personal innovativeness, and perceived risk.

The rationale behind this is such that the technology acceptance model (TAM) is widely used by researchers to predict the adoption of already existing technology, and banks can use the same model to study acceptance before the innovation is released for public use (Yiu *et al.*, 2007).

Lu *et al.* (2011) classify innovation adopters into five groups:

- 1) Innovators
- 2) Early adopters
- 3) Early majority
- 4) Late majority
- 5) Laggards

Early adopters are normally educated with a reasonable educational background. In the space of mobile electronic commerce, mobile banking services may be considered more of a lifestyle service and not a necessity; and the use of mobile banking is normally associated with a social image (Lu *et al.* 2011).

Other researchers assert that it is only the first three theories that are related to innovation adoption (Ryu *et al.*, 2009) and the other two theories have comparable characteristics that relate to TAM. When examining studies related to elderly people, the compatibility should be considered because elderly people are usually more resistant to adopting innovations (Ryu *et al.*, 2009).

Ryu *et al.* (2009) refer to the innovation diffusion theory saying that many researchers have successfully joined TAM and concepts of innovation diffusion theory, which is divided into five important categories, such as relative advantage, compatibility, complexity, trial ability, and observables.

Absence of physical money brought about by technology and a significant reduction of human contact decrease the willingness of banking in a process involving such experiences (Perpamans, Verleye and Cappellen, 1996).

Innovation is becoming a major part of strategic management and more research is needed to understand the role of technology between companies and customers (Rampersad *et al.* 2012). Perpamans, Verleye and Cappellen (1996) further argue that customers will adopt technology more if they can be assured that the technology does not reduce their level of control over their funds. This could be related to resistance to change. Perpamans, Verleye and Cappellen (1996), emphasise that the possible success of an innovation directly depends on the user's adoption it as a product. Innovations should be built with the consideration of the user. Perpamans, Verleye and Cappellen (1996) measured attitudes of users towards innovation by relying on three factors (new is wasteful, novelty seeking and risk aversion). The scale takes perception as a validity measure on the adoption of innovations in general. The study shows that "new is wasteful" relates to income and education, meaning highly educated people or individuals making more money are more attracted to technology.

## **2.10 TRUST AND MOBILE BANKING**

Recent IT literature focuses on determinants of the mobile-based technology and lacks the effect of customer trust in this technology (Lu *et al.*, 2011). Hanafizadeh *et al.* (2012), define trust as the customers belief in company honesty and other relevant factors related to its businesses. Customer trust in banking technologies needs to be built so that barriers to technology adoption can be removed.

Insecurity also promotes lack of trust in technology and its ability to work properly. Recognition of poor security contributed to the slow adoption of mobile banking, meaning the lower the expected realisation, the higher the resistance to innovation will be (Liljander, 2006).

Trust in the banking technology channels is important for customers in order to become active in using these technologies (Guerrero *et al.* 2007). However, trust in financial service providers does not seem to increase the probability that elderly customers' will adopt online banking (Guerrero *et al.* 2007). Banks should implement tough security measures in their Internet banking systems that will offer customers more confidence and

customers must be aware of such security measures; in this regard customers will recognise online services as secure (Guerrero *et al.* 2007).

Customer trust in Internet banking influences customer trust in mobile banking. Mobile channels are likely to be exposed to information prying and they are much more uncertain than typical online channels (Lu *et al.* 2011). Credibility is the level to which the user trusts that the use of mobile banking has no security or privacy threats (Lu *et al.* 2011), and this is another barrier that affects the adoption of IT services in banking. Lack of credibility reduces the chances of adoption of the technology. Yoon and Steege (2013) argue that many people have used IT banking services regardless of the security problems because they mostly value usability and ease of use. Therefore, usability is another factor that promotes the adoption of technology.

Mobile banking is offered by a financial institution and not a human being; thus, customer's trust in the bank or technology is expected to be reasonably low (Zhao *et al.*, 2009). Northern Rock bank gave good evidence of the importance of trust in banking, after the media had exposed its financial crisis (BBC, 15 September 2007) This destroyed customer trust in banks and many decided to withdraw all their funds. This shows that the customer's trust in the bank is important. Therefore, investigating the variable of trust and its effect on the attitude and usage intention seems necessary.

## **2.11 RESEARCH QUESTIONS**

The literature review shows that there is a need to investigate an elderly customer's barriers to using mobile banking. The study aims to address the following research questions:

- 1) Do senior citizen bank customers currently have access to mobile technology based banking products and services more technologically ready for technology based banking services?
- 2) Do senior citizen bank customers currently use mobile technological banking services because they are more technology ready?
- 3) Do senior citizen bank customers have a higher perceived desirability of using mobile technology based banking services more?

## **2.12 CONCLUSION**

This chapter provides an overview of the variables prohibiting adoption of technology in banking. The reviewed literature shows that a typical technology banking user may be considered a highly educated, young and wealthy individual with knowledge of computers. This chapter also indicates that substantial research is being conducted to understand the relationship between IT in banking and the adoption by customers. The approach of this paper is to review the mechanism by which certain barriers play a role in limiting the adoption of banking technologies by elderly customers. Hence this study will extend research previously done by authors mentioned in the literature review by conducting an empirical study within the North-West Province of the Republic of South Africa. The next chapter discusses research methodology arranged and implanted for the purpose of this study.

## **CHAPTER THREE**

### **RESEARCH METHODOLOGY**

#### **3.1 INTRODUCTION**

Technological advances have affected the manner in which modern businesses carry out their dealings and the way they interact with their clients. The preceding chapter outlined the research problems in the form of three questions that remained unanswered. This chapter sketches the research methodology used in this study in order to answer the research questions that came into view. Hartley (2004) describes research methodology as the necessary logical steps taken to connect the research questions and objectives to data collection, analysis and interpretation. Leedy and Ormrod (2005) support Hartley in that the methodology deployed in a research study should support the data that will be collected in answering the research questions.

The research questions arrived at, are: 1) Are senior citizen bank customers, who currently have access to mobile technology-based banking products and services, technologically more ready for technology-based banking services? 2) Do senior citizen bank customers currently use mobile technological banking services because they are more technology ready? 3) Do senior citizen bank customers have a higher perceived desirability of using mobile technology-based banking services more?

The aim of this study is to determine causes of reluctance by elderly customers from using IT banking methods. To validate this, it is necessary to collect information from a targeted population using correct methodology and to analyse the responses. This chapter brings to light the methodology used in this study; the collection of data and the chosen method, the types of questions that can be asked and the structuring of the questionnaire, choice of population size and conclude by showing the researcher's compliance with ethics for conducting the research.

#### **3.2 RESEARCH TYPES**

##### **3.2.1 Qualitative and Quantitative Research**

According to Leedy and Ormrod (2005) all research studies can be either qualitative, quantitative or what they refer to as triangulation. The gravity of the research problem and

the nature of the collected data will dictate the research methodology. Qualitative methodology is used mostly for verbal data and the quantitative methodology mostly for numerical data.

Quantitative research involves gathering data that is absolute, such as numerical data, so that it can be examined in as unbiased a manner as possible. It generates statistics through the use of survey research using methods such as questionnaires or structured interviews (Nachmias, 1994). Quantitative research often involves the testing of a theory composed of variables, measured with numbers, and analysed using statistical techniques. The goal of quantitative methods is to determine whether the predictive generalisation of a theory holds true. This contrasts with qualitative research methods because qualitative researcher mostly driven by language data that regularly has “words, texts, pictures and sometimes observations” (Yoshikawa *et al.*, 2008:344).

<b>Qualitative</b>	<b>Quantitative</b>
Counting is done only when necessary	Favours counting
Offers the researcher personal investment in the data	Supports and separates personal orientation toward the data
Promote procedure flexibility in research processes - no strong experimentation and prototyping are necessary	Mental model exists strongly in the research designs - highly driven
Puts understanding of organisational processes as the centre point rather than predicting outcomes	More attention is placed predicting outcomes and less on process variables
Focus openly on participants' reactions	Participant reactions get limited focus

**Table 3.1:** Qualitative and Quantitative Research. (*Source:* Cassel and Symon's, 1994)

Qualitative research is concerned with finding the answer to questions which begin with why?, how?, in what way?, whereas quantitative research is concerned with questions about how much?, how many?, how often?, to what extent? (Polkinghorne, 2005).

### **3.2.2 Research Method(s) Used In This Thesis**

Quantitative research methodology was used in this study as the study aims at examining the factors that cause the elderly citizens not to use IT for their banking services. Quantitative research is also utilized because it aims at observation studies, correlation research, development designs and survey research (Leedy and Ormrod, 2005).

### **3.2.3 Data required**

#### **Primary and Secondary Data**

Primary data is information that has not been collected or published earlier and is collected by the researcher for the purpose of the study at hand. Primary data examples include data gathered from surveys and interviews. Secondary data refers to data that has earlier been collected or published by another party and can be reused by the researcher. In this study we are going to use both primary and secondary data. A survey will be conducted to gather primary data and secondary data collected from reviewing annual reports, company magazines and available literature in the academic field.

## **3.3 DATA COLLECTION METHOD**

### **3.3.1 Methods for collecting primary data**

Primary data can be collected using several types of research methods. Leedy and Ormrod (2005) recognise the interview as the most common data gathering method.

#### **a) Interviews**

Interviews are more structured in Quantitative research than in Qualitative research (Leedy and Ormrod, 2005). The researcher asks a standard set of questions in this type of research.

##### **▪ Structured interview**

A structured interview is mostly well thought out and keeps the attention on the discussion and mostly utilizes survey research, telephone interviews and market research. The interview consists of closed and open questions. The researcher seeks to keep the interview neutral and objective, and maintains control of the interview (Leedy and Ormrod 2005).

- **Semi-structured interview**

This type of interview is also known as an in-depth interview. It puts more focus on exploring the topic more openly and offers participants a chance to express ideas in their own words.

- **Unstructured interview**

The unstructured interview offers a spontaneous conversation. Though the agenda might be premeditated, questions are not pre-structured, but it is closest to real conversations (Leedy and Ormrod, 2005).

## **b) Survey**

A survey refers to the systematic collection of numeric / quantitative data from a group of respondents using direct observation. The aim of a survey may be to

- describe (exploratory research);
- examine correlations and associations;
- explore differences;
- identify a trend; and
- test a theoretical model.

A survey using a structured questionnaire was used for gathering data for this research. A survey is a good way of finding the visibility of the current state of a group, a community, an organisation and a discipline. According to Leedy and Ormrod (2005) surveys are a glimpse of a certain point or period in time, although there are longitudinal surveys which take place longer time to complete. Leedy and Ormrod (2005) support this by saying that the survey research takes into custody the momentary experience in time.

### **3.3.2 Questionnaire**

Questionnaires on the other hand are regarded as interviews on paper (Wilson (2004)). To ensure effectiveness, a number of considerations have to be taken into account. Firstly, the questionnaire must be kept as brief as possible. Secondly, the questions should be kept as clear and concise as possible. Thirdly, the questionnaire must contain instructions on how to complete it to ensure that there are no misunderstandings or misinterpretations of the contents of the questionnaire. The questionnaire would be used as the data-gathering tool. According to Wilson (2004), the questionnaire, as a type of data collection instrument,

provides good structure and understandable information in a study. The questionnaire of this study has been adapted from Diako (2011), who conducted a related study.

In order to help maximise the number of responses to the questionnaire, the questionnaire used in this study was divided into five main parts (See attached Annexure B):

- The initial part of the questionnaire focuses on getting the different demographics of the population that includes the age, gender, level of education and language.
- The second part of the questionnaire measures the respondents' level of access to mobile technology-based banking products and technological services, such as cellphone, landline telephone, Internet access and wireless handheld devices.
- The third part of the questionnaire determines the usage of technology-based banking products and services and provides an understanding of the desire of respondents for getting related products and services, such as bank accounts, credit cards, cellphones, landline telephones and internet access.
- The fourth part of the questionnaire measures the readiness of banking technology and acceptance.
- The fifth and last part of the questionnaire has a six statement scale which is used to determine the perception of respondents about having future desire for technology-based services.

### **3.3.3 Sampling Method**

Non-probability convenience sampling was used. The study population was elderly citizens of two old age centres and a few elderly citizens living in their private homes were chosen as the base of the study. This constituted a convenience sampling method. The sampling scheme was convenient because this was a non-probability sampling method. Valid and reliable data were collected from 66 respondents by means of the research questionnaires.

### **3.3.4 Types of variables**

A questionnaire in quantitative research creates the existence of a variable. According to Diamantopoulos and Schlegelmilch (2004), a variable is an observed characteristic of an occurrence that can take one value or categorical group (e.g. gender, performance rate, contribution).

**Nominal variables** – The response categories can have two or more categories, but do not have an intrinsic order.

- \* Nominal variables permit the researcher to categorise responses.
- \* Nominal variables allow the opportunity to measure the frequency or what percentage of responses falls in each category.
- \* Numbers allocated to categories do not provide numerical meaning.

**Ordinal variables** – have a natural order and the numbers assigned to the response categories also have an order.

- \* Ordinal variables permit the researcher to categorise responses.
- \* Can measure what percentages of responses is in each category.
- \* The numbers allocated to categories do not provide meaning.

**Ratio variables** – have matching intervals between values, the zero point has more importance and the numerical relationship between the numbers provides meaning.

- \* Ratio variables permit the researcher to categorise responses.
- \* The numbers allocated to the categories provide meaning.
- \* The ratio variable allows the researcher to rank responses.

A mixture of variable will be used in the survey. Survey questions will vary from ordinal to ratio variables, depending on the question asked by the researcher.

### **3.4 DATA COLLECTION**

The respondents of this research study were elderly citizens in the old age centres in the North-West Province. The questionnaire was utilized to collect data for this study and this was administered to elderly citizen bank customers at the old age centres. This study relied on the old age homes to provide respondents that were necessarily in a good position to participate in this study.

The data is of a quantitative nature, as each response is rated. Data collection was done once only for each respondent through personal interviews and some respondents self-completed the questionnaire. The objectives of the study and the questionnaire were explained to the respondents. The respondents were given an opportunity to complete the questionnaire in the presence of the researcher with a minor assistance in clarifying any ambiguities and challenges emerging from the questionnaire. The researcher had face-to-

face interviews with respondents who could not self-complete the questionnaire to ensure that the data collected was accurate. Data collection was collected in the presence of old age centre care givers as per the respondent's requests.

### **3.5 RESEARCH POPULATION**

Populations of this study were elderly citizens only. Two old age home centres in the North-West province were chosen because it might be difficult to get a list of elderly citizens from the banking houses from which to source data. Part of the study's population was elderly citizens living in their private homes in the North-West Province.

### **3.6 ETHICAL CONSIDERATIONS PERTAINING TO THE STUDY**

During data collection, respondents will be provided with full explanation of the study. They will be informed about the purpose of the research, along with their right not to take part in the study without having to explain why as participation in this research will be kept voluntary. Responses received from all respondents will be kept confidential and respondents will not be exposed to any unnecessary risk.

### **3.7 CONCLUSION**

This chapter detailed the research methodology and approach adopted for this study. The research instrument utilized in this study was discussed, together with the sampling method. Limitations of the study were also mentioned. The following chapter (Chapter 4) discusses the results from the data obtained, together with the analysis and research findings.

## **CHAPTER FOUR**

### **DATA DISCUSSION**

#### **4.1 INTRODUCTION**

Technological advancement has impacted the manner in which modern businesses carry out their dealings and the way they interact their clients. The preceding chapter outlined the research problems in three questions that remained unanswered. This chapter sketches out the research methodology used in this study in order to answer the research questions that came into view. Hartley (2004) describes research methodology as the necessary logical steps taken to connect the research questions and objectives to data collection, analysis and interpretation. Leedy and Ormrod (2005) support Hartley that the methodology deployed in a research study should support the data that will be collected in answering the research questions.

#### **4.2 DATA ANALYSIS**

In line with the quantitative research methodology used, the information collected during the study was analysed by quantitative data analysis and data was processed using descriptive statistics using the Statistical Package for Social Sciences (SPSS). Percentages of respondents of the study were established and are presented in this chapter in frequency distribution tables.

The questionnaire used for this research study put the spotlight on the Technology Acceptance Model and the behaviour of elderly citizen bank customers towards the usage of banking technologies, particularly mobile banking. A Linkert scale with 5 response levels (strongly agree, agree, neither agree nor disagree, disagree, and strongly disagree) was used, so as to allow for varying levels of experience with products and services. The questions were posed to be positive, so that a response of "strongly agree" was related to a positive feeling about the service that the customer had experienced.

#### **4.3 DATA OF THE STUDY**

A questionnaire was utilized in this study to collect data from elderly citizens' banking. The questionnaire was physically administered to the respondents at two old age care centres, namely Lonely Park retirement village and Top village care centre. Furthermore,

more data was collected by administering a questionnaire to elderly citizens at their private homes. In total, 66 questionnaires were completed for this study.

#### 4.4 FINDINGS

Findings of this study begin by outlining the description of the demographic profiles of the respondents. Findings are in line with the statements relating to the technology acceptance model and the behaviour of elderly citizen banking customers towards the usage of banking technologies are also presented. The findings of the study are further divided into sections covering respondents' access to technology, their behaviour and response to banking technologies.

##### 4.4.1 DEMOGRAPHIC PROFILES OF RESPONDENTS

Characteristics	Distribution	Frequency	%
<b>Age</b>	50-60 years	6	9
	61-65 years	30	45
	66-70 years	15	23
	71-75 years	10	15
	76-80 years	5	8
	Above 80 years	0	0
<b>Gender</b>	Male	35	53
	Female	31	47
<b>Education</b>	Some primary school or none	5	8
	Some high school	10	15
	Matric	15	23
	Technical Qualification	10	15
	Undergraduate degree	26	39
<b>Home Language</b>	Afrikaans	15	23
	English	16	24
	Nguni languages	10	15
	Sotho	10	15
	Tsonga	10	15
	Other African or European language(s)	5	8

**Table 4.1:** Outline of the demographic profiles of the respondents

The questionnaires were administered to elderly citizen bank customers who were the population of the study and the success response of 66 respondents was maintained. Table 4.1 depicts that the majority (53%) of the respondents were males, while 47% were females.

#### 4.4.1.1 Age of the respondents

The majority (45%) of the respondents falls within the age group of 61-65 years. This clearly shows that the age group 61-65 year dominates the age category.

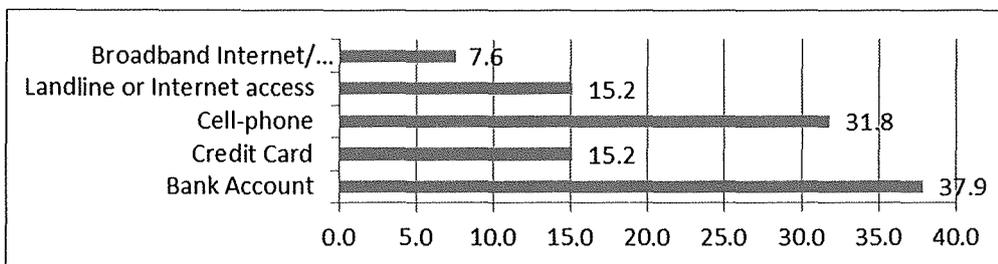
#### 4.4.1.2 Education level of the respondents

The education level of the respondents was another component of the demographic section of the questionnaire. As depicted in Table 5.3.1, 39% of the respondents have an undergraduate degree, followed by 23% in possession of matric, while 15% are in possession of some high school or technical qualification and 8% in possession of at most primary education.

#### 4.4.1.3 Home language of the respondents

The majority (24%) of the respondents indicated that their home language was English, 23% indicated Afrikaans, while 8% of the respondents indicated other African or European language(s).

### 4.4.2 FINDINGS LINKED TO ACCESS TO INFORMATION TECHNOLOGIES AND TECHNOLOGY-BASED BANKING SERVICES AND PRODUCTS



**Figure 4.1:** Information Technology Banking Services and products to which respondents had access

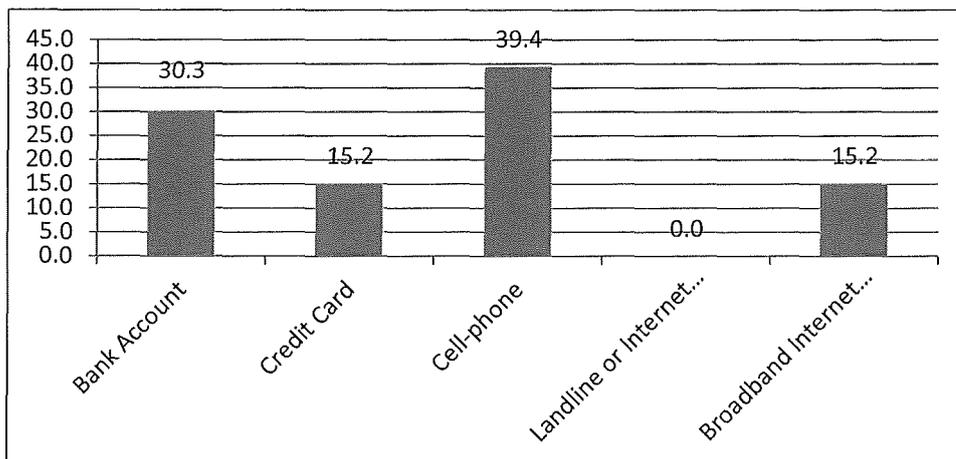
According to Polat (2012) there is a correlation between people's acceptance of technology and how it is conveniently available to them. This section provides an analysis of the respondents' access to banking technologies, together with available products and services. In this section, the intention was to ascertain if the acceptance of banking technologies by elderly banking citizens was impacted by access to technology.

Figure 4.1 depicts that the majority (37.8%) of the respondents indicated that they had a bank account and 15.2% of the respondents had a credit card, 31.8% of the respondents had access to cellphone and 7.6% of the respondents had access to broadband internet. In

addition, 15.2% of the respondents had access to landline or internet. The findings show that elderly citizens' access to a bank account is generally minimal. The findings support Yoon and Steege (2013) who observed that technology adoption should be promoted to improve access and usage of technological forms of banking. The finding of a lower access rate is supported by the literature in that there is a limited adoption of Internet Banking by elderly citizen.

#### 4.4.3 FINDINGS LINKED TO BANKING PRODUCTS AND SERVICES THAT RESPONDENTS WISH TO ACQUIRE

This section's focus was to determine services and products that elderly customers considered utilizing in the next twelve months. Technology has various users and they may respond differently to it. This section aimed at determining the level of desire of elderly customers to acquire certain technological banking services in the next twelve months.

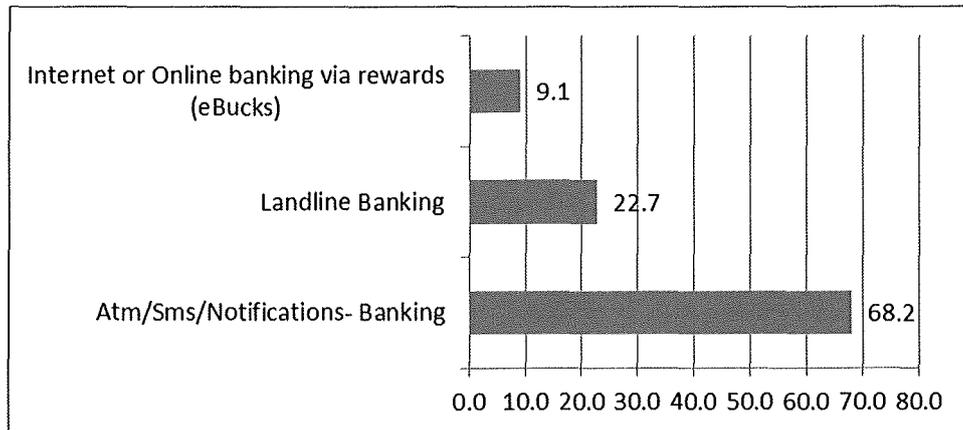


**Figure 4.2:** Information Technology Banking Services and products that respondents wish to acquire in the next 12 months

Figure 4.2 shows that some (39.4%) of the respondents were planning to acquire a cellphone, 30.3% were planning to acquire a bank account and 15.2% of the respondents planned to acquire a credit card or broadband internet access. The above figure also depicts that the respondents had no immediate desire to acquire landline/internet access. Turkey, as a developing country with a small population and a growing economy, showed a strong growth in the adoption of the Internet and the use of related technology (Polat, 2012). Asia Pacific Internet banking expects a growth of about 45.5 million users in the next few years (Agarwal *et al.* 2009) and there is a large percentage growth of online banking services being launched by banks. Yiu *et al.* (2007) further allege that in order to stay competitive,

banks should shift away from typical bases of retail bank competition, controlled by fees, interest and customer loyalty to a freshly brewed internet-based type of competition, dictated by reduction of cost, responsiveness, credibility, security and ease of use.

#### 4.4.4 FINDINGS LINKED TO BANKING PRODUCTS AND SERVICES THAT RESPONDENTS HAVE USED

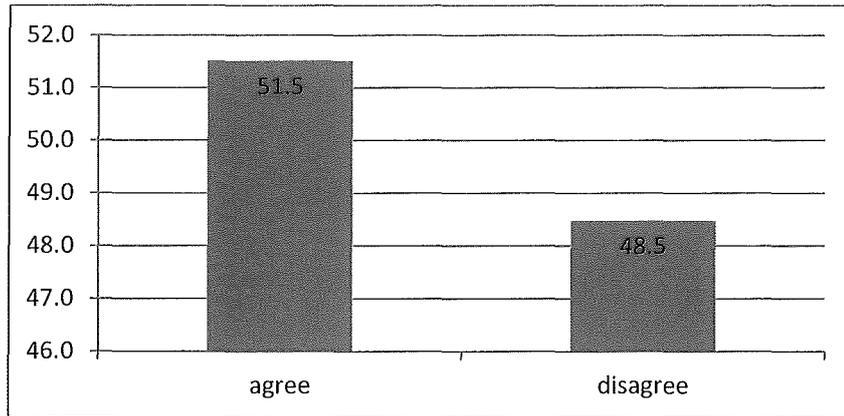


**Figure 4.3:** Information Technology-based Banking services and products that have been used by respondents in the last 12 months

This section discusses banking products and services that the respondents have used in the last twelve months. The findings are consistent with Yang *et al.* (2012) and Perpamans, Verleye and Cappellen (1996) in that the ATM remains the most used form of banking, as compared to other available banking channels.

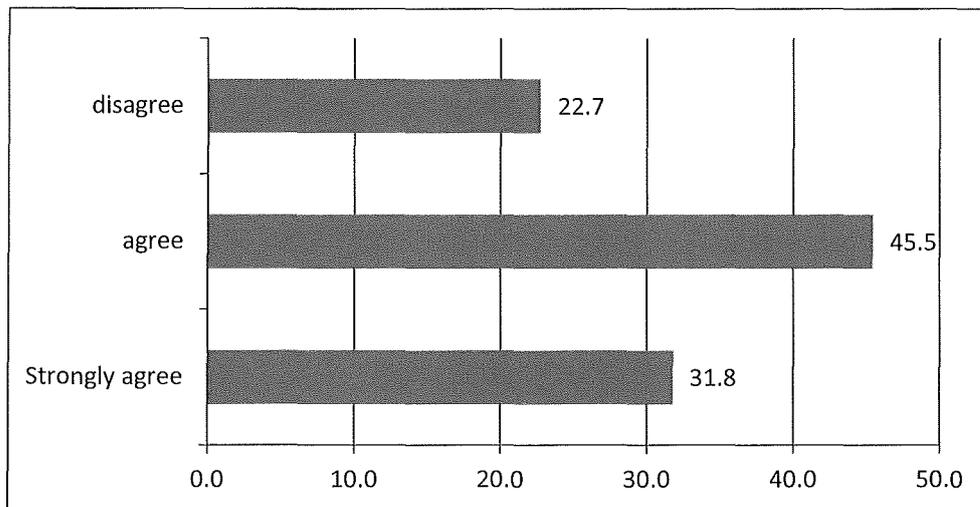
#### 4.4.5 FINDINGS LINKED TO TECHNOLOGY ACCEPTANCE AND READINESS

Findings related to the technology acceptance and readiness of the study's respondent are presented in this section. The statements provided below present the respondents perception of the mobile banking technologies, the comfort in using mobile banking technologies, convenience of using mobile banking technologies, influence on using mobile banking technologies, user friendliness of using banking technologies, trust and confidence in using banking technologies.



**Figure 4.4:** Mobile technology gives me more control of my daily life (N=66).

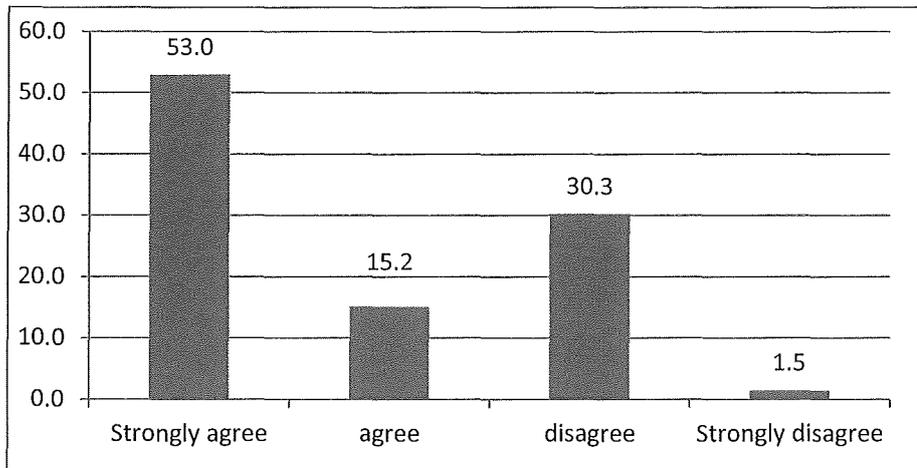
Figure 4.4 shows that a significant number of the respondents (51.5%) indicated that they felt that mobile technology gave them more control of their daily lives. The results show that the elderly bank customers participating in the study perceived technology as useful in their lives. Banks need to boost confidence in using Internet Banking services as compared to focusing cost reduction. Yiu *et al.* (2007) argue that banks should strive to encourage customers to use Internet Banking services and show them related benefits.



**Figure 4.5:** Banking services and products that use mobile technology are much more convenient to use

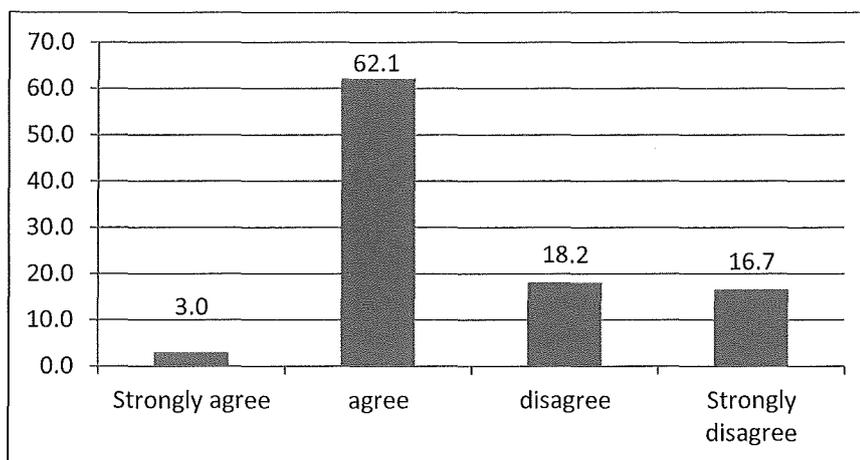
Figure 4.5 depicts that the 77.3% (45.5% and 31.8%) of the respondents indicated that banking services and products that used mobile technology are much more convenience to use, while 22.7% of the respondents disagreed with the above-mentioned statement. The finding shows that respondents value and benefit from technology-based banking services and products in their daily lives. Mobile banking is a part of electronic banking that involves billing and paying for goods and services using a mobile device (Lu *et al.*, 2011).

Though there is an increasing desire to use mobile banking, industry experts were expecting a higher diffusion rate (Hanafizadeh *et al.*, 2012).



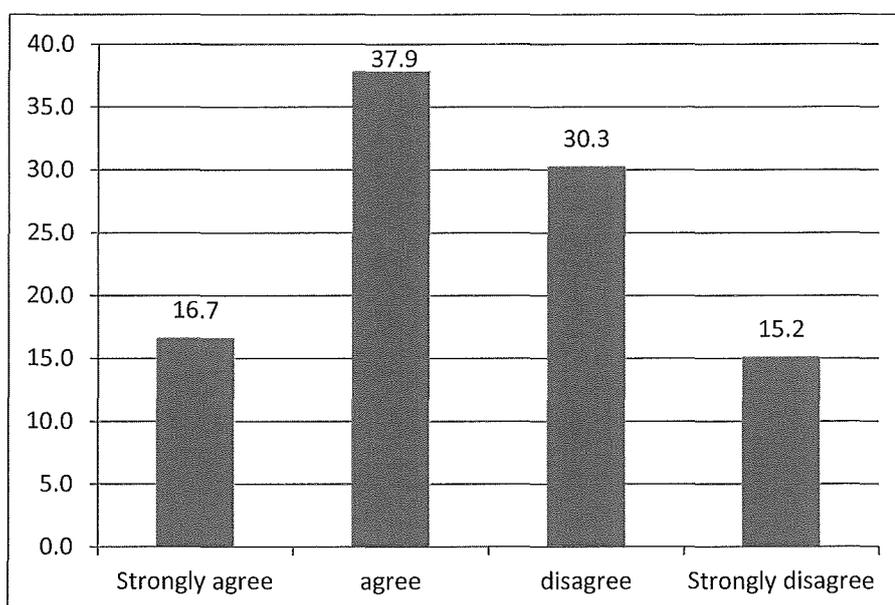
**Figure 4.6** I like the idea of banking with mobile technology because I am not limited to business hours

Figure 4.6 depicts that 68.2% (53.0% & 15.2%) of the respondents indicated that they liked the idea of mobile banking technology because they were not limited to business hours. Guerrero *et al.* (2007) state that a typical user of electronic banking services is a relatively young, well-educated person, with a balanced income and a good job. Electronic banking users are individual customers with a strong education background and they are computer literate. The user needs new market segments and frequently changing business processes that would make their lives easy and multimedia services could meet new user needs. There is an IT transition in the lives of 55 to 65 year olds (Salovaara *et al.*, 2010). Examining the technology usage by elderly people could be a good research focus.



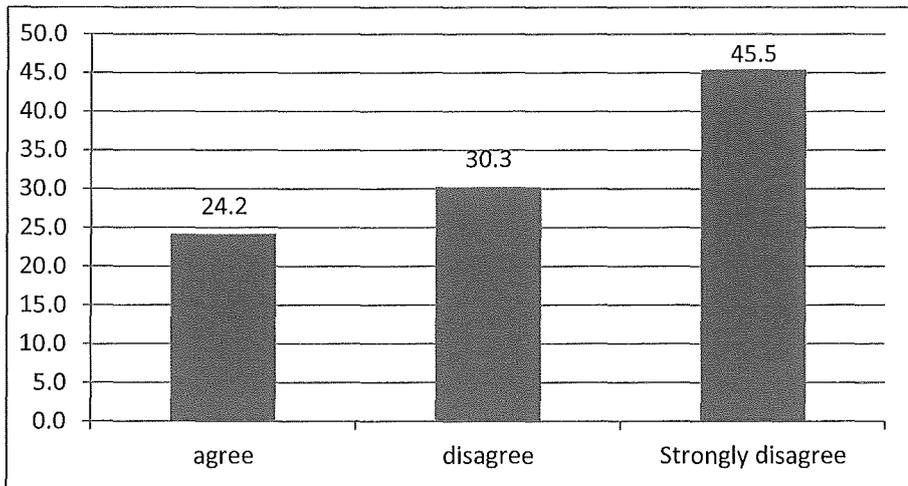
**Figure 4.7:** I prefer the use of most technologies available

Figure 4.7 depicts that 65.1% (62.1% and 3.0%) of the respondents indicated that they preferred the use of most technologies available to them. Electronic banking is an important source of stimulating geographical diffusion of banking (Diniz *et al.*, 2012). Banks should continuously review technology they use and establish certain mergers that will fit in their technology to promote more adoption in the use of their banking services. Elderly people may be resistant to change but they do adopt new innovations that are most suitable to their needs and those that are easy for them to use (Ryu *et al.* 2009). Direct interaction with elderly users shows to be working, unlike relying on marketing practices, which means training can change the attitude of elderly people towards technology (Ryu *et al.*, 2009).



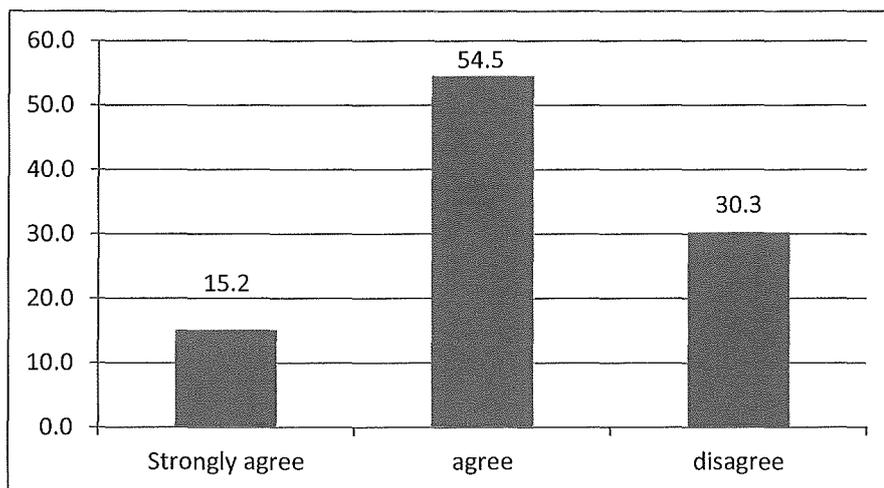
**Figure 4.8:** I like mobile technology that allows me to tailor my needs (N=66).

Figure 4.8 depicts that 54.6% (16.7% & 37.9%) of the respondents indicated that they liked mobile technology that allowed them to tailor their needs. Karjaluoto *et al.* (2002) note that the personal experience with a banking technology has influence on attitude and usage. This means that customers who are satisfied with the technology have a tendency to keep up with the technology. A continuous human social contact with banks and staff has a negative impact on attitude towards mobile banking and customers will feel more satisfied if their banking activities are handled by human, as compared to a machine. In relation to TAM it should highlight the importance of usefulness, effectiveness, productivity and convenience as some of the factors that promote adoption (Liljander, 2006).



**Figure 4.9:** I find mobile technologies to be mentally stimulating (N=66).

The figure above depicts that the majority (75.8%) of the respondents indicated that they did not find mobile technology to be mentally stimulating. Perpamans *et al.* (1996) argue that older customers have a lower acceptance of ATMs and other banking technology. This is advanced by the decreasing interest in technology as age increases and also, technical problems with banking machines have a negative influence on the use of technology (Perpamans *et al.*, 1996). Research shows that the use of mobile technology is more associated with younger individuals. There is a need for studies focusing on elderly people (Perpamans *et al.*, 1996).

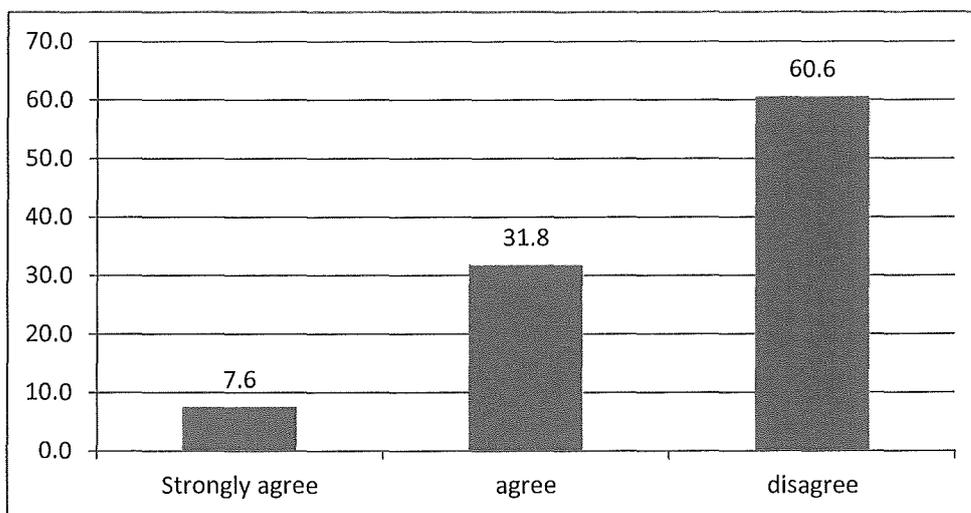


**Figure 4.10:** Mobile technology gives me freedom to move

Figure 4.10 shows that 15.2% respondents strongly agreed that mobile technology gave them freedom to move, 54.5% respondents agreed that mobile technology gave them freedom to move and 30.3% respondents disagreed that mobile technology gave them

freedom to move. This means that a high proportion of the respondents were positive that mobile technology gave them freedom to move. Karjaluoto *et al.* (2002) examined the general attitude of customers towards mobile banking. They chose four strongly salient beliefs towards the technology, namely:

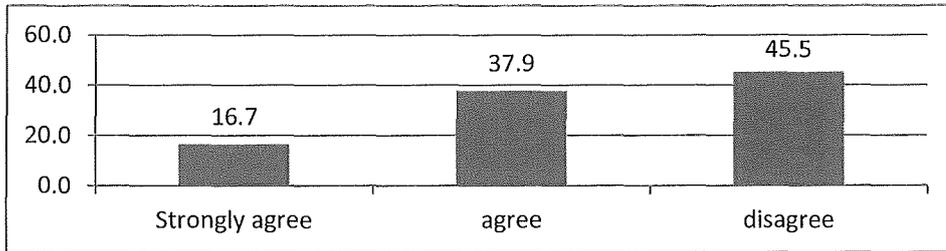
1. Fast – believe that mobile is faster than other banking methods.
2. Cheap – believe that the costs of mobile banking are reasonably lower than other banking methods.
3. Easy – believe that mobile banking is easier to use than other banking methods.
4. Service – the consistency of good service provided by mobile banking.



**Figure 4.11:** Learning about mobile technology can be as rewarding as technology itself

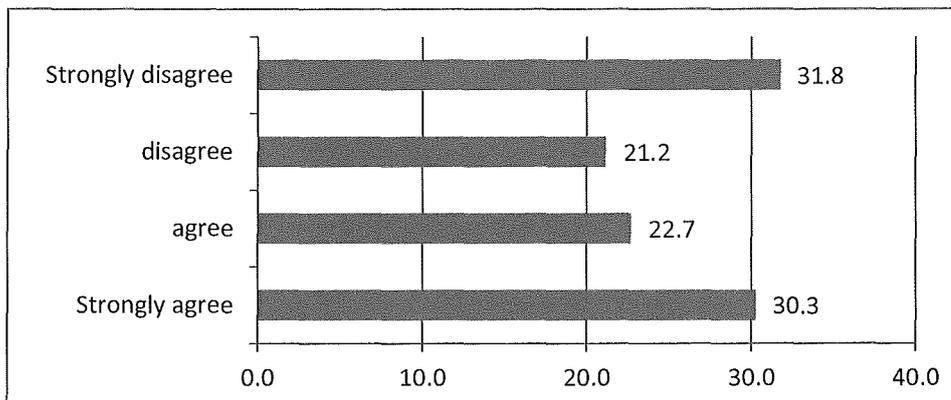
Figure 4.11 shows that 7.6% of respondents strongly agreed that learning about mobile technology could be as rewarding as technology itself, 31.5% of respondents agreed that learning about mobile technology could be as rewarding as technology itself and 60.6% respondents disagreed that learning about mobile technology could be as rewarding as technology itself. This means that the vast proportion of the respondents indicated that learning about mobile technology could not be as rewarding as technology itself. Karahasanovic *et al.* (2009) argue that using TAM in research can yield theories such as fear of learning difficult systems, lack of social influence and pre-established negative attitudes towards technology (e.g. privacy and computer anxiety). Banks should be able to quickly know what is perceived by customers to work and what is perceived not to work, as information will allow the bank that responds quickly to gain a strategic advantage via more user friendly systems and tactically this may create barriers to new entrants to the innovation and a consumer ownership to services, which are difficult to imitate by

competitors. TAM can also help banks and researchers to understand what is perceived to work and what does not when informing the decision making processes of Internet Bankers (Yiu *et al.* 2007).



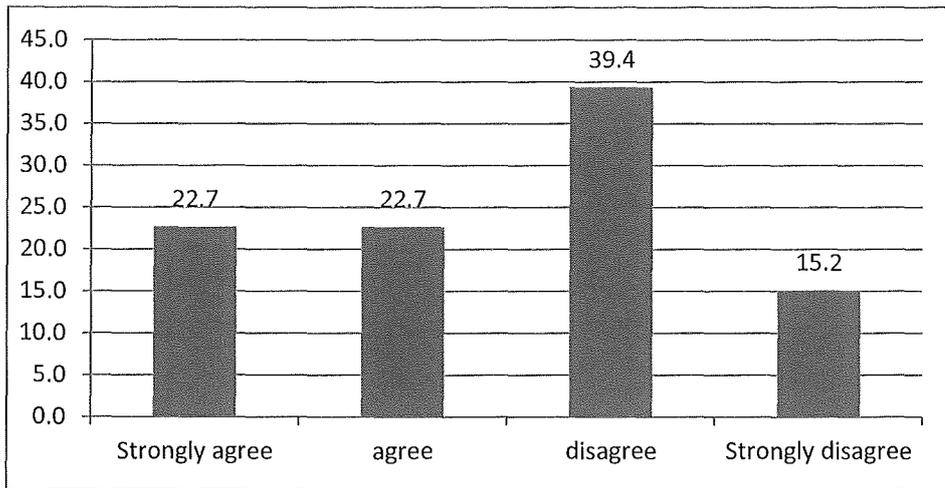
**Figure 4.12:** I feel confident that mobile technology will do what you tell them to do

Figure 4.12 shows that 16.7% of respondents strongly agree that they feel confident that mobile technology will do what you tell it to do, 37.9% of respondents agree that they feel confident that mobile technology will do what you tell it to do and 45.5% of respondents disagree that they feel confident that mobile technology will do what you tell it to do. This means that most of the respondents indicated that they did not feel confident that mobile technology will do what they tell it to do. Innovations are normally new products available in their early lives to customers, and cause apprehension in those who lack sufficient experience with the technology (Liljander, 2006). Customers’ reluctance to adopt SSTs has become a hurdle for companies that want the full cost benefits of technological service innovations. It is important to be informed about factors affecting customers’ readiness to adopt technologies because the adoption of self-service terminals has become a barrier to achieve cost benefits (Liljander, 2006).



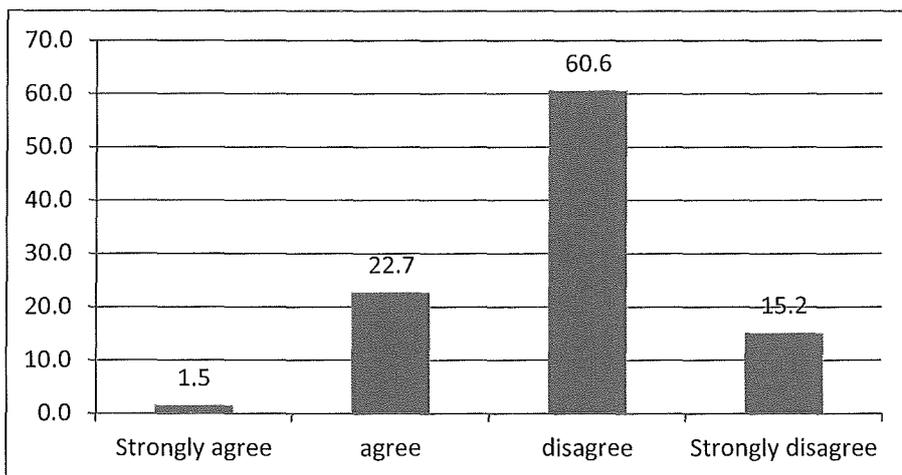
**Figure 4.13:** Other people come to me for advice on mobile technologies

Figure 4.13 shows that the majority (53.0%) of the respondents indicated that other people came to them for advice on mobile technology, while 47.0% of the respondents disagreed to the above mentioned statement.



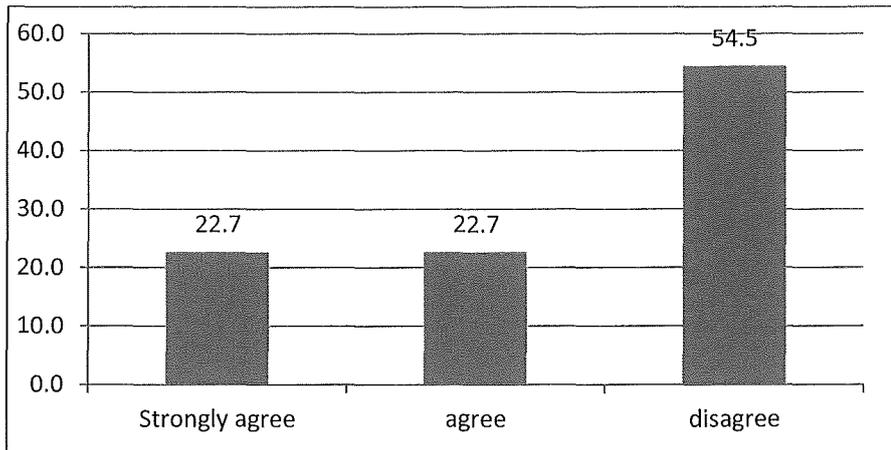
**Figure 4.14** It seems like my friends are learning more about mobile technologies than I am

Figure 4.14 shows that the majority (54.6%) of the respondents indicated that their friends are not learning more about mobile technologies than they were.



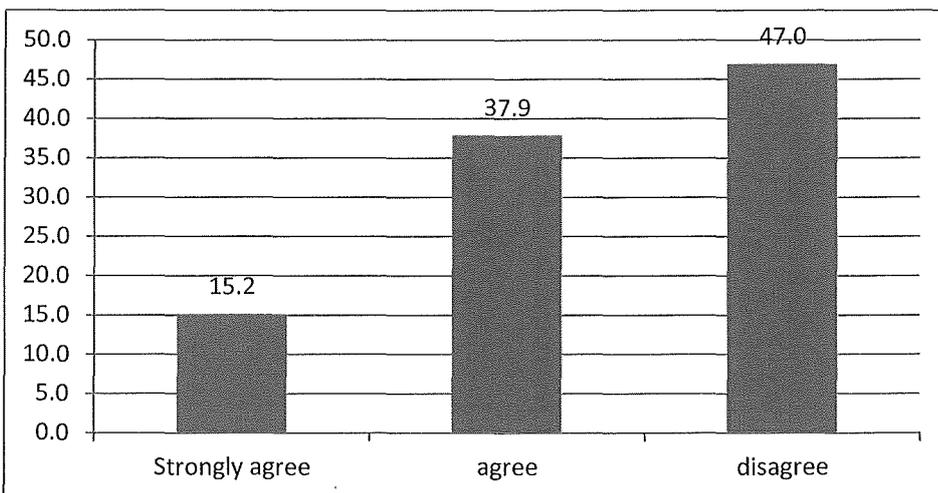
**Figure 4.15:** In general, I am the first amongst my circle of friends to acquire mobile technologies

The above figure shows that the large proportion of the respondents indicated that generally they were not the first amongst their circle of friends to acquire mobile technologies. Yiu *et al.* (2007) describe innovation as an idea or practice which is recognized new by the individual. They recognize freshness of the innovation controls the individual reaction to it. It is typically known that marketing shapes the development of a new product. Garrone and Colombo (1999) maintain that banks should be dictated by user needs to drive the development of a special class of innovative services.



**Figure 4.16:** I can usually figure out mobile technology products and services without help from others

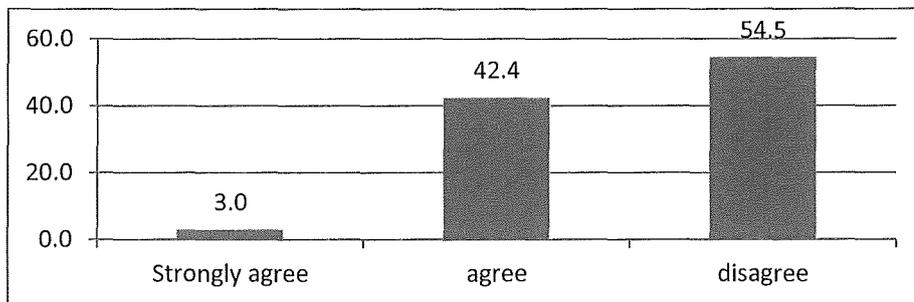
The above figure shows that a large proportion of the respondents indicated that they could not usually figure out mobile technology products and services without help from others. The quality of technology plays a significant role in the overall customer satisfaction with the organisation (Lin and Hsieh, 2006). According to Lin and Hsieh (2006), technology quality should be examined in relation to the customer's perception and behaviour towards technological interaction. Johns and Perrott (2006) argue that customers are responsible for their own satisfaction and banks should train customers in using the available technology, even though technology helps to maintain a good relationship with the customer.



**Figure 4.17:** I keep up with the latest mobile technologies in my area of interest

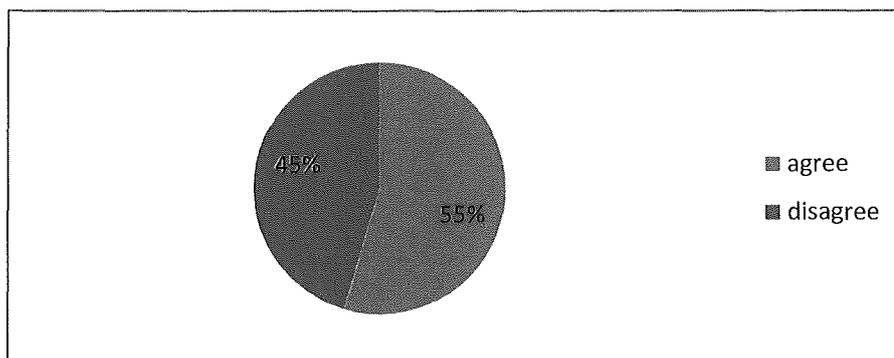
Figure 4.17 depicts that the majority (53.1%) of the respondents indicated that they kept up with the latest mobile technologies in their area of interest. Technology readiness (TR) is one of the factors that encourage or delay the adoption of new technologies (Liljander, 2006) by far, but empirical research to back up this claim is scarce. TR is defined as

customers' tendencies to hold and use new innovations for accomplishing desired goals, but there are not enough research results available to support this theory because many empirical studies have failed to confirm the expected relationship of technology readiness to customers (Liljander, 2006).



**Figure 4.18** I enjoy the challenge of figuring out how gadgets work

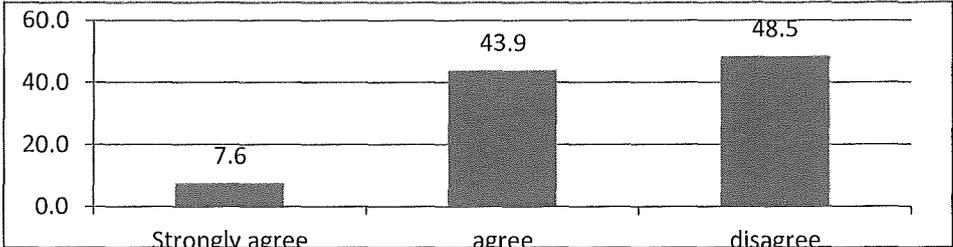
Figure 4.18 indicates that 3.0% respondents strongly agree that they enjoy the challenge of figuring out how gadgets work, 42.4% respondents agree that they enjoy the challenge of figuring out how gadgets work and 54.4% respondents disagree that they enjoy the challenge of figuring out how gadgets work. This means that the majority of the respondents indicated that they did not enjoy the challenge of figuring out how gadgets work. Adjustment and growth in the internet world have positively changed how banking services are offered to clients and how clients enjoy banking services (Yoon and Steege, 2013). However, Seyfang and Longhurst (2013) argue that there is still a great need of more socially and economically sustainable systems in the current global economy.



**Figure 4.19:** I find I have fewer problems than others in making mobile technology work for me

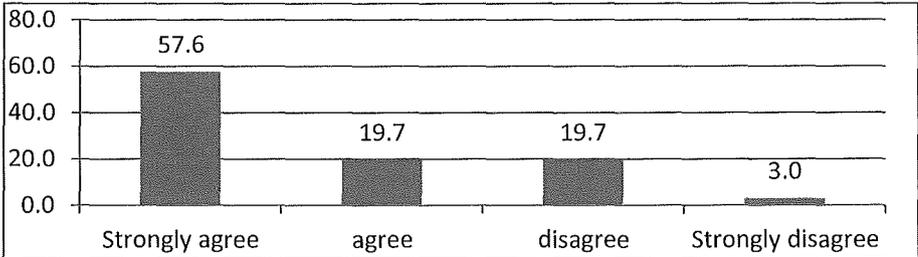
Figure 4.19 shows that most of the (55%) respondents indicated that they found that they had fewer problems than others in making mobile technology work for them. Harris and Fleming (2005) conducted a study that compared customer and employee perceptions of

banking services. Their analysis included the potential gap between employee and customer perception of service personality and the results showed that customers perceived bank technologies as being better informed than their contact employees. A new technology is vital to customers in its early stages of use, but once customers become more comfortable with it, excitement and satisfaction may drop (Johns and Perrott, 2008). Banks should improve features of the technology to continuously improve customer satisfaction (Johns and Perrott, 2008).



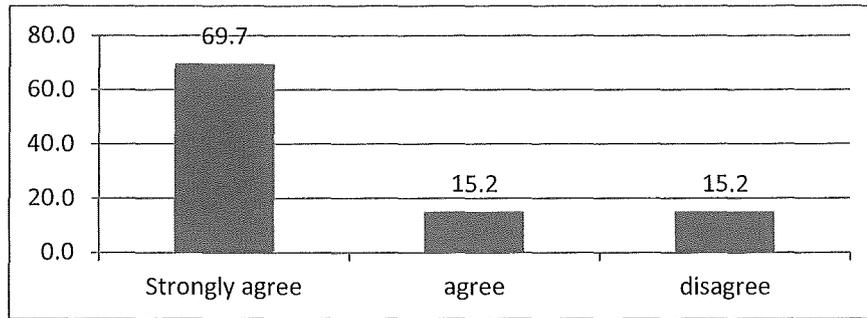
**Figure 4.20:** Sometimes I think mobile technology is not designed for use by ordinary people

Figure 4.20 shows that the majority (48.5%) of the respondents indicated that sometimes they thought technology was not designed for use by ordinary people. Based on deductive reasoning coming from qualitative data analysis, the outcome of the study shows that beliefs are forming a strong attitude in customers and it takes much effort to convince them somehow. The study also suggests that different users will have opposing beliefs and it is important for a researcher to find the true belief. This helps to unfold the proper belief of customers towards limited adoption of mobile banking by elderly customers. TR is defined as customers' tendencies to hold and use new innovations for accomplishing desired goals and many empirical studies have failed to confirm the expected relationship of technology readiness of customers (Liljander, 2006).



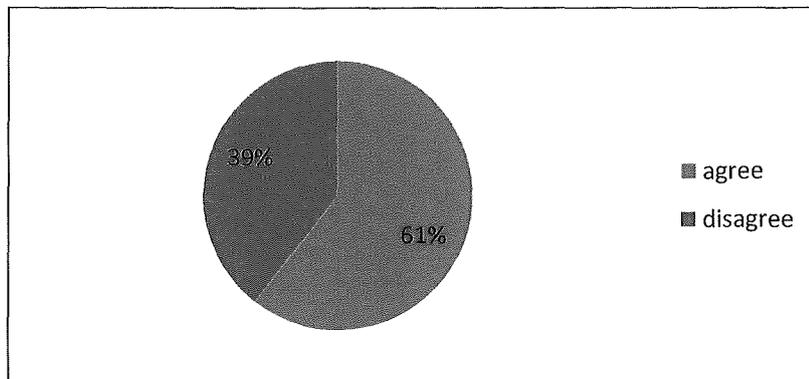
**Figure 4.21:** I rather prefer having a basic model than one with a lot of features

The above figure shows that the largest proportion of respondents indicated that they prefer having a basic model rather than one with a lot of features.



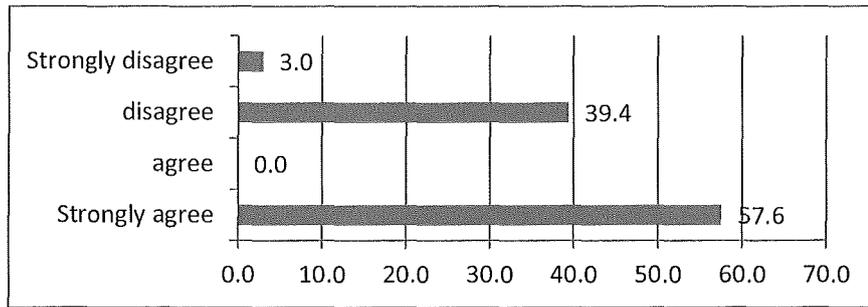
**Figure 4.22:** It is embarrassing when I have trouble with a mobile technology gadget when people are watching

Figure 4.22 shows that most respondents (69.7%) indicated that it was embarrassing when they had a problem with a mobile technology gadget when people were watching.



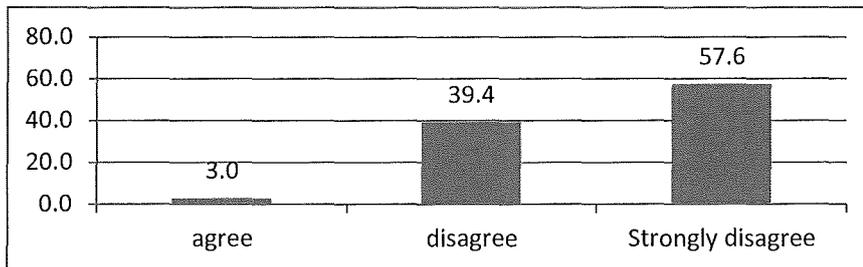
**Figure 4.23:** When replacing important people-tasks, organisations must be careful because mobile technologies can break down or get disconnected

Figure 4.23 shows that the largest proportion (61%) of respondents indicated that when replacing important people-tasks, organisations should be careful because mobile technologies could break down or get disconnected. Internet banking is defined as the delivery of banking services through the connected computer networks directly to customer's point of location. Internet does not restrict banks to geographical boundaries and it offers a range of benefits, such as accessibility, convenience and ease of banking (Yiu *et al.*, 2007). Zhao *et al.* (2009) argue that Northern Rock bank gave good evidence of the importance of trust in banking, after the media had exposed its financial crisis (BBC, 15 September 2007). This destroyed customers' trust in banks and many decided to withdraw all their funds. This shows customers' trust in the bank is important. Therefore, investigating the variable of trust and its effect on the attitude and usage intention seems necessary.



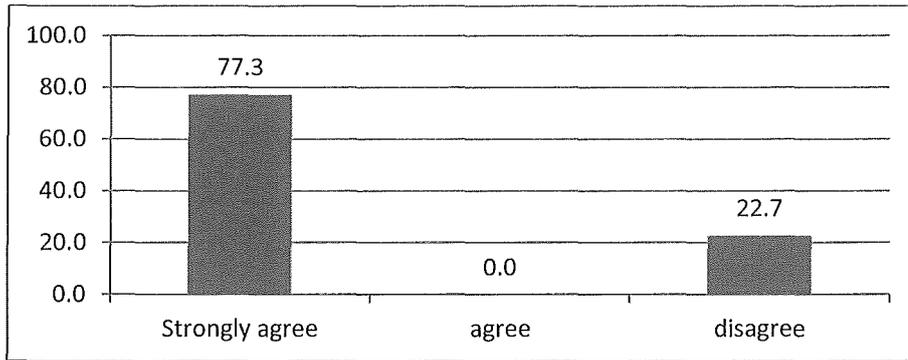
**Figure 4.24** Mobile technologies have a health or safety that is not discovered until people have used them

The figure above shows that the large proportion (57.6%) of respondents indicated that mobile technologies have a health or safety that is not discovered until people have used them. Johns and Perrott (2006) argue that customers are responsible for their own satisfaction and banks should train customers on using the available technology even though technology helps to maintain a good relationship with the customer. Johns and Perrott (2006) argue that technology may have a harmful impact on the relationship if the strategy applied is not suitable to the business or customers.



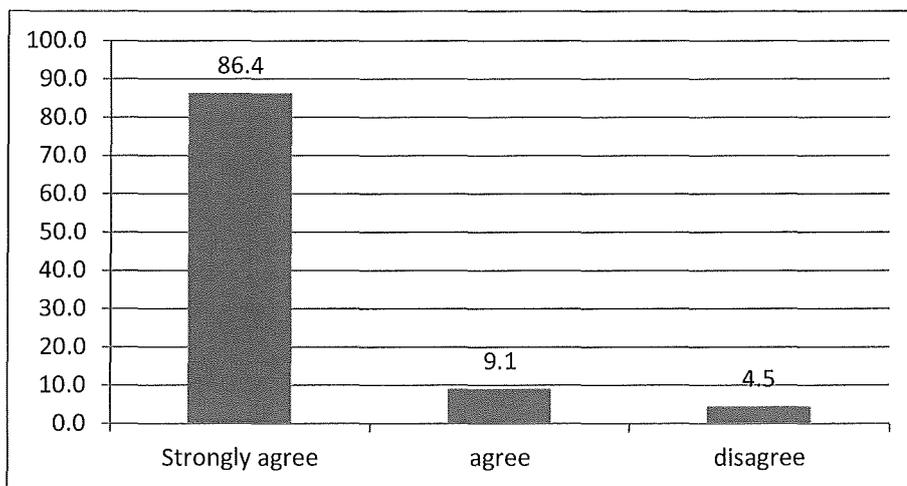
**Figure 4.25:** Mobile technology makes it too easy for governments and companies to spy on other people

Figure above depicts that the large proportion (57.6%) of respondents disagreed that mobile technologies made it too easy for governments and companies to spy on other people. There is limited research focused on the role of uncertainty in the adoption of technology or innovation that are in the early stages of implementation (Littler and Melanthiou, 2006). Adoption can be delayed due to certain risks associated with the technology (Littler and Melanthiou, 2006), such as financial risk e.g. costs involved in the procurement, maintenance and using the technology and performance. Risk covers technical issues in technology, such as responsiveness, average time taken by the user to complete a desired task and security issues like fraud and hacking.



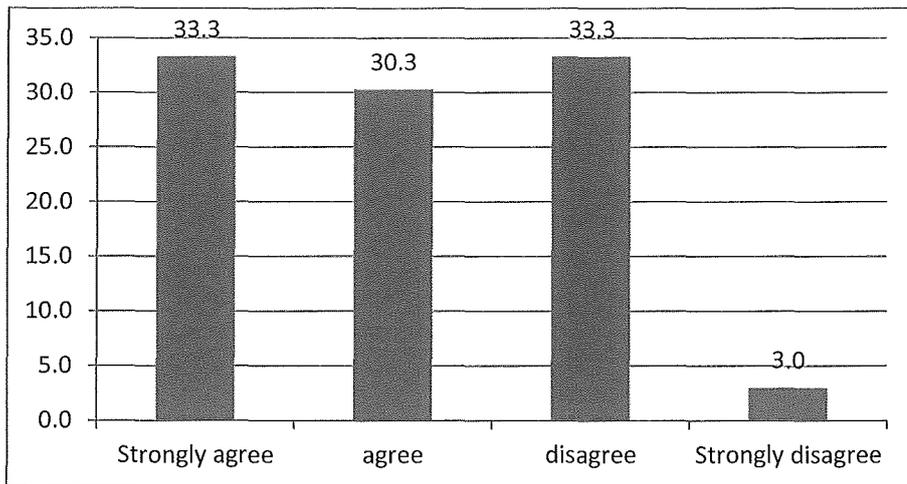
**Figure 4.26:** Technology always seems to fail at any time

Figure 4.26 indicates that 77.3% of respondents believe that technology always seems to fail at any time, whereas 22.7% of respondents disagree that technology always seems to fail at any time. This means that technology always seems to fail at any time. Polat (2012) argue that people are disadvantaged by social problems, such as poverty, illiteracy and from being fully active in the online world. Turkish Internet usability has increased from 7% in 2004 to 43% in 2011. Although there has been a significant growth, there is still a large portion of the population that is not active in virtual banking



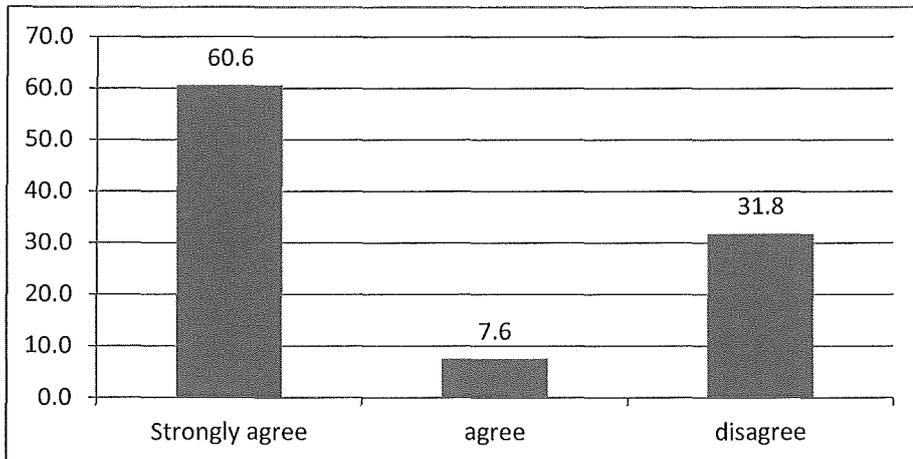
**Figure 4.27:** I don't think it is safe to give a credit card number over the phone

Figure 4.27 depicts that the largest proportion of respondents indicated that they did not think it was safe to give a credit card number over the phone. Using Internet banking as a business model has considerable opportunities for banks and could result in a good market share (Yiu *et al.* 2007). Internet banking would not only provide funds for banks but will allow market opportunities to shape the market to technology and management of customer expectations. Internet banking customer shows preference for fairly low risk activities, products and services.



**Figure 4.28:** I do any kind of financial transaction over the cellphone

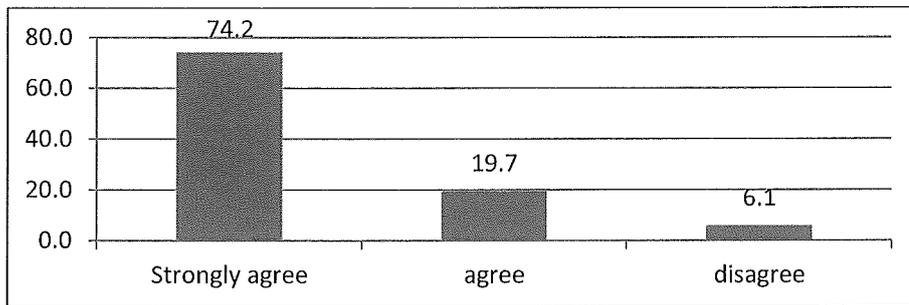
The figure above depicts that the largest proportion (63.6%) of respondents indicated that they did any kind of financial transaction over the cellphone. In America, about 5% of 25 million technology active banking service users make use of mobile banking while this is lower than in Germany where 12% use their cellphones for banking. Because there is an increasing desire to use mobile banking, industry experts were expecting a higher diffusion rate (Hanafizadeh *et al.* 2012).



**Figure 4.29:** I don't feel confident with transaction online

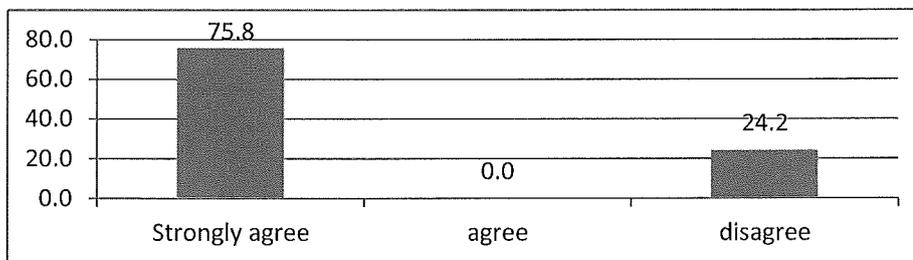
The figure above depicts that the largest proportion of respondents indicated that they don't feel confident with online transactions. Ryu *et al.* (2009) note a balanced diffusion of older adults into online computing even though many of them have been using computers for some time in their workspace and personal capacity. Banks should implement tough security measures in their Internet banking systems that would offer customers more

confidence and customers should be aware of such security measures; in this regard customers would recognize online services as secure (Guerrero *et al.* 2007).



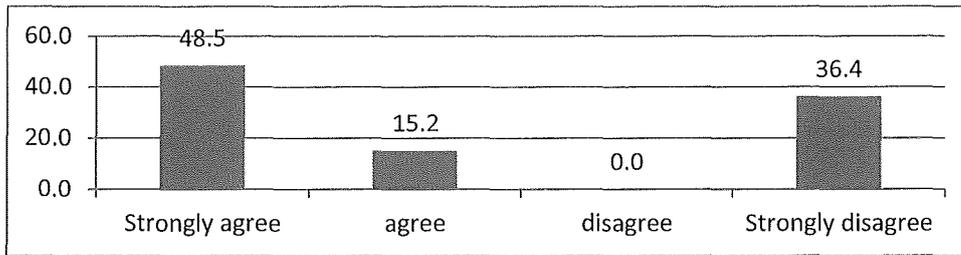
**Figure 4.30:** Any banking transaction you do electronically should be confirmed later by someone in writing

The figure above depicts that the largest proportion of respondents indicated that any banking transaction they did electronically should be confirmed later by someone in writing. Karjaluoto *et al.* (2002) state that the personal experience with banking technology has an influence on attitude and usage and customers who are satisfied with the technology have a tendency to keep up with the technology. Karjaluoto *et al.* (2002), further maintain that continuous human social contact with banks and staff has a negative impact on the attitude towards mobile banking, and customers would feel more satisfied if their banking activities are handled by a person, rather than by a machine.



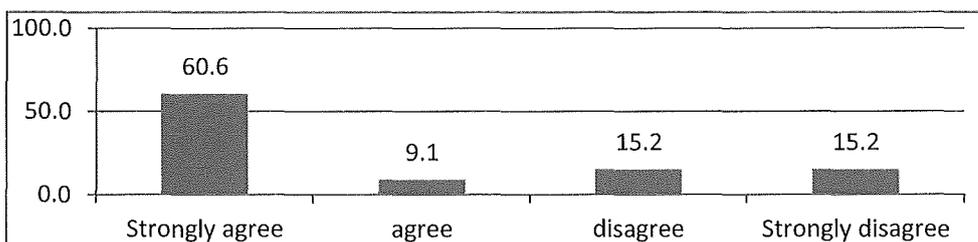
**Figure 4.31:** There is no such thing as a manual for mobile technology products that is written in plain language

Figure 4.31 depicts that the majority (75.8%) of the respondents indicated that there was no such thing as a manual for mobile technology products written in plain language. The organisation's brand can cause reactions to the adoption of the technology and the users who favour a particular brand may have a good perception of it and prefer products or technologies related to it more. The individual's attitude towards a financial service provider may shape that person's perceptions about technologies provided by the same brand (Rampersad *et al.* 2012).



**Figure 4.32:** When I get technical support from a provider of mobile technologies I feel as if I am taken for granted

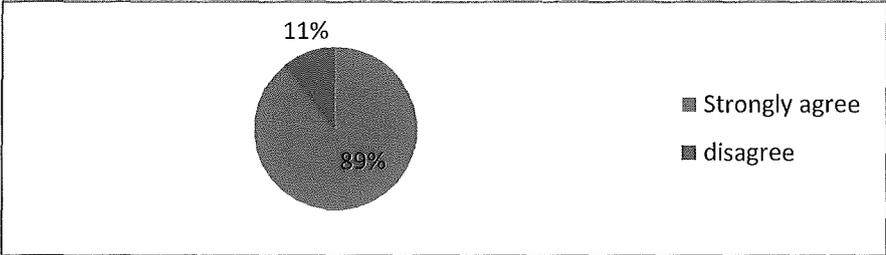
Figure 4.32 indicates that 48.5% of the respondents strongly agree and feel that they are taken for granted when asking for technical support about mobile technologies, 15.2% of the respondents agree and feel that they are taken for granted when asking for technical support about mobile technologies and 36.4% of the respondents strongly disagree that they are taken for granted when asking for technical support about mobile technologies. This means that majority of respondents feel that they are being taken for granted when they get technical support from a provider of mobile technologies. Banks should take advantage of the technology-driven market by controlling their business relationship with current trends in the market. Internet Banking providers offer right products and services to the right customers by shifting banking services to the mobile world (Liao and Cheung, 2002). The number one mobile provider of china (China Mobile) released a mobile market in August 2009 that offered mobile-based application and digital contents for various gadgets. By September 2010, the number of end users in the mobile market had reached 20 million (Lu *et al.* 2011). It is important for banks to understand customers' behaviour towards mobile banking, and take effective measures to manage them (Lu *et al.* 2011).



**Figure 4.33:** The human touch is very important when banking

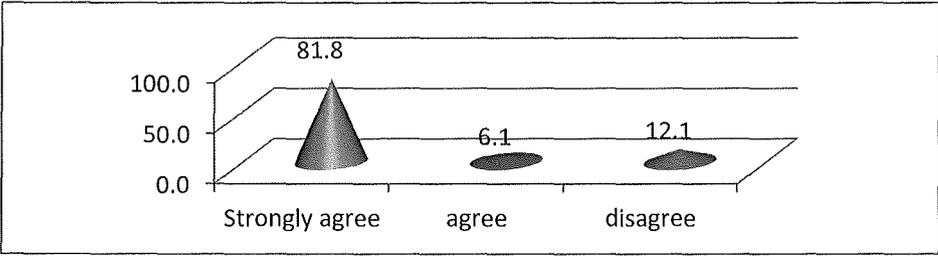
Figure 4.33 depicts that the majority (69.7%) of the respondents indicated that the human touch was very important when banking. Absence of physical money brought about by technology and a significant reduction of human contact decrease the willingness of banking in processes involving such experiences (Perpamans, Verleye and Cappellen, 1996). Karjaluoto *et al.* (2002) further maintain that continuous human social contact with

banks and staff has a negative impact on the attitude towards mobile banking and customers would feel more satisfied if their banking activities are handled by a person, rather than by a machine.



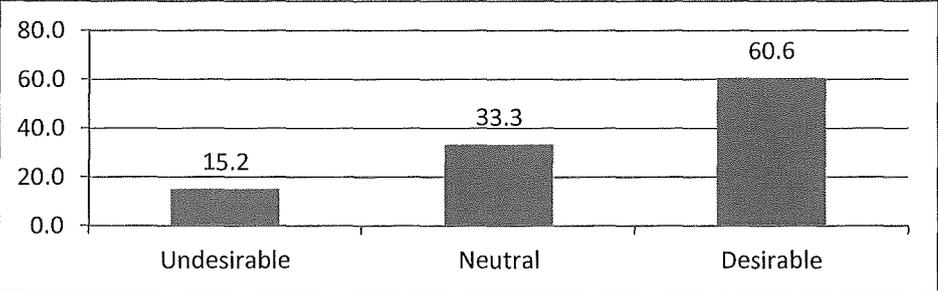
**Figure 4.34:** I prefer to talk to someone rather than to a machine

The figure above shows that 89.0% of the respondents indicated that they preferred to talk to someone rather than to a machine.



**Figure 4.35:** If I provide information over a machine, I am never sure if it gets to the right place

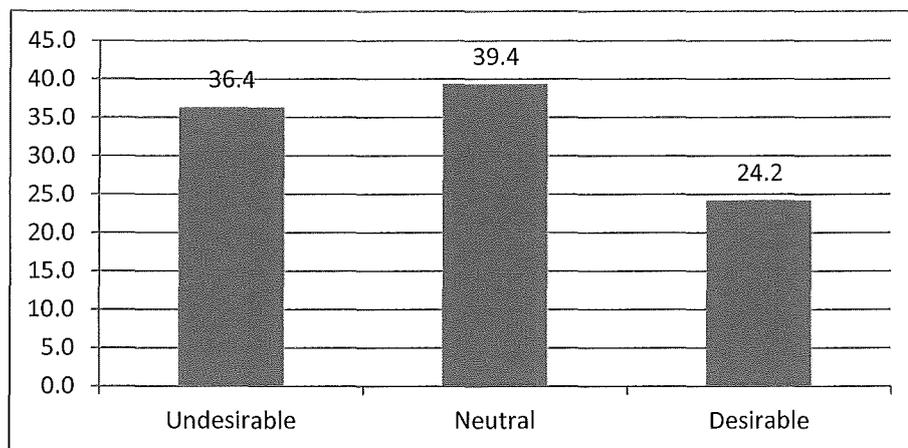
The figure above indicates that 87.9% of the respondents indicated that if they provided information over a machine, they were never sure if it got to the right place.



**Figure 4.36:** I make mobile banking transfers and payments

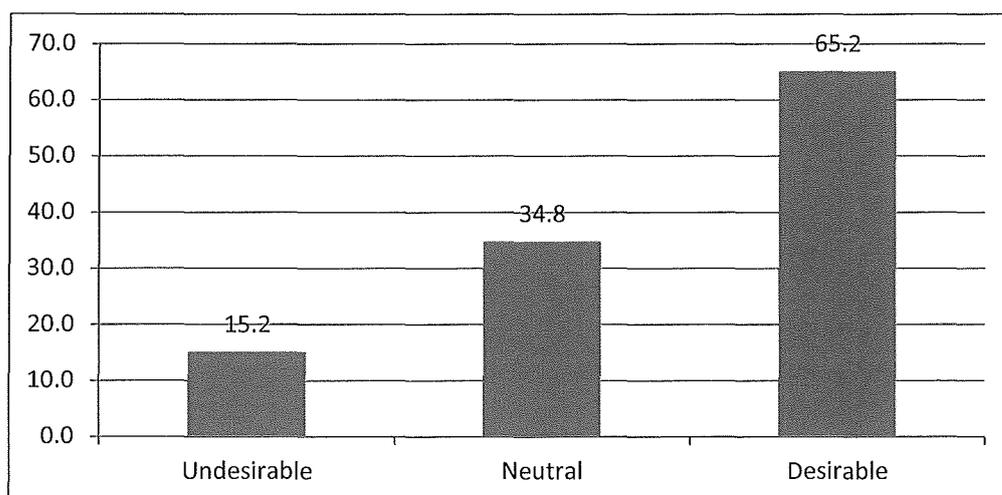
The above figure depicts that a large proportion of the respondents consider mobile banking transfers and payments desirable. Trust in the banking technology channels is important for customers in order to become active in using these technologies (Guerrero *et al.*, 2007). On the contrary, trust in financial service providers does not seem to increase

elderly customers' probability to adopt online banking (Guerrero *et al.* 2007). Banks should implement tough security measures in their Internet banking systems that would offer customers more confidence and customers must be aware of such security measures; in this regard customers would recognize online services as secure (Guerrero *et al.* 2007). Internet Banking is structured and it is backward to think that the main use is related to activities that minimise operating costs. Banks need to boost confidence in using Internet Banking services as compared to focusing on cost reduction. Yiu *et al.* (2007) argue that banks should strive to encourage customers to use Internet Banking services and show them related benefits.



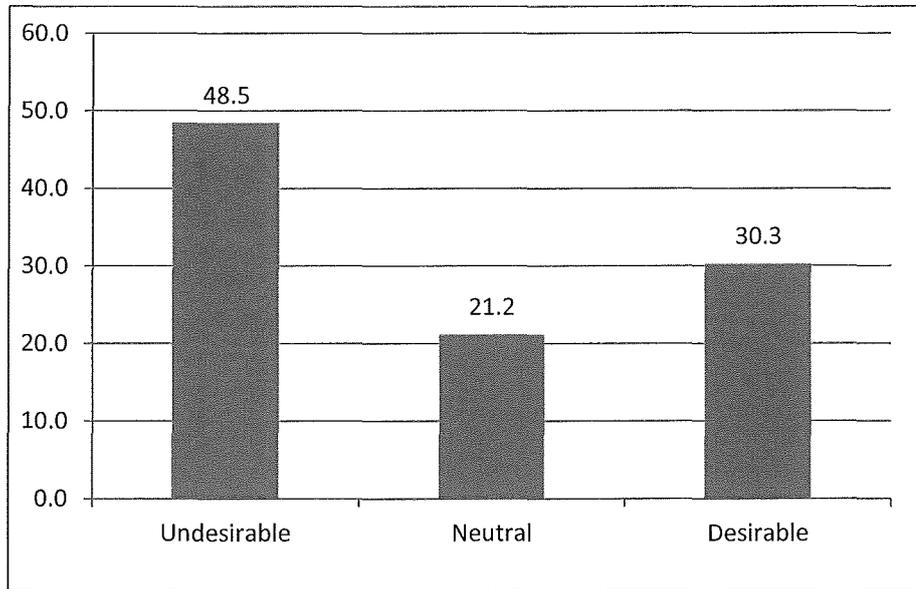
**Figure 4.37:** I view accounts and balances through mobile banking

The above figure depicts that a large proportion of the respondents find it desirable to view accounts and balances through mobile banking.



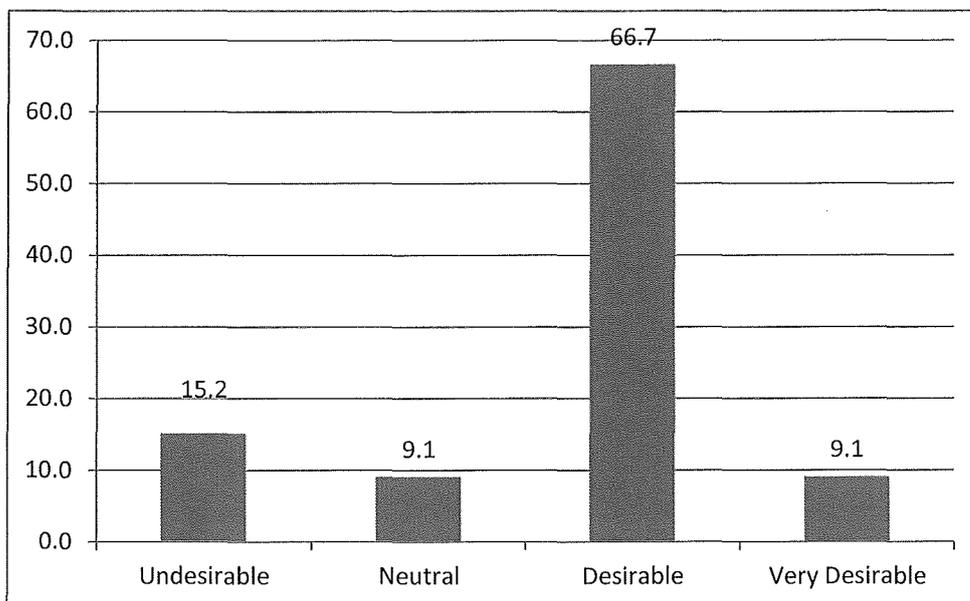
**Figure 4.38:** I download banking account statements through mobile banking

The above figure depicts that a large proportion of the respondents find it desirable to download banking account statements through mobile banking.



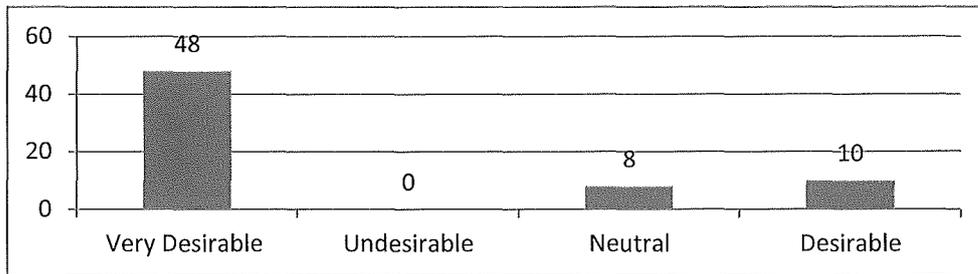
**Figure 4.39:** I purchase small items like tickets via banking online services

The above figure shows that a large proportion (48.5%) of the respondents finds it undesirable to purchase small items like tickets via banking online services.



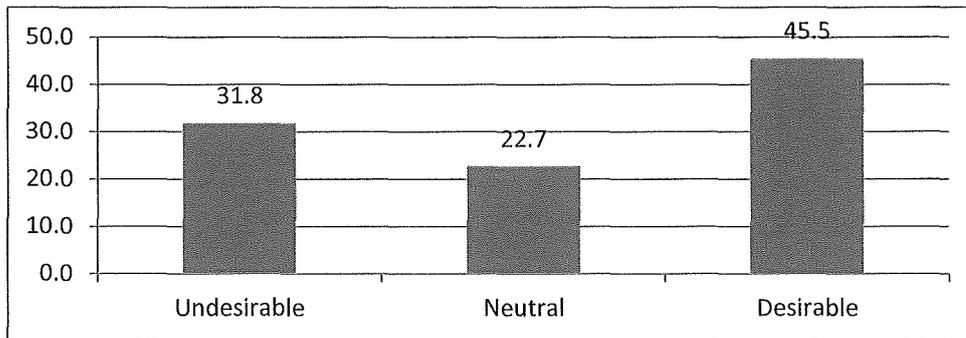
**Figure 4.40:** Whenever something gets automated, you need to check carefully that the machine is not making mistakes

The above figure shows that a large proportion of the respondents indicated that whenever something got automated; they needed to check carefully that the machine was not making mistakes.



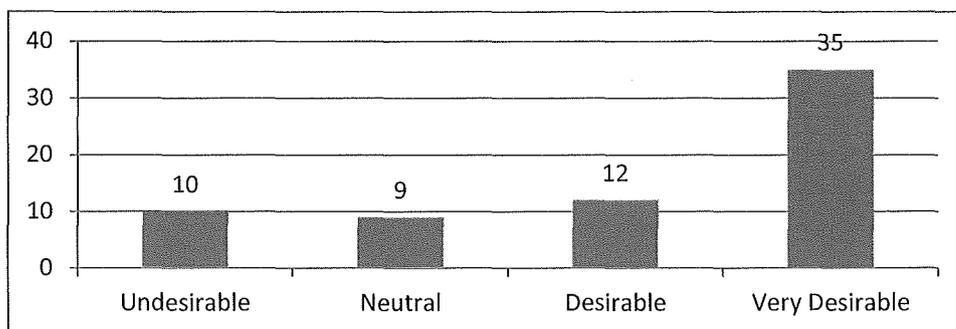
**Figure 4.41:** I Purchase large items like furniture via banking online services

The above figure shows that a large proportion of the respondents indicated that they found it very desirable to purchase large items like furniture via banking online services.



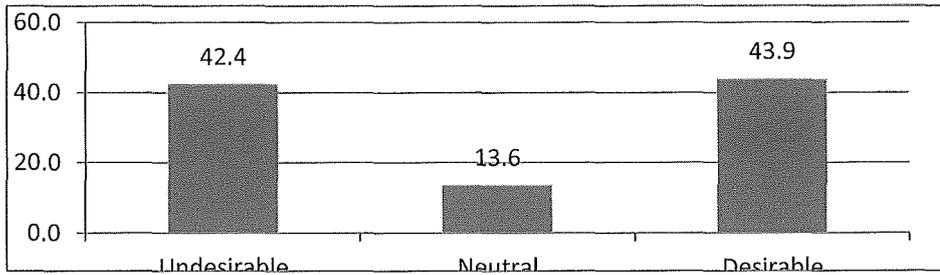
**Figure 4.42:** I apply for banking services online

The above figure shows that a large proportion of the respondents indicated that they found it desirable to apply for banking services online.



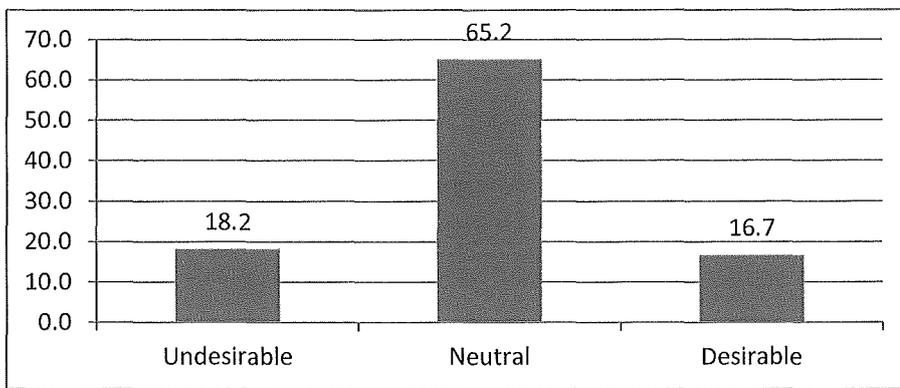
**Figure 4.43:** I buy prepaid airtime via mobile banking

The above figure shows that a large proportion of the respondents indicated that they found it desirable to buy prepaid airtime via mobile banking.



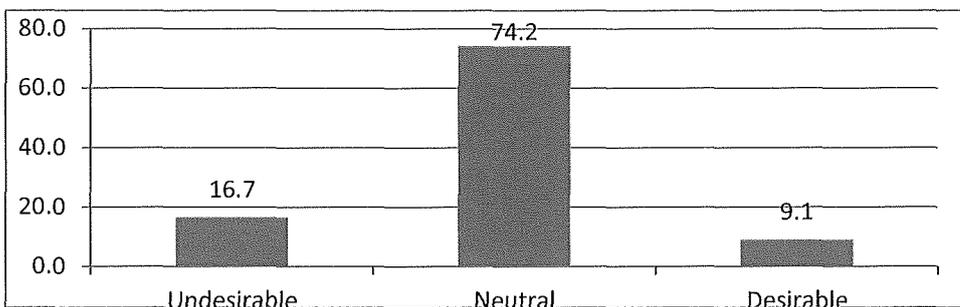
**Figure 4.44:** I make mobile banking payments and transfers

The above figure shows that a large proportion of the respondents indicated that they found it desirable to make mobile banking payments and transfers.



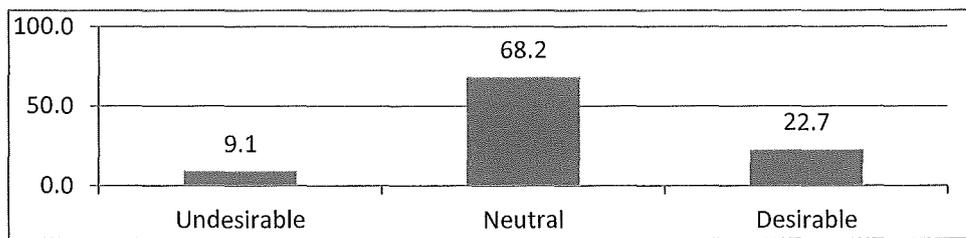
**Figure 4.45:** I view accounts and balances via mobile banking

The above figure shows that a large proportion of the respondents indicated they were neutral on the statement regarding viewing accounts and balances via mobile banking.



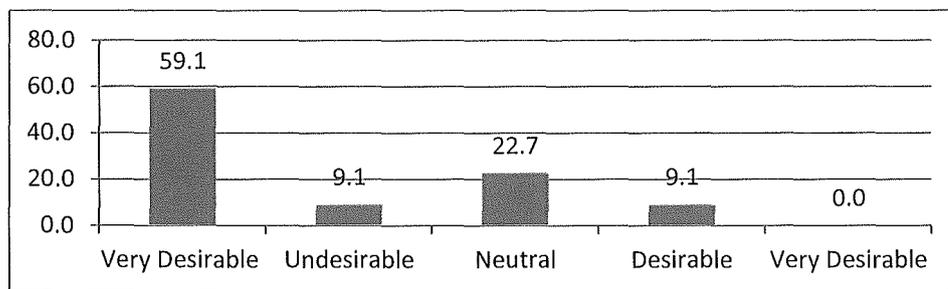
**Figure 4.46:** Let someone know via email or SMS that you have paid them

The above figure shows that a large proportion of the respondents indicated they were neutral on the statement relating to letting someone know via email or SMS that they had paid them.



**Figure 4.47:** View and download banking account balances via mobile banking

The above figure shows that a large proportion of the respondents indicated they were neutral on the statement relating to viewing and downloading banking account balances via mobile banking.



**Figure 4.48:** Apply for banking products and services via mobile banking

The above figure shows that a large proportion of the respondents indicated that they found it very desirable to apply for banking products and services via mobile banking.

#### 4.5 MEASURES OF ASSOCIATION

Association between various antecedents of the technology acceptance and behaviour of elderly citizens towards banking technologies is presented in this section of the report. The correlation between "do you currently have access to any of the following technologies and technology-based banking products" and "I keep up with the latest mobile technologies in my area of interest" shows +0.722. This means elderly citizens are generally happy with technology access available and use mobile devices to access banking products accordingly.

The correlation between age and that any banking transaction you do electronically should be confirmed later with someone in writing, shows +0.512. This means that if a person grows older there is a weak chance (correlation) of 0.512 that people will have a higher education and due to this still require written confirmation for payments.

The correlation between "do you currently have access to any of the following technologies and technology-based banking products" and "I can usually figure out mobile technology products and services without help from others", shows + 0.815- a high positive association. This means that elderly citizens do have mobile access to technology and are able to understand how the services or technology are to be used without extra help from others.

The correlation between age and purchase small items like tickets via banking online services shows +0.900 – a high positive association. These elderly citizens are knowledgeable aware on how to purchase tickets via banking services and are making use of the products or services available through mobile apps and other technology sources.

The correlation between "your highest level of education" and "there is no such thing as a manual for mobile technology products that is written in plain language", shows + 0.896 – a positive association. This means that elderly people do not believe that a manual book is needed to understand technology today and they are well educated to understand how mobile devices that supply products or services are to be operated.

The correlation between "what is your home language" and "when applying for banking services and products online", shows + 0.711 – a positive association. Elderly persons are generally happy with the language options available online for them to understand the banking services available in their preferred language.

The correlation between "do you currently have access to any of the following technologies" and technology-based banking products" and "whenever something gets automated, you need to check carefully that the machine is not making mistakes" is +0.867 – a high positive correlation. Generally, older people do have access to banking based technology and are aware of scammers and often check that the machine is not making mistakes when transacting.

The correlation between "I view accounts and balances through mobile banking" and "applying for banking products and services via mobile banking", shows +0.976 – a positive association. This means that elderly persons are viewing their accounts, checking balances, applying for banking products and services via mobile banking regularly. This is a good result.

The correlation between "I can usually figure out mobile technology products and services without help from others" and "have you used any of the following technology-based

banking products and services in the last 12 months" shows a correlation of -0.273 – a negative association. This means that in the past year older persons were not able to figure out all the mobile technologies and services available and sometimes did require the assistance from others to understand technology-based products and services.

The correlation between "mobile technologies give me more control of my daily life" and "mobile technology give me freedom to move" shows -0.222 – a negative association. Older persons are not able to succumb to mobile technology to control their life daily and the technology available doesn't allow them to feel free when using it.

The correlation between "I enjoy the challenge of figuring out how gadgets work" and "whenever something gets automated and you need to check carefully that the machine is not making mistakes", shows -0.257 - a negative association. This shows that older persons do not want to check that machines are faulty and do seem to be interested in figuring new devices or technologies or services that are automated as it seems to be an effort to try to learn or use new technologies.

The correlations between "when replacing important people-tasks organizations must be careful because mobile technologies can breakdown or get disconnected" and "let someone know via email or SMS that you have paid them", shows -0.229 – a negative association. This means that older person do not trust technology-based services using their mobile because of fraud, disconnections, technology failures due to electricity power failures. They prefer to go into banks and shops to do their transactions directly and feel in control in this way.

The correlation between "I don't think it's safe to give out a credit card number over the cellphone" and "let someone know via email or SMS that you have paid them" shows -0.697 – a high negative association. This means that elderly people do not trust giving their credit card number over the cellphone and neither can they trust a notification to show a transaction has been successful. Generally, older people approve of directly paying with their credit card at the facility and do not trust technology as younger people do; they prefer the old fashioned way of payments to be done.

The correlation between "the human touch is very important when banking" and "have you used any of the following technology-based banking products and services in the last 12 months", shows -0.236 – a negative association. This means that the older people do like

the human touch when banking and this has caused them not to have used technology-based banking products so often in the past 12 months.

The correlation between "if I provide information over a machine, I'm never sure if it gets to the right place" and "banking services and products that use mobile technology are much more convenient to use", shows -0.251 – a negative association. This means that older people do not trust technology-based services as younger people do, as they do not believe that mobile technology is convenient when banking.

The correlations between "learning about mobile technology can be as rewarding as technology itself" and "any banking transaction you do electronically should be confirmed later with someone in writing", shows +0.829 – a positive association. This means older people find it difficult to learn to adapt to technology. It isn't rewarding in their eyes and overall they select written confirmation after a payment has been made electronically.

The correlation between "learning about mobile technology can be as rewarding as technology itself" and "whenever something gets automated, you need to check carefully that the machine is not making mistakes", shows -0.333 – a negative association. This means older people find it difficult in using the technology available and do not trust machine payments as they are fearful of the not being able to control how their money is been handled.

The correlations between "buy prepaid phone airtime via mobile banking and let someone know via email or SMS that you have paid them", shows +0.930 – a positive association. This means that elderly people do trust mobile banking to buy airtime and notifying someone that they have paid via bank SMS notification.

The correlation between "buy prepaid phone airtime via mobile banking" and "when I get technical support from a provider of mobile technologies I feel as if I am taken for granted", shows +0.887 – a positive association. This means that elderly people do not trust technical support given from mobile service providers of technology when purchasing airtime via mobile banking.

The correlations between "purchase small items like tickets via banking online services" and "downloading banking account statements through mobile banking", shows +0.660 – a positive association. This means older people are generally happy with purchasing tickets and downloading bank statements via mobile banking.

## **4.6 CONCLUSION**

Analysis of data gathered in this study was presented and explained in this chapter. This research supports and agrees with Roboff and Charles, (1998; Black *et al.*, Howcroft *et al.* (2002) that some of the factors that affect adoption by customers to use banking technologies are associated with risks, security, and lack of information. The main findings and recommendations of the study will be discussed in the next chapter (Chapter 5).

## CHAPTER FIVE

### MAIN FINDINGS AND RECOMMENDATIONS

#### 5.1 INTRODUCTION

Organisations can be seen as dynamic, continually changing living organisms. Banks invest in technology, particularly mobile banking, trying to expand their market share and increase their business horizons as development occurs in business environments. According to Johns and Perrott (2008) technological banking services provide the bank with competitive stability to provide more and quicker services to the customer. Continuous developments in technology constantly change how clients perform banking activities (Yoon and Steege, 2013). Banking is anyhow motivated by improving technology trends, making banking convenient and simple to customers. Furthermore, banks rely more on technology to perform day to day operations and distribute services. Yiu *et al.* (2007) maintain that technology provides banks a viable opportunity to meet customer demands. Banks should understand the receptiveness and perception of customers towards their banking channels and services.

The preceding chapter (Chapter 5) presented the research data collected during this study. Main findings and recommendations of the study are presented in this chapter (Chapter 6). This chapter provides a visibility of answers covering the research questions. Banks are offered recommendations that can be exploited to maximize usage of banking technologies by elderly citizens.

#### 5.2 RESPONSE TO THE RESEARCH QUESTIONS

This study aimed to uncover the causes of reluctance by elderly citizens from using mobile banking technologies. The study sought to establish issues affecting the adoption of technological banking by elderly citizen customers and what banks could do to promote usage of banking technologies. A survey was conducted through a quantitative methodology. The population size of 66 elderly citizen bank customers responded to the study. Data gathered from the survey was processed and analysed in a Statistical Package.

The main findings of this research in relation to each research question will now be discussed. Each question is followed by a discussion of the findings relating to that question.

### **5.2.1 Do senior citizen bank customers currently have access to mobile technology-based banking products and services more technologically ready for technology-based banking services?**

Polat (2012) argues that the digital divide is the inequalities in the access to the Internet, the extent of use, knowledge of search strategies and the lack of access to other Information and Communication Technology (ICT) services, such as access to a computer and phone. Mobile banking makes use of a telecommunications network to access personal or company accounts, request consultancy, make payments, purchase banking, financial or insurance products, and mobile banking is helpful to low-income individuals because they have a strong need for access to banking services (Garrone and Colombo, 1999).

Data gathered during the research shows that elderly citizen customers have average access to mobile banking technologies. This is evidenced by information shown in Figure 4.5, which shows that only 54% of the research population strongly agree that mobile technology does not limit their banking hours. Furthermore, Figure 4.4 shows that 45% of elderly citizen banking customers perceive banking products and service easy to use and Figure 4.4 shows respondents have a middling perception of banking technologies offering them more control in their lives, which are requirements for technology acceptance.

Moreover, the study discovered that respondents' education level does not cause any barrier to acceptance of mobile banking technologies. The study brings to a close that elderly citizens have more access to and mostly use traditional banking service and products such as bank accounts, telephone, ATM and the actual branch. Banks should promote awareness of some of their banking products and services to elderly citizens.

The technology acceptance model (TAM) is widely used by researchers to predict the adoption of already existing technology and banks can use the same model to study acceptance before the innovation is released for public use (Yiu *et al.* 2007). Yoon and Steege (2013) note that customers can access their bank accounts, transfer funds between accounts and conduct other banking transaction electronically through Internet Banking and mobile banking. However, there is still a prerequisite of additional social and economical sustainable systems in the current global economy.

Early adopters are normally educated, with a reasonable educational background and in the space of mobile electronic commerce, mobile banking services may be considered further of a lifestyle service, and not a necessity and the use of mobile banking is normally

associated with a social image (Lu *et al.* 2011). When examining studies related to elderly people, the compatibility should be considered because elderly people are usually more resistant to adopting innovations (Ryu *et al.*, 2009).

Yoon and Steege (2013) argue that reliability is the level to which the user trusts that the use of mobile banking has no security or privacy threats and this is another barrier that affect the adoption of IT services in banking. Lack of credibility reduces the chances of adoption of the technology. People have used IT banking services regardless of the security problems because they mostly value usability.

### **5.2.2 Do senior citizen bank customers currently use mobile technological banking services because they are more technology ready?**

Technological banking systems for customers started with automated teller machines (ATMs) installed against the wall to dispense cash on the instruction of the user, and the institution of technology became an important innovation to the bank and customers. Competition in the financial industry encourages banks to revise the way they offer products and services to customers, continuously looking to creating methods that would increase the customer's adoption of technology and these initiatives help them to remain competitive (Johns and Perrott, 2006).

Karahasanovic *et al.* (2009) argue that the elderly have been overlooked as users of technology since they are believed to be both dismissive and unable to adapt to new technology. The aged may experience related impairments, such as deterioration of vision, memory and impaired intellectual ability but they might still be able to perform certain activities or use certain devices. The study uncovered that elderly citizen banking customers have insecurity and worry about safety when it comes to using technological banking products and services. This is maintained by Figure 4.28 which shows that 60% of respondents who have access to mobile banking technologies do not have confidence in making transactions online.

Moreover, the study revealed that elderly citizen banking customers' trust of mobile banking is very limited. Figure 4.27 supports this finding by showing that 86% of respondents do not give information such as credit card number over the phone. Figure 4.26 further support it by showing that 83% of the respondents believe that technology has the tendency to fail at any time. Trust in technological solutions should influence use or adoption of a technology.

Technology can decrease costs for banks but it may have a certain impact on elderly citizens. It may be difficult to generalise the impact because some components of the population are flexible to reorganise their banking needs but the elderly and disabled may find it tough. Thus, removal of branches may affect the least technologically mobile, least physically able and those who cannot afford more (Argent, 2002).

Ryu *et al.* (2009) argue that there is a well-adjusted diffusion of older adults into online computing, even though many of them have been using computers for some time in their workspace and personal capacity. This may imply there is a possible adoption of elderly people of mobile banking. Unfortunately, few studies have explored mobile banking usability for elderly people.

### **5.2.3 Do senior citizen bank customers have a higher perceived desirability of using mobile technology-based banking services more?**

The study uncovered that elderly citizen customers are reluctant to use technology-based banking products and services. Figure 4.13 shows that only 40% were concerned that their friends used mobile banking and they were left behind. This finding exposes limited awareness of information on mobile banking and a lack of enhancing user keenness.

Using the Technology Acceptance Model (TAM) in research for finding certain behaviours of elderly people, can yield theories such as (Karahasanovic *et al.* 2009):

- Fear of learning difficult systems
- Lack of social influence
- Pre-established negative attitudes towards technology (e.g. privacy and computer anxiety)

Ryu *et al.* (2009) note that older people may be resilient to change but are able to adopt to new innovations that suit their needs and those that are easy for them to use. Direct contact with elderly users shows to be working, unlike relying on marketing practices, meaning training can change the attitude of elderly people towards new innovations.

Marketing in banks has also been playing a strategic role by creating new channels through which customers can transact their accounts and interact with their bank, and for that reason it is not surprising that the issue of valuation of customers is becoming important (Haenlein *et al.*, 2007).

Transformation and growth in the Internet world have positively changed how banking services are offered to clients and how clients enjoy banking services. Customers can

access their bank accounts, transfer funds between accounts and conduct other banking transactions electronically through Internet Banking and mobile banking.

Seyfang and Longhurst (2013) argue that there is still a great necessity for more socially and economically sustainable systems in the current global economy. Yiu *et al.* (2007) suggest that personal innovativeness in the domain of information technology (PIIT) can serve as a fundamental mediator between customers' experience and the perception towards the technology and is helpful in evaluating barriers to the adoption of new technology.

Trust in the banking technology channels is important for customers in order to become active in using these technologies, and trust in financial service providers does not seem to increase elderly customers' probability of adopting online banking (Guerrero *et al.* 2007). Banks should implement tough security measures in their Internet banking systems that would offer customers more confidence and customers should be aware of such security measures; in this regard customers would recognize online services as secure (Guerrero *et al.* 2007).

### **5.3 SUMMARY OF FINDINGS**

The main objective of this study was to unveil the challenges faced by elderly citizen banking customers in using mobile banking technologies. In particular, the study aimed at identifying barriers to the use of mobile banking technologies by elderly citizens.

Below are the main findings that were established from the study.

5.3.1 Elderly citizen bank customers only have average access to technology based banking service and mostly use bank accounts, telephones, ATM and the actual branches. There is a lack of correlation between gender and education levels of elderly citizen bank customers and the manner in which they adopt technology.

5.3.1 Elderly citizen bank customers have average access to technology banking solutions and have lesser eagerness to learn further about technological banking products and services. A part of the elderly citizen bank customers is not exposed to recent information about technological banking products and services available to meet their requirements.

5.3.3 Elderly citizen bank customers are cautious about security in mobile banking and trust is very limited.

## **5.4 LIMITATIONS**

The study was limited to the North-West Province due to practicality, budget constraints and area of interest. Care givers in the old age centres assisted with selecting the respondents for the study, as some may have physiological and psychological challenges to participate in the research and therefore, this led to a non-probability sampling technique. In light of this, extrapolating the findings of this research to the entire population of elderly citizen bank customers is not advised. Old age centres utilized in this study were selected with consideration of the accessibility and convenience on location for the researcher, and this portrays non-scientific sampling methods limitations.

## **5.5 RECOMMENDATIONS AND GUIDELINES**

In the light of the findings derived from the study, recommendations are given below to improve adoption of mobile banking by elderly citizens.

- Trust in technology is built the same way as trust in people. Security in banking technologies should be improved to provide customers with technology safety, reliability and dependable friendliness. This recommendation is based on the study's finding that elderly customers have limited trust on mobile banking technology.
- Banks should improve marketing and publicity of technological banking solutions, products and services. Banks should further provide basic tutoring of using banking technologies to customers. This recommendation is based on the study's finding that elderly citizen banking customers have limited access and information about banking technology services and products that may suit their requirements.
- Banking personnel should be available and ensure that older persons or individuals have been briefed on how to use cellphone or Internet banking services. This will assist older persons to be self-dependent and encouraged to explore mobile banking services.
- The banks should develop strategies that would remove fear of technology from elderly people. The literature reviewed indicates that elderly people do not have the courage to use Internet because of its continuous changes.
- Banks are faced with challenged slow Internet speed. Transactions take long before they can be concluded. Upgrading of the existing data lines would be advantageous. This would encourage persons to use Internet in a cost effective manner.

## **5. 6 CONCLUSION**

Technology continues to play a significant role in the banking industry. It is important for banks to consider a wide variety of customers or users when planning, building and running technological banking solutions. This study investigated barriers to using mobile banking technologies by elderly citizens. In the light of the study's findings that elderly citizens have a fair desire to use mobile banking this eagerness needs to be improved. It can be concluded that banks should advance their marketing and promotion on mobile banking technologies. Information Technology is used by customers to make transactions and perform other services; Information Technologies have a supreme role in building the image of banks and improve brand loyalty by keeping customers satisfied. Banks should understand that their primary business is banking services to clients and enabling customers to bank and transact, they should also strive for most favourable use of existing and emerging technologies. Furthermore, the study uncovered that banks need to improve safety and security in using mobile banking technologies so that elderly citizen customer's trust and confidence in mobile banking technologies can be improved. The role of information technology in creating a lively, muscular and reliable bank is evident.

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ARTICLES

	Definitions	Technology in Banking	Technology readiness	Self-service	Transition	Trust and cellphone banking
Diffusing wireless applications in a mobile world 1	*	*	*	*	*	*
Analysing energy-incentivized cooperation in next generation mobile networks using normative frameworks 2		*	*	*	*	*
Digital exclusion in turkey: A policy perspective 3	*	*	*	*	*	*
A global model or a scaled down version? Geographies 4		*	*	*	*	*
Factors affecting the adoption of internet banking in Hong Kong - implications 5	*	*	*	*	*	*
Technology readiness and the evaluation and adoption of self-service technologies 6	*	*	*	*	*	*
Application of the latent class regression methodology to the analysis of Internet use for banking transactions 7			*	*	*	*
Mobile applications: Status and trends 8	*	*	*		*	*
Market-drive of innovative services: The case home banking 9	*	*	*		*	*
Technological affluence and subjective well-being 10	*	*	*	*	*	*
Wallbanking innovativeness and computer attitudes 25-40 yr old ATM-users on the spot 11	*	*	*	*	*	*
Time banking service exchange systems: Policy and Practice implications of youth 12	*	*	*	*	*	*
A model to determine customer lifetime value in a retail banking context 13	*	*	*	*	*	*
Dynamics of retail-bank branching in Antwerp 14		*	*			
Are banks too big to fail or too big to save? 15		*	*		*	*
Internet-based e-banking and customers attitudes 16		*	*	*	*	*
Dynamics between the trust transfer process and intention to use mobile payment services: across-environment perspective 17	*	*	*	*	*	*
Mobile-banking adoption by Iranian bank clients 18	*	*	*	*	*	*
Enactment and use of information and the media among older adults 19	*		*	*	*	*
Understanding the factors affecting online elderly user's participation in video UCC services 20			*	*	*	*
Co-creation and user-generated and user-generated content-elderly people's user requirements 21			*	*	*	*
Mobile payment services adoption across time 22			*	*	*	*
Development of a quantitative model 23	*		*	*	*	*
Growing green money? 24	*		*	*	*	*
Technology roadmapping for technology-based product-service integration: a case study 25	*		*	*	*	*
Investigating the use of information technology in managing innovation: 26	*		*	*	*	*
Deploying intelligent e-health services in a mobile gateway 27	*	*	*	*	*	*
Consumer perceptions of risk and uncertainty 28			*	*	*	*
Key influences and inhibitors on adoption of the Internet for banking 29			*	*	*	*
Customers' perceptions regarding e-banking in an emergency economy 30		*	*	*	*	*
Interpersonal service quality, self-service technology (SST) service quality, and retail. 31		*	*	*	*	*
Information technologies and transitions in the lives of 55-65 yr olds: The case of colliding life interests 32			*	*	*	*
An exploratory study of ageing women's perception access to health informatics via mobile phone-based intervention 33			*	*	*	*
Triggers and barriers to financial inclusion 34	*	*			*	*
Factors underlying attitude formation online banking in Finland 35	*			*	*	*
Customer acceptance of internet banking in estonia 36		*				
Assessing the human element in service personality information 37			*			
The role of technology readiness in customers' perception 38			*	*	*	*
The impact of Internet banking on business-customer relationships 39	*	*	*	*	*	*
Adoption of internet banking services in China? 40	*		*			

# APPENDIX B: QUESTIONNAIRE

FOR OFFICE USE ONLY: Respondent Code: \_\_\_\_\_

## “Factors affecting the Use of Banking Technologies by Elderly Citizens”

Graduate School: North-West University

Researcher: Lebo Mosolotsane

Supervisor: Prof S Lubbe

### Note to the respondent:

- We need your help to understand the factors affecting the use of banking technologies by elderly
- Citizens.
- Although we would like you to help us, you do not have to take part in this survey.
- If you do not want to take part, just hand in the blank questionnaire at the end of the survey session.
- What you say in this questionnaire will remain private and confidential. No one will be able to trace your opinions back to you as a person.

### The questionnaire as three parts:

Part 1 asks permission to use your responses for academic research.

Part 2 asks general personal particulars like your age, gender etc.

Part 3 to 5 asks questions relating to the use of banking technologies by elderly citizens

### How to complete the questionnaire:

1. Please answer the questions as truthfully as you can. Also, please be sure to read and follow the directions for each part. If you do not follow the directions, it will make it harder for us to do our project.
2. We are only asking you about things that you and your fellow colleagues should feel comfortable telling us about. If you don't feel comfortable answering a question, you can indicate that you do not want to answer it. For those questions that you do answer, your responses will be kept confidential.
3. You can mark each response by making a tick or a cross, or encircling each appropriate response with a PEN (not a pencil), or by filling in the required words or numbers.

*Thank you very much for filling in this questionnaire.*

Part 1: Permission to use my responses for academic research

I hereby give permission that my responses may be used for research purposes provided that my identity is not revealed in the published records of the research.

Initials and surname \_\_\_\_\_ Postal address: \_\_\_\_\_

\_\_\_\_\_ Postal code: \_\_\_\_\_

Contact numbers: Home: \_\_\_\_\_ Cell: \_\_\_\_\_

No	<b>PART 2: GENERAL PERSONAL PARTICULARS</b>			Mobile technology gives me more control of my daily life
	<i>Please tell us a little about yourself</i>			
	<i>Please mark only ONE option per question below.</i>			
1.	How old are you? <input type="checkbox"/> 50-60 years <input type="checkbox"/> 61-65 years <input type="checkbox"/> 66-70 years	<input type="checkbox"/> 71-75years <input type="checkbox"/> 76-80 years <input type="checkbox"/> Over 80 years	8.	<input type="checkbox"/> Strongly agree <input type="checkbox"/> Agree <input type="checkbox"/> Disagree <input type="checkbox"/> Strongly disagree
2.	What is your gender? <input type="checkbox"/> Male	<input type="checkbox"/> Female	9.	Banking services and products that use mobile technology are much more convenient to use <input type="checkbox"/> Strongly agree <input type="checkbox"/> Agree <input type="checkbox"/> Disagree <input type="checkbox"/> Strongly disagree
3.	What is your highest level of education? <input type="checkbox"/> Some primary school or less <input type="checkbox"/> Some high school <input type="checkbox"/> Matric <input type="checkbox"/> Technical qualification <input type="checkbox"/> Undergraduate degree		10	I like the idea of banking with mobile technology because I am not limited to business hours <input type="checkbox"/> Strongly agree <input type="checkbox"/> Agree <input type="checkbox"/> Disagree <input type="checkbox"/> Strongly disagree
4.	What is your home language? <input type="checkbox"/> Afrikaans <input type="checkbox"/> English <input type="checkbox"/> Nguni languages	<input type="checkbox"/> Sotho <input type="checkbox"/> Tsonga <input type="checkbox"/> Other African or European language/s	11.	I prefer the use of most technologies available <input type="checkbox"/> Strongly agree <input type="checkbox"/> Agree <input type="checkbox"/> Disagree <input type="checkbox"/> Strongly disagree
	<b>PART 3: ACCESS TO TECHNOLOGIES AND TECHNOLOGY BASED-BANKING SERVICES AND PRODUCTS</b>		12.	I like mobile technology that allows me to tailor my needs <input type="checkbox"/> Strongly agree <input type="checkbox"/> Agree <input type="checkbox"/> Disagree <input type="checkbox"/> Strongly disagree
	<i>Please mark only ONE option per question below.</i>			

5.	Do you currently have access to any of the following technologies and technology based banking products and services?	<input type="checkbox"/> Bank Account <input type="checkbox"/> Credit card <input type="checkbox"/> Cell-phone <input type="checkbox"/> Telephone Landline or Landline Internet Access <input type="checkbox"/> Broadband Internet Access/Wireless Handheld	13.	I find mobile technologies to be mentally stimulating  <input type="checkbox"/> Strongly agree <input type="checkbox"/> Agree <input type="checkbox"/> Disagree <input type="checkbox"/> Strongly disagree
6.	Are you planning to have any of the following technology based banking products and services in the next 12 months?	<input type="checkbox"/> Bank Account <input type="checkbox"/> Credit card <input type="checkbox"/> Cell-phone <input type="checkbox"/> Telephone Landline or Landline Internet Access <input type="checkbox"/> via Broadband Internet	14.	Mobile technology gives me freedom to move  <input type="checkbox"/> Strongly agree <input type="checkbox"/> Agree <input type="checkbox"/> Disagree <input type="checkbox"/> Strongly disagree
7.	Have you used any of the following technology based banking products and services in the last 12 months?	<input type="checkbox"/> Atm Banking/ SMS/Email Notifications <input type="checkbox"/> Telephonic Landline Banking <input type="checkbox"/> Internet Banking or Online shopping via rewards (EBucks)	15.	Learning about mobile technology can be as rewarding as technology itself  <input type="checkbox"/> Strongly agree <input type="checkbox"/> Agree <input type="checkbox"/> Disagree <input type="checkbox"/> <b>Strongly disagree.</b>
<b>PART 4: USAGE OF CERTAIN TECHNOLOGY-BASED BANKING PRODUCTS AND SERVICES/ TECHNOLOGY READY.</b>  <i>Please mark only ONE option per question below.</i>			16.	I feel confident that mobile technology will do what you tell them to do  <input type="checkbox"/> Strongly agree <input type="checkbox"/> Agree <input type="checkbox"/> Disagree <input type="checkbox"/> Strongly disagree
17.	Other people come to me for advice on mobile technologies  <input type="checkbox"/> Strongly agree <input type="checkbox"/> Agree <input type="checkbox"/> Disagree <input type="checkbox"/> Strongly disagree.		27.	When replacing important people-tasks organisations must be careful because mobile technologies can breakdown or get disconnected  <input type="checkbox"/> Strongly agree <input type="checkbox"/> Agree <input type="checkbox"/> Disagree <input type="checkbox"/> Strongly disagree.

18.	It seems like my friends are learning more about mobile technologies than I am  <input type="checkbox"/> Strongly agree <input type="checkbox"/> Agree <input type="checkbox"/> Disagree <input type="checkbox"/> Strongly disagree.	28.	Mobile technologies have a health or safety that is not discovered until people have used them  <input type="checkbox"/> Strongly agree <input type="checkbox"/> Agree <input type="checkbox"/> Disagree <input type="checkbox"/> Strongly disagree
19	In general, I am the first amongst my circle of friends to acquire mobile technologies  <input type="checkbox"/> Strongly agree <input type="checkbox"/> Agree <input type="checkbox"/> Disagree <input type="checkbox"/> Strongly disagree.	29.	Mobile technologies makes it too easy for governments and companies to spy on other people  <input type="checkbox"/> Strongly agree <input type="checkbox"/> Agree <input type="checkbox"/> Disagree <input type="checkbox"/> Strongly disagree
20	I can usually figure out mobile technology products and services without help from others  <input type="checkbox"/> Strongly agree <input type="checkbox"/> Agree <input type="checkbox"/> Disagree <input type="checkbox"/> Strongly disagree.	30.	Technology always seems to fail at the any possible time  <input type="checkbox"/> Strongly agree <input type="checkbox"/> Agree <input type="checkbox"/> Disagree <input type="checkbox"/> Strongly disagree
21.	I keep up with the latest mobile technologies in my area of interest  <input type="checkbox"/> Strongly agree <input type="checkbox"/> Agree <input type="checkbox"/> Disagree <input type="checkbox"/> Strongly disagree.	31.	I don't think it's safe to give out a credit card number over the cell-phone  <input type="checkbox"/> Strongly agree <input type="checkbox"/> Agree <input type="checkbox"/> Disagree <input type="checkbox"/> Strongly disagree.
22	I enjoy the challenge of figuring out how gadgets work  <input type="checkbox"/> Strongly agree <input type="checkbox"/> Agree <input type="checkbox"/> Disagree <input type="checkbox"/> Strongly disagree.	32.	I do any kind of financial transaction over the cell-phone  <input type="checkbox"/> Strongly agree <input type="checkbox"/> Agree <input type="checkbox"/> Disagree <input type="checkbox"/> Strongly disagree
23.	I find I have fewer problems than other in making mobile technology work for me  <input type="checkbox"/> Strongly agree <input type="checkbox"/> Agree <input type="checkbox"/> Disagree <input type="checkbox"/> Strongly disagree	33.	I don't feel confident transacting with organisations online  <input type="checkbox"/> Strongly agree <input type="checkbox"/> Agree <input type="checkbox"/> Disagree <input type="checkbox"/> Strongly disagree

24.	Sometimes I think mobile technology are not designed for use by ordinary people	<input type="checkbox"/> Strongly agree <input type="checkbox"/> Agree <input type="checkbox"/> Disagree <input type="checkbox"/> Strongly disagree.	34.	Any banking transaction you do electronically should be confirmed later with someone in writing	<input type="checkbox"/> Strongly agree <input type="checkbox"/> Agree <input type="checkbox"/> Disagree <input type="checkbox"/> Strongly disagree
25.	I do prefer having a basic model, rather, than one with a lot of features.	<input type="checkbox"/> Strongly agree <input type="checkbox"/> Agree <input type="checkbox"/> Disagree <input type="checkbox"/> Strongly disagree	35.	There is no such thing as a manual for mobile technology products that is written in plain language	<input type="checkbox"/> Strongly agree <input type="checkbox"/> Agree <input type="checkbox"/> Disagree <input type="checkbox"/> Strongly disagree.
26.	It is embarrassing when I have trouble with a mobile technology gadget when people are watching	<input type="checkbox"/> Strongly agree <input type="checkbox"/> Agree <input type="checkbox"/> Disagree <input type="checkbox"/> Strongly disagree	36.	When I get technical support from a provider of mobile technologies I feel as if I am taken for granted.	<input type="checkbox"/> Strongly agree <input type="checkbox"/> Agree <input type="checkbox"/> Disagree <input type="checkbox"/> Strongly disagree.
37.	The human touch is very important when banking	<input type="checkbox"/> Strongly agree <input type="checkbox"/> Agree <input type="checkbox"/> Disagree <input type="checkbox"/> Strongly disagree.	45	Purchase large items like furniture via banking online services	<input type="checkbox"/> 1 <input type="checkbox"/> 2 <input type="checkbox"/> 3 <input type="checkbox"/> 4 <input type="checkbox"/> 5
38.	I prefer to talk to someone rather than a machine	<input type="checkbox"/> Strongly agree <input type="checkbox"/> Agree <input type="checkbox"/> Disagree <input type="checkbox"/> Strongly disagree	46	Apply for banking services and products online	<input type="checkbox"/> 1 <input type="checkbox"/> 2 <input type="checkbox"/> 3 <input type="checkbox"/> 4 <input type="checkbox"/> 5
39.	If I provide information over a machine, I'm never sure if it gets to the right place	<input type="checkbox"/> Strongly agree <input type="checkbox"/> Agree <input type="checkbox"/> Disagree <input type="checkbox"/> Strongly disagree	47	Buy prepaid phone airtime via mobile banking	<input type="checkbox"/> 1 <input type="checkbox"/> 2 <input type="checkbox"/> 3 <input type="checkbox"/> 4 <input type="checkbox"/> 5

	<b>PART 5: PERCEPTIONS OF THE FUTURE DESIRABILITY OF TECHNOLOGY BASED SERVICES?</b>  1=Very undesirable  2= Undesirable  3= Neutral  4= Desirable  5= Very desirable		48	Make mobile banking payments and transfers  <input type="checkbox"/> 1  <input type="checkbox"/> 2  <input type="checkbox"/> 3  <input type="checkbox"/> 4  <input type="checkbox"/> 5.	
40	Make mobile banking transfers and payments  <input type="checkbox"/> 1  <input type="checkbox"/> 2  <input type="checkbox"/> 3  <input type="checkbox"/> 4  <input type="checkbox"/> 5		49	View accounts and balances via mobile banking  <input type="checkbox"/> 1  <input type="checkbox"/> 2  <input type="checkbox"/> 3  <input type="checkbox"/> 4  <input type="checkbox"/> 5	
41	View accounts and balances through mobile banking  <input type="checkbox"/> 1  <input type="checkbox"/> 2  <input type="checkbox"/> 3  <input type="checkbox"/> 4  <input type="checkbox"/> 5		50	Let someone know via email or SMS that you have paid them  <input type="checkbox"/> 1  <input type="checkbox"/> 2  <input type="checkbox"/> 3  <input type="checkbox"/> 4  <input type="checkbox"/> 5.	
42.	Download banking account statements through mobile banking  <input type="checkbox"/> 1  <input type="checkbox"/> 2  <input type="checkbox"/> 3  <input type="checkbox"/> 4  <input type="checkbox"/> 5.		51	View and download banking account balances via mobile  <input type="checkbox"/> 1  <input type="checkbox"/> 2  <input type="checkbox"/> 3  <input type="checkbox"/> 4  <input type="checkbox"/> 5.	
43	Purchase small items like tickets via banking online services	<input type="checkbox"/> 1  <input type="checkbox"/> 2  <input type="checkbox"/> 3  <input type="checkbox"/> 4  <input type="checkbox"/> 5.	52	Apply for banking products and services via mobile banking	<input type="checkbox"/> 1  <input type="checkbox"/> 2  <input type="checkbox"/> 3  <input type="checkbox"/> 4  <input type="checkbox"/> 5.
44	Whenever someone gets automated, you need to check carefully that the machine is not making mistakes	<input type="checkbox"/> 1  <input type="checkbox"/> 2  <input type="checkbox"/> 3  <input type="checkbox"/> 4  <input type="checkbox"/> 5.	<u><b>THE END</b></u>   <u><b>THANK YOU</b></u>		