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The impact of cell-phone banking on the lives of the low income population in South Africa

Roshan Maharaj

A research report submitted to the Faculty of Commerce, Law and Management, University of the Witwatersrand, in partial fulfilment of the requirements for the degree of Master of Business Administration

Johannesburg, 2015

ABSTRACT

Branchless banking is appealing to banks within South Africa as it presents an opportunity for greater reach and lower cost of service delivery. Cell-phone technology is one of the media through which branchless banking is delivered to customers in South Africa. Due to certain embedded technology and SMSes (short message system) being available on all cell-phones, this form of banking can be accessed with any cell-phone.

Cell-phone penetration in South Africa is very high and the majority of the low income population of South Africa have adopted this technology as their means of communication.

With the push from government for financial inclusion of the masses and the push from the banks to increase profits, cell-phone technology presents an opportunity to enable the delivery of banking to the poor.

This study is aimed at identifying the impacts that cell-phone banking has on the low income population within South Africa, both positive and negative, by means of a qualitative study that was designed to illicit a deeper understanding of those impacts. A total of 12 semi-structured interviews were conducted with respondents from LSM groups 1 to 4.

The impact themes and discussions provide a basis from which banks and mobile network operators can consider certain marketing campaigns to increase adoption. The government of South Africa can also gain insight from this study regarding the relevance of the policies governing cell-phone technology and banks.

The study finds that there is a strong bias to cell-phone banking having a positive impact on the low income population of South Africa. It further finds that education and limit restrictions are probably required to sustainably embed this technology as a vehicle to branchless banking, whilst protecting the users from others and themselves.

DECLARATION

I, Roshan Maharaj, declare that this research report is my own work except as indicated in the references and acknowledgements. It is submitted in partial fulfilment of the requirements for the degree of Master of Business Administration in the University of the Witwatersrand, Johannesburg. It has not been submitted before for any degree or examination in this or any other university.

Roshan Maharaj

DEDICATION

I dedicate this study to my wife, Cheryl, and our two beautiful children, Daniella and Kayden. Thank you for your patience, love and support, and sorry for the time that I took away from our family. Without your understanding and support this journey would not have been complete.

Thank you!

ACKNOWLEDGEMENTS

I acknowledge my wife, Cheryl, who stood by me in my weakest moments and gave me the much needed strength to finalise this study. To my dad, Mr. PH Maharaj, thank you, for your confidence in me and your great sense of humour.

To the participants that allowed me to interview them, I say thank you. This study would not have been possible without you.

To my employer, OUTsurance Insurance Company Ltd, and my immediate manager and best friend, Burton Naicker. Thank you for the time, guidance and patience afforded to me that allowed me to complete this task.

Special mention must be made of the assistance received from Professor Philip Serumaga-Zake who guided this study to its end.

Last but not least, I acknowledge the guidance received from my supervisor Dr. Rabelani Dagada His guidance and input was invaluable from the start to the end of his study.

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CHAPTER 1. INTRODUCTION

1.1 Purpose of the study

The purpose of this research is to analyse and evaluate the impact of advancements in mobile banking technology within the banking sector. The report attempted to establish whether banks in South Africa would be able to use this technology to sustainably offer financial services to the large lower income population of South Africa. The report also focuses on the impact these advancements in mobile banking has on the lives of the low income population of South Africa.

The current research literature can be classified into three types of studies: those that explain the adoption of m-banking systems; those that assess the impact on people and economies of such systems; and a relative few that try to understand the use of such systems in social, economic and cultural contexts (J. Donner & Tellez, 2008).

This report focuses on the impacts of the cell-phone banking system on the lives of the lower income population of South Africa, both positive and negative.

1.2 Context of the study

1.2.1 *The South African historical overview*

The new democratic government of South Africa came into power in 1994 and inherited a financial services sector that only serviced a minority of the population, with approximately 40% of adults having access to formal financial services. A combination of government policy and pressure and the commitment of the financial services sector through the financial sector charter contributed to increased access by the masses within South Africa (Kirsten, 2006).

The financial services charter led to the creation of the entry-level Mzansi Account, which was available from any of the four large banks (Standard Bank, ABSA, FNB and Nedbank) as well as from the state-owned Post Bank. This account catered specifically to the low income bracket. As per the report commissioned by the Fin Trust in 2009 (Porteous, 2009), this initiative resulted in more than six million new accounts being opened, with 91% of those being first time banked clients. In 2008 45% of these accounts were still active. The dormant percentage is similar to the nearest equivalent bank accounts offered by these banks, but the four commercial banks stated losses on these accounts (Porteous, 2009).

1.2.2 *The current South African landscape*

Cell phone banking was introduced in South Africa in 2000 and was identified as a means to improve access to financial services (Dickman, McGimpsey, Nuechterlein, Osborne, & Ward, 2006). According to the GSMA's Sub-Saharan African report (2015) , South Africa has the largest mobile market in the region with 38 million unique subscribers as at June 2015. Additive cell phone banking allows the user to use their cell phone as another device to perform similar banking functions to the Internet or ATM (Automatic Teller Machine) but does not do much to increase the banked population (Porteous, 2007). Transformational cell phone banking, such as MTN Banking and WIZZIT, allowed users to open and transact between accounts by using the device (Porteous, 2007).

The 2014 FinScope South Africa Consumer Survey results indicated an increase in the number of financially included adults from 17.7 million in 2004 to 31.4 million in 2014. The banked numbers went from 46% in 2004 to 75% in 2014. Organic banking growth and the SASSA (the South African Social Security Agency, which is responsible for paying out social grants) roll out are the biggest drivers for the overall increase in financial inclusion, however the bank account product usage remained static at 75% for 2013 and 2014 (FinScope, 2014).

The low income population of South Africa is defined in this report as people falling within the LSMs (living standard measures) of 1 to 4, with 1 being the lowest and 10 being the highest. As per the South African Audience Research Foundation, this group made up 22% of South Africa's adult population in 2014 (SAARF, 2014).

Table 1: SAARF table depicting breakdown of LSM groups

Period	2010RA	2010RB	2011RA	2011RB	2012RA	2012RB	2013RA	2013RB	2014RA	2014RB
Weighted Total	33 843 216	34 019 659	34 019 670	34 933 808	34 934 238	34 935 454	37 214 317	37 214 317	37 664 536	37 664 537
LSM 1	3%	2%	2%	2%	2%	2%	1%	1%	2%	2%
LSM 2	7%	6%	6%	5%	4%	4%	4%	4%	4%	3%
LSM 3	8%	7%	7%	6%	6%	6%	6%	6%	6%	5%
LSM 4	14%	14%	13%	12%	13%	13%	12%	12%	12%	12%
LSM 5	17%	17%	17%	17%	17%	17%	17%	16%	16%	16%
LSM 6	19%	20%	21%	22%	23%	23%	24%	24%	23%	24%
LSM 7	10%	11%	11%	11%	12%	11%	12%	12%	13%	13%
LSM 8	8%	8%	8%	8%	8%	9%	9%	9%	9%	9%
LSM 9	9%	9%	9%	9%	9%	9%	10%	10%	10%	10%
LSM 10	6%	6%	6%	6%	6%	6%	6%	6%	7%	6%

As South Africa still has a high percentage of its population within the lower LSMs and is also the largest mobile user within the Sub-Saharan African region, this report seeks to understand the impact that cell-phone banking has on the low income population of South Africa.

1.3 Problem statement

The purpose of this report is to identify the advantages and disadvantages the low income population of South Africa derive from the adoption of mobile banking.

1.4 Significance of the study

The South African banks and mobile network operators seem to have good coverage in South Africa, and access to financial services and a financially active population is advantageous for a country. A move away from cash transactions and the transporting of cash also benefits a population and its government. Both banks and mobile network operators are under constant

pressure to increase profits and the government of South Africa has placed emphasis on the financial inclusion of the un-banked and improved financial activities of the under-banked since 1994.

This study fills a gap in that there is limited knowledge about the impact of cell phone banking on the low income population of South Africa. The study provides guidance to marketers within the banking sector regarding the possible shortfalls in using technology as an enabler to banking, as well as to policy makers regarding the inhibiting and protectionist policies that they implement. Business may also establish the deterrents to the adoption of cell phone banking that may be camouflaged by the aggregation of the numerous survey results that are currently available.

Banks and mobile network operators may use the results of this research to better align their offerings and policies to increase adoption of this service in a responsible manner. Government may also use this study to understand the efficacy of their policies to protect the user versus the inhibition of economic growth. Future academics and research students will also benefit from this study as it will contribute to the body of knowledge regarding this topic.

1.5 Delimitations of the study

This study specifically focuses on the low income population of South Africa and excludes others. It is further limited to personal, retail type banking and excludes commercial banking. From an enabling and technology perspective the study focuses solely on cell-phones and excludes other enablers such as computers (Internet) and ATMs (automatic teller machines). The study further excludes inquiries into channels targeted at top tier banking clients such as Internet-based applications supported by smartphones.

1.6 Definition of terms

- Cell phone banking, m-banking and mobile banking are used interchangeably and refer to the ability of a customer to use a cell phone to execute banking functions. In the context of this report these refer to additive and not transformational functionalities (Porteous, 2007).
- Adult in this context refers to any South African citizen above the age of 16 years, being the permitted age for one to hold a bank account in South Africa (Finscope, 2011).
- 'Mzansi' means South in Zulu, which is one of the eleven official languages in South Africa (Kirsten, 2006).
- Low income market refers to individuals falling into LSM 1 to 4, with 1 being the lowest and 10 being the highest (SAARF, 2014).
- Shebeen is a colloquial term referring to informal liquor outlets usually found in the low income areas in South Africa.
- SASSA refers to the South African social security agency that is responsible for the distribution of social grants from government to qualifying South African citizens.

1.7 Assumptions

The following assumptions were made regarding this study: the participants would be willing to share information with the interviewer and would be open and honest in their responses. Considering the low levels of sensitivity and intrusion, this was a safe assumption to make. Responses that were toned down or exaggerated may have interfered with the formulation of common or noteworthy themes.

CHAPTER 2. LITERATURE REVIEW

2.1 Introduction

This literature review seeks to uncover the positive and negative impact that mobile banking has on the lives of the low income population, both globally and in South Africa. This section provides a background for this study.

The review is broken up into three main parts. The first section assesses the financial inclusion of the poor dealing with the un-banked and under-banked, the second section deals with cell-phone banking in South Africa, and the third section deals with the impact that cell phone banking has on the lives of the poor.

2.2 Financial inclusion of the poor through cell-phone banking

The income of the poor is often small, irregular and heavily dependent on external factors such as climatic conditions. To overcome these challenges, the poor devise informal risk-management strategies such as saving cash in certain places within the household, and entering into savings and lottery clubs within their own communities (Dercon, Bold, & Calvo, 2006). Taking from this background, Demish et al. (2011) concluded that the role of finance in the lives of the poor should be to help them maintain a household and to assist with certain investments such as shelter and education in the face of occasional disruptive events.

Given the limited profitability per low income client, banks are not incentivised to make all their products available to the poor through their conventional channels. With the lack of conventional remittance and transfer capabilities, the poor resort to sending money routinely and in emergencies via risky informal networks of bus drivers and other people. With mobile banking these

transactions can be done with lower risk and instantly, thereby assisting in emergencies and averting financial ruin (Kendall & Voorhies, 2014).

Prahalad's (2008) theory on the value at the bottom of the pyramid advises firms of the value that can be attained from the low income, previously untapped mass markets of the world. Prahalad stated that the poor may not have as much individual wealth as the top tier, but their large numbers make up for their individual poverty. The author concluded that firms that seek sustainable future profits in new income streams will do well to think laterally and venture into these poor mass markets.

From a political standpoint, the democratic government of South Africa pushed for financial inclusion of the masses through policy. The financial services sector responded by instituting a financial sector charter in 2004, which clearly stated one of their main aims to be increased access to finance by the masses (Council, 2004).

South Africa's big four banks (ABSA, Standard Bank, First National Bank and Standard Bank) and the public Post Bank responded by making the Mzansi account available in October 2004 (Porteous, 2009). According to Porteous' report, six million new Mzansi accounts opened from 2004 to 2008 and in the same period the banked adult population in South Africa moved from 46% to 63%. However it cannot be assumed that the entire increase in banked numbers is solely due to the Mzansi account initiative. In the same report it was established that using different banks' financial models, all of the private banks were better off with their own nearest equivalent account than with the Mzansi accounts, other than the Post Bank. The Post Bank, being a public entity continued to push the Mzansi account due to their singular vision of banking the masses. Private Banks guarded against the cannibalisation of their own nearest equivalent accounts that generated better revenues than the Mzansi accounts.

According to Alexandre, Mas and Radcliffe (2011) conventional banking is not available to the poor across many countries with a high ratio of poor people, largely due to the banks' financial motivation to not make expensive infrastructure available within communities where the usage is low and of small value. The authors further stated that the poor in turn do not see the value in accessing these institutions, largely due to the costs, inconvenience and conditions imposed such as high minimum balances. The article further suggested that banking models should be changed to increase access to the poor and elaborated on the entry of mobile network operators into the financial services sector.

Branchless banking is an unconventional approach where the banks or non-bank service providers do not have to set up expensive branches or ATMs to offer financial services to customers. This takes the form of two models - bank led and non-bank led models. Both of these models use information and communication technologies such as cell phones to replicate the facilities available within conventional bank branches (Lyman, Ivatury, & Staschen, 2006).

The large banks in South Africa (Standard Bank, ABSA, FNB, and Nedbank) offer ATMs, Internet banking and cell phone banking, all of which belong to the branchless banking sector of offerings. These channels are made available to all existing, banked clients. Cell-phone banking in this context is considered to take on the role of additive rather than transformational technology, in that the technology helps users to transact more rather than attract people that never transacted previously. The banks' vision is to increase the transactions of the under-banked by offering as many channels as possible to be used at the customer's convenience and at any time (Dickman, et al., 2006).

However cell phones can also be used in a more transformative model, creating a new channel and attracting low income customers (Porteous, 2007). Examples are the cases of WIZZIT and MTN Banking in South Africa, where all of the transactions can be executed using a cell phone and accounts are

opened by agents in the field, thereby creating a truly branchless experience for the user. There is no need for a conventional bank account and users are converted from un-banked to banked clients as they now transact using the mobile network operator's platform and virtual money rather than cash and bank branches (Porteous, 2007).

2.2.1 *Models and theories regarding the adoption of cell-phone banking*

Brown et al. (2003) investigated the predictors of the adoption of cell phone banking in South Africa by using Tan and Teo's (2000) theory framework in their study on Internet adoption in banking. Brown et al. (2003) established that due to the high penetration of cell phones versus other communication devices and technologies, cell phones presented the best platform to promote greater access to banking. They further established that the usage of cell phones for banking was slow, with fewer than 6% of their respondents having ever used a cell phone for banking. According to the authors, the factors that could improve the adoption of cell phone banking are perceived relative advantage; the ability to experiment first (trialability); and the diversity of banking needs that suit the user. The inhibiting factor is the perceived sense of risk associated with cell phone banking.

Lule, Omswansa and Waema (2012) adapted the TAM (technology acceptance model) to understand the adoption of m-banking services in Kenya. The technology acceptance model was originally designed to predict users' acceptance of information technology and usage in an organisational context. The original model looked at perceived usefulness and perceived ease-of-use as primary drivers of adoption of technology (Davis Jr, 1986). Lule, Omswansa and Waema (2012) added four variables to the original model, being self-efficacy; perceived credibility; subjective norms and transactional costs, which they felt allowed the model to be applied to the adoption of m-banking in Kenya. The authors concluded that they arrived at a generic model that can be used to determine adoption and the attitude towards adoption of m-banking services in any developing country. Their proposed model is depicted in figure 1 below.

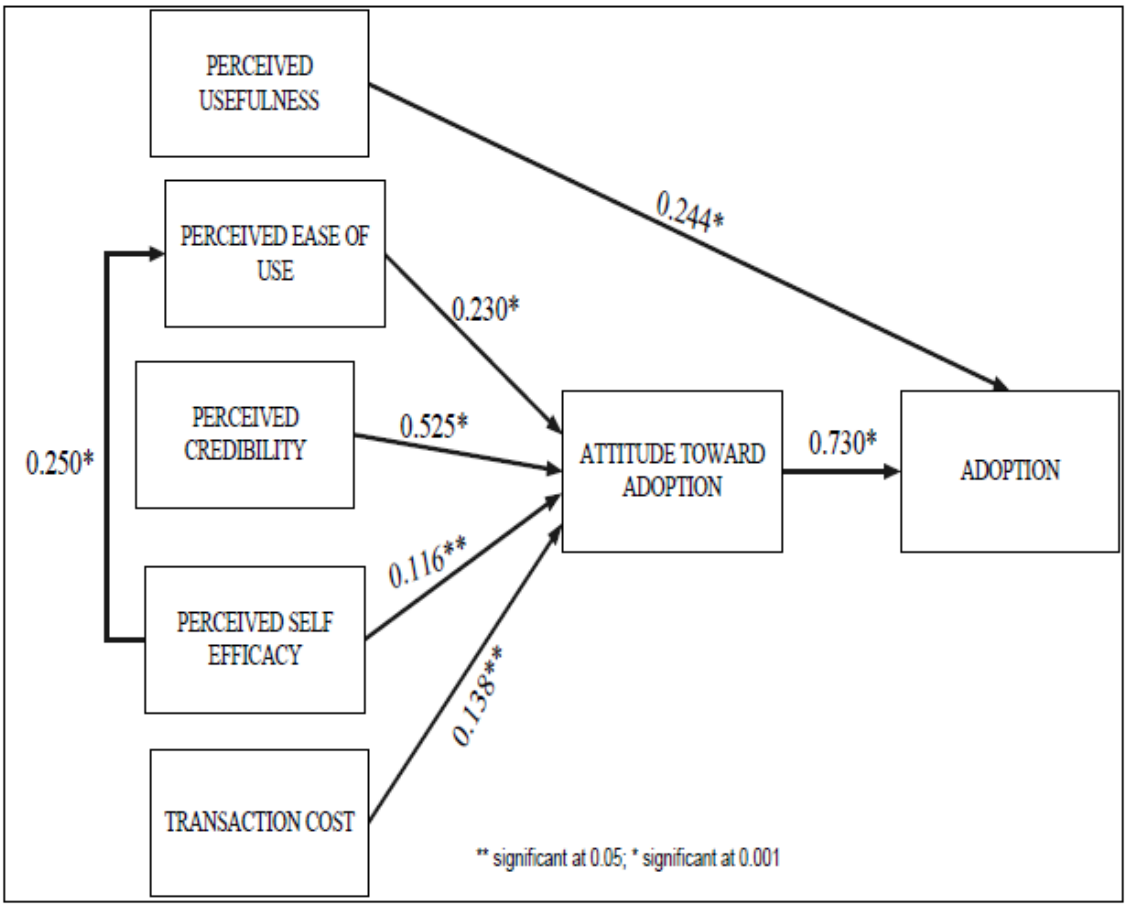


Figure 1: Proposed prediction of adoption model

Source: (Lule, et al., 2012)

The other more pronounced theory used to understand the adoption rate of mobile banking is the diffusion of innovation theory. This theory was formulated in the book, *Diffusion of Innovations,* (Rogers, 2003) and aims to explain how, why and at what rate new ideas and technology spread through cultures. This theory was used by Al-Jabri and Sohail (2012) in their attempt to understand the adoption of m-banking in Saudi Arabia. The five attributes from the original theory that they used were relative advantage; complexity; compatibility; trialability; and observability. The authors however concluded that additional constructs such as social influences and facilitating conditions such as self-efficacy and technical support should be added to the diffusion of innovation model to better understand the adoption of mobile banking. Their original model used for the research is depicted in figure 2 below.

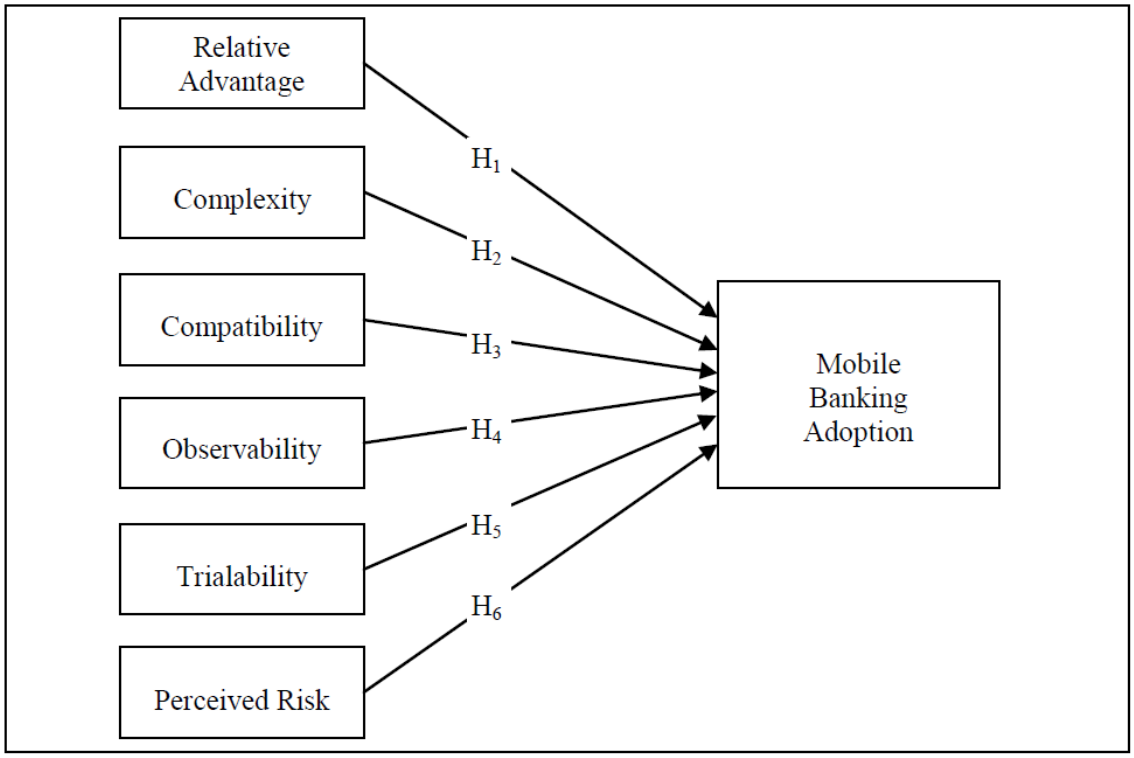


Figure 2: Research model using the diffusion of innovation theory to understand the adoption of m-banking in Saudi Arabia

Source: (Al-Jabri & Sohail, 2012)

Overcoming the problem of access to financial services and the adoption of technology is only part of the story. Considerable research (Dermish, et al., 2011; Dias & McKee, 2010; Ivatury & Mas, 2008) has explored the opportunities, risks and potential for economic growth regarding branchless banking and available technology, however the available literature is weighted towards aggregated responses and generalisations from a number of developing countries.

Sandvig and Sawhney (2006) found that the existing theories of technology use and adoption are robust enough to handle the introduction of mobile banking as a technology. They added that there seems to be no need to formulate new theories or models around the adoption of this technology.

2.2.2 *Cell phones and branchless banking*

Formal access to financial services is largely hindered by a lack of customer interface infrastructure and a lack of relevant knowledge; financial service providers are failing to meet the needs of the poor, especially the poor in rural areas (J. Donner & Tellez, 2008). Branchless banking refers to the ability of the consumer to use non-bank outlets as touch-points for cash in or out, consumers using cell phone technology or payment cards to transact electronically, transactions being processed against an electronic store of value, and accounts being issued by an institution recognised by the banking regulator. This method of banking may involve three types of outsourcing of typical bank activities to non-bank institutions such as retailers, agents and mobile network operators (Mas, 2009). Alexandre et al. (2011) preferred the term 'banking beyond branches', due to the fact that bank branches still play a critical role in providing these services in their respective areas, with the retailers handling the contact with the client but the branches remaining responsible for cash distribution.

Automatic teller machines and the Internet have the effect of branchless banking but do not go as far as cell phone usage to attract low income clients. This is largely due to the high adoption rate of cell phones by the low income segment (Porteous, 2007). Mobile banking is a subset of branchless banking whereby banks can use cell phone technology to afford clients access to services and where new entrants such as mobile network operators can offer transactional services to their network users (Mas, 2009).

McKay and Pickens (2010) established that on average, branchless banking is 19% cheaper for the consumer but there are anomalies in certain environments where the average is a poor factor to use. The authors found that in certain instances saving is cheaper using a conventional bank account, whereas transactional banking is cheaper across most of the mobile branchless models. The authors went further to investigate the causes for the disparity not being greater and found that the three main reasons were that there is a growing trend for major banks to design products that actively target the low income

segment using their current infrastructure – these accounts were also used in their comparison tests; there are increasing marketing and agent commission costs in branchless banking; and lastly there may also be price reserves to allow organisations to compete on price as new competitors enter this domain. Figure 3 illustrates the key components of a branchless banking system and the trade-offs that are associated with this model.

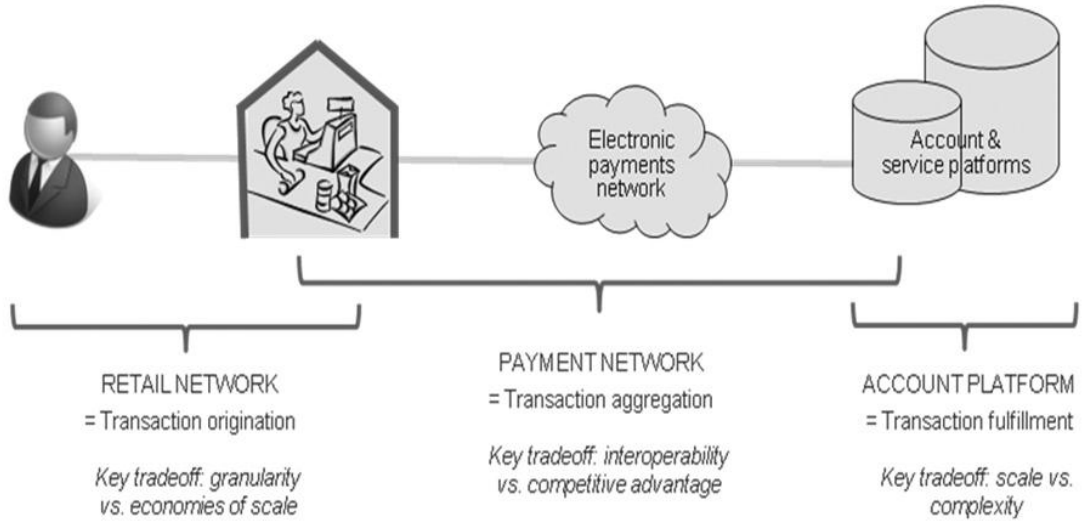


Figure 3: Key components of a branchless banking system

Source: (Mas, 2009)

2.2.3 *Value in mobile money*

Mobile money is a term used to define the value in the non-banking cell-phone banking models, whereas in the bank-led models cell-phone banking is merely another means to access the existing bank account and funds therein (Donovan, 2012).

The GSMA (Groupe Special Mobile Association) defines mobile money as a broad term whereby financial services are accessed by using a mobile phone. The term does not assume any deployment model, i.e. it could be a bank or non-bank led model. It also does not differentiate between the types of financial service that is accessed, i.e. it could be an enquiry, remittance or transactional

payment etc. A subsection of mobile money is mobile banking, which is different from mobile payments in that the regulated entity is a bank providing traditional banking services merely using the mobile element as an access channel (Solin & Zerzan, 2010).

Donovan (2012) agreed with the broad definition that mobile money relates to providing financial services, but went further to describe the three most identifiable services: payments such as peer-to-peer transfers, finance such as insurance products, and banking such as account balance enquiries. Donovan added that there is still cash in and cash out in these transactions, which must be handled by a bank, retailer or agent.

In his GSMA study, Leishman (2010) established that there is real value in mobile money for service providers as well. The author used statistics regarding the growth of MNO (mobile network operator) driven mobile banking in several countries and more specifically delved into MTN Uganda's mobile money. It was established that MTN Uganda's mobile money became cash-flow positive 14 months after launch and by injecting less than US$4 million in this venture. However, this positive cash flow is attributed to direct and indirect benefits such as savings from airtime distribution, increased retention of clients and increased share of client's wallet for voice and SMS (short messaging service). Considering the fact that this was an in-depth analysis of a particular MNO's initiative, mobile banking and mobile money sounds attractive to the prospective new entrant or investor. The author warned, however, that the political, regulatory and technology adoption context, along with the company's business model and incentive schemes, are also determinants of success or failure. The growth of current providers and the high number of new entrants internationally also bear testimony to the perceived value in mobile money.

Research conducted in 2002 found that people were using airtime as a proxy for cash by sending airtime to friends and family who were then re-selling the airtime for cash. This led to Vodafone investigating the possibility of mobile

money in developing nations and led largely to the birth of M-Pesa in Kenya (TechCentral, 2014b).

Traditional banks also get value from the non-bank led models in that the agents exchanging cash for mobile money bank the cash at traditional banks. Most of the MNOs hold bank accounts with traditional banks in their area of operation and earn further interest from their cash deposits (Lyman, et al., 2006).

2.2.4 *Impact of mobile technology on society*

Mobile phones have allowed society to interact in ways never before envisaged, with no restrictions on geographical location. Instant messaging allows people to remain continuously in contact and the mobile phone has also become a safety measure, giving the user a sense of security. The added features of photographs and Internet abilities has resulted in the cell-phone being compared to the Swiss army knife in terms of versatility and utility in your pocket (Goggin, 2012).

The purchase of network airtime, which enables a user to use their cell-phone for voice calls, SMSes (short messaging system) and any other function, is ranked as one of the leading uses of cell-phone banking. This convenient purchase of airtime allows people to remain in contact. The 2009 World Wide Worx report found that 61% of the usage of cell-phone banking was owed to the purchase of airtime (Goldstuck, 2009)

2.3 Cell-phone banking in South Africa

South Africa is a pioneer in using mobile technology to attract low income clients, but the success of these initiatives was initially slow from a transformational perspective (Dickman, et al., 2006). South Africa has the highest cell-phone penetration in the Sub-Saharan African region, with a recorded 38 million unique subscribers in 2015 (GSMA, 2015).

In South Africa, only companies that are registered as financial service providers (Financial Advisory and Intermediary Act 2002) may offer financial services and advice. This regulation has closed off mobile banking to the mobile network operators and others by creating a policy barrier to entry. This has led to partnerships between mobile network operators and banks to provide financial services such as MTN Banking. The positive spin-off is that the newly formed provider has the skill and motivation to offer a wide range of financial products to the un-banked user (J. Donner & Tellez, 2008). All of the large banks in South Africa have incorporated cell phone banking as part of their offering to existing clients, with the aim of increasing the rate of transactions and number of products sold to under-banked clients. The banks have further launched transformative type cell phone banking initiatives to attract low income clients, while partnerships with information technology and communications companies have resulted in technology whereby the cell phone is being tested as a point of sale device (SouthAfrica.info, 2012).

2.3.1 *Bank-led and non-bank led models*

The following basic transactions are included in bank-led cell-phone banking in South Africa: account balance enquiries; account transaction history; transfers between accounts; payments for beneficiaries already set up on a customer profile and prepaid purchases e.g. cell phone airtime recharge vouchers. Customers can register for these services at a bank branch, ATM (automatic teller machine) and via a call centre at all the major banks in South Africa (Matthew, 2014). The banks then offer further financial products through this channel as they would through their other channels.

As per The Mobile Consumer in SA report of 2014, the number of banked users of mobile applications moved from 1% in mid-2012 to 9% in late 2013, while cell-phone banking moved from 28% in mid-2012 to 37% in late 2013 (Goldstuck, 2014). This shows that the South African bank's push to move users to other branchless media such as mobile banking is gaining traction but still has a long way to go.

The non-bank led model of cell-phone banking is relatively slow paced in South Africa compared to other African countries such as Kenya (Goldstuck, 2012). The factors largely working against a high demand of non-bank led or stand-alone models in South Africa are briefly depicted in table 2 below, followed by a discussion of each of the most common reasons identified.

Table 2: Brief description of the four main factors limiting mass adoption of 'standalone' mobile banking models in South Africa

Reason	Description	Reference
Regulatory barrier	Only registered financial service providers can provide financial services and advice.	(Financial Advisory and Intermediary Act 2002)
High banked population	75% of adult population currently banked - 2014	(FinScope, 2014)
High usage rate – limited novelty effect	For most common usage, rural areas trump urban areas	(Goldstuck, 2012)
Limited offerings	Full array of financial services e.g. credit, savings, insurance etc. not offered	(McKay & Pickens, 2010)

South African legislation requires that only financial service providers registered with the FSB (Financial Services Board) and who abide by the Financial Services and Intermediary Act of 2002 can offer financial services and advice in South Africa (Financial Advisory and Intermediary Act 2002). This has led to joint ventures between mobile network operators and banks, as discussed previously.

South Africa currently has a high banked population in comparison to other developing countries, with 75% as at end 2014 (FinScope, 2014). This has largely been accomplished through organic growth by the banks and the SASSA (the South African Social Security Agency, which is responsible for paying out social grants) roll out, which pays social grants into existing bank accounts or to be redeemed at certain retailers. This results in a high bank penetration amongst the poor who are dependent on social grants for basic necessities (FinScope, 2014).

As per Goldstuck (2012) in the Mobile Consumer in SA 2012 Report, rural residents use cell-phone banking even more than urban users, mostly for items such as purchase of airtime; transfer of airtime; purchase of electricity and sending money. This shows a reduction in the normal target market for non-bank led mobile banking models.

The limited offerings are a deterrent to providing true value to the poor via mobile technology. Mckay and Pickens (2010) found that non-bank led models may be lacking in their movement to satisfy the poor's demand for additional financial services. The most compelling reason for this is the fact that the MNOs lack the skills in finance beyond transactional banking and the lack of motivation to do more, because they may find that transactional banking satisfies their needs of increased customer loyalty and reduced distribution of airtime costs.

Vodacom re-launched the M-Pesa initiative in South Africa in 2014 by partnering with Bidvest Bank and VISA and breaking ties with Nedbank, however their target of 10 million clients in five years seems out of reach considering that only 72, 000 clients signed up in year one (TechCentral, 2015).

Their closest competitor, MTN, partnered with Tyme, which is a part of the Bank of Athens and has a license to operate in South Africa as a financial services institution, to offer clients mobile money, or as they put it a "bank without a bank". They also partnered with the retailer, Pick n Pay, to use their cashiers as bank tellers to offer their registered users a free banking service of remittance

and transfers where payments can be made at the Pick n Pay stores using codes and a transfer of virtual money by means of their cell-phones, with many additional benefits such as additional airtime and reward points from the retailer (TechCentral, 2014a). Wizzit is another company that provides remittance capabilities via a cell-phone across all networks. Through its partnership with various banks it has six million customers in nine countries. Wizzit is largely a remittance facilitating company that was launched in South Africa in 2004 (Richardson, 2014).

2.3.2 *The platform*

In South Africa the major banks all use cell phone banking as one of the digital delivery channels. Wizzit and MTN Banking use cell phone banking as a standalone non-bank model offering. This means that the user need not have a conventional bank account to use this form of mobile banking services. Cell phone banking in South Africa is delivered using one of three platforms: Wireless Application Protocol (WAP); Wireless Internet Gateway (WIG); and Unstructured Supplementary Service Data (USSD) (Dagada, 2009).

i. Wireless Application Protocol (WAP)

All of the major banks use WAP technology to deliver cell phone banking to their clients. This technology allows a user to access Internet banking using their cell phone device, however this requires an advanced cell phone and the client needs to understand how to use the Internet. This thus excludes clients with basic cell phones and no prior knowledge of using the Internet, which is the majority of South Africa's population. The technology offers an easy to use and safe interface with all the functionality that is available on Internet banking (Dagada, 2009).

ii. Wireless Internet Gateway (WIG)

This is the oldest technology which enables the delivery of cell phone banking to bank's clients; it is very secure and transactions are also encrypted. WIG downloads the bank menu onto the user's SIM card to enable transactions to

take place, and the user transacts by sending SMSes. WIG is accessible technology as it does not require a sophisticated cell phone. It is also easier to use by clients who are not required to have Internet usage knowledge (Dagada, 2009).

iii. Unstructured Supplementary Service Data (USSD)

ABSA, Nedbank and FNB adopted USSD technology to enable mobile commerce, with the emphasis placed on sales of content service such as ringtones, wallpapers, music etc. FNB and ABSA extended the usage of USSD to deliver cell phone banking to clients. This technology is embedded in all handsets, regardless of make, year and model. This makes it far reaching but there is a lower security rating than WAP and WIG. This platform allows users to have quick access to balances, statements and to purchase airtime (Dagada, 2009).

According to Goldstuck (2009), the most popular cell-phone banking technology is SMSes, followed by USSD and WAP respectively.

2.4 Impact of mobile banking on the lives of the poor

Singh (2009) stated that there are three immediate benefits of cell-phone banking to the poor. Firstly there is incremental benefit, which is where people access faster and cheaper communication that substitutes costly and often risky travel. A good example of this is where fishermen in India call their markets to gauge demand prior to traveling with the fish to sell. Secondly, there is transformational benefit. This is where something new is offered such as the ability to pay accounts or transfer money using cell-phone banking. Thirdly, there are production benefits. This is where new avenues of revenue generation are created, e.g. through new jobs created in the telecommunications sector and by the re-selling of airtime.

The security risks associated with mobile money are similar to those associated with conventional banking, however the security risks should rather be compared to non-formal financial services such as cash savings under the mattress, as this is the base that the poor are transforming from (Solin & Zerzan, 2010). The remittance capabilities, transfer of funds to traditionally low income areas and the ability to purchase airtime electronically are the first draw cards to mobile banking for the poor (Dickman, et al., 2006).

Street and common robberies mainly target cash, although they do take other valuables such as cell-phones and jewellery. These crimes are prevalent in townships, CBDs (central business districts) and their peripheral areas. The largest victim base is characterised by people using public transport. Although these offences are less violent and traumatic, the impact on the victim can be severe and life disrupting. These offences are usually perpetrated when weekly and monthly wages are paid (De Kock, Kriegler, & Shaw, 2015). Mobile money negates the dependency on cash, which is especially advantageous to the poor who are exposed to these crime patterns, and is usually the first draw card in the adoption of mobile banking (Dickman, et al., 2006).

In the global context, a 2014 World Bank report revealed that there is continued growth in the remittance of funds into the developing nations and reported an expected figure of $436 billion in 2014. This is a 7.8% increase from 2013. The value in these remittances is larger than foreign direct investment and/or gross domestic product in some developing countries. In the Sub-Saharan African region there is slow growth envisaged, with a forecast of $41 billion in 2016, however the costs to remit to developing countries remain high and are challenging for many in the diaspora who are trying to maintain or assist families in their homelands. The cost to remit to Sub-Saharan Africa remains the highest of all developing regions at 12% of the transaction value (WorldBank, 2014).

In order for the poor to truly find value in mobile money, the financial services offered must extend to savings, assurance, investments, credit, insurance etc. (Pande, Cole, Sivasankaran, Bastian, & Durlacher, 2012).

In a focus group study, Donner (2007) established that people would readily transfer money to a family member as a gift, but they would not do so for an acquaintance as this is seen as a loan. The actions are exactly the same but are socially very different. In the same study it was also established that there was a participant who used mobile banking to start an informal money lending business.

By adopting mobile banking, people will experience reduced costs in the form of lower fees and less risky alternatives. They will experience these cost reductions even if they continue to transact with the same people and at the same rate as they did prior to the adoption of mobile banking. (J. Donner & Tellez, 2008). The active use of mobile banking may also have indirect impacts, such as giving women greater power over family funds; increasing family savings; increasing incomes; and improving resilience to financial shocks and sudden events. It could also lead to workers staying away from home for longer periods due to easier remittance capabilities (Von Reijswoud, 2007).

Kendall and Voorhies (2014) found that mobile finance offers at least three distinct benefits to the poor as opposed to traditional banking services. Firstly, the movement of mobile money is essentially free as there are no real costs incurred by the banks as opposed to the high costs of in-branch banking. Secondly, the banks can use the enormous amount of data that can be collected through this channel to design more appropriate service offerings to these clients, as well as to use this data as a possible alternative to conventional credit rating scores. Thirdly, due to the fact that banks and clients are linked in real time, banks can use this opportunity to instantly push account information to clients, to send reminders and to sign clients up for other services.

2.5 Conclusion of the Literature Review

South Africa has been pushing for financial inclusion of the poor via policy since the new dispensation took power in 1994, and the banks in South Africa have responded to the challenge (Kirsten, 2006). Largely thanks to the organic growth of banks and the rollout of SASSA, South Africa managed to increase its banked population from 46% in 2004 to 75% in 2014 (FinScope, 2014). South Africa has the highest cell-phone penetration rate in the Sub-Saharan African region, with 38 million unique subscribers in 2015 (GSMA, 2015). South Africa has also been a pioneer in offering cell-phone banking to its citizens since 2000 (Dickman, et al., 2006).

Financial inclusion of the poor is a reality in South Africa, but 25% of the adult population still do not have a bank account. This presents an opportunity for banks to continuously push for more inclusion and for others to use mobile technology to drive inclusion.

Mobile network operators like Vodacom and MTN, as well as independent payments systems company, Wizzit, through their partnerships with banks registered in South Africa, are offering non-bank led models to push mobile banking and are specifically targeting the low income population of South Africa (TechCentral, 2014b).

All of the large banks in South Africa (Standard Bank, ABSA, FNB, Nedbank and Capitec) offer cell-phone banking as an additional form of branchless banking to all of their banked customers across all networks with standardised menu options (Matthew, 2014). The bank-led model, where people have conventional bank accounts and simply use cell-phone banking as an additive, is more popular in South Africa than the non-bank led model. The non-bank led model also lags in uptake compared to countries like Kenya (TechCentral, 2014b). The main reasons for this lack of adoption of non-bank led models include legislative restrictions (Financial Advisory and Intermediary Act 2002); a high banked population (FinScope, 2014); a high rate of usage (Goldstuck, 2012) and the limitation of services offered (McKay & Pickens, 2010).

As per the Mobile Consumer in SA 2014 report, the users of mobile applications moved from 1% to 9% and cell-phone banking users moved from 28% to 37% from mid-2012 to late 2013 (Goldstuck, 2014). Although the upward trend is good, the gap is large and an improvement in both these forms of branchless banking media is possible. The technology adoption model states that perception of benefit and ease-of-use are key drivers in the adoption of technology (Davis Jr, 1986). With this in mind and the fact that mobile applications are dependent on smartphone technology, the cell-phone banking user percentage should be considered the metric to chase.

Banks also benefit from all mobile money transactions, as they derive lower cost benefits when servicing their own clients through this channel; previously the branch concept was so expensive that it made servicing the poor unaffordable. Even when it involves mobile money of other operators, the banks still benefit in that there are usually cash in and cash out components to the system and retailers and agents that sometimes handle cash in and cash out also hold their funds in conventional bank accounts.

Using cell-phone technology to include the poor and to increase financial transactions presents a win-win-win scenario, in that the customer wins by gaining convenient access; the bank wins by increasing profits due to lower costs and increased banked amounts, and the government wins by securing improved economic growth and possible improved taxation (J. Donner & Tellez, 2008).

The literature review is biased to the positive effects of mobile banking for both the user and the service provider. The negative effects are limited to perceptions of security risks as established in Brown's paper on the prediction of adoption of cell-phone banking (Brown, et al., 2003). The positive impact for individuals and micro-businesses ranges from lower costs and higher earnings, to reduced security risks and increased family savings. The other effects can be either positive or negative as they are mostly in the social context, such as increased time away from home by money earners due to easier remittance capabilities; changes in home dynamics with women having more autonomy

over finances; and informal lending of money and the granting of gifts and loans to family and acquaintances (J. Donner & Tellez, 2008).

As discussed in chapter 1, the study will provide guidance to marketers within the banking and non-banking sectors regarding the possible shortfalls in using cell-phone technology as an enabler to banking, as well as to policy makers regarding the inhibiting and protectionist policies that they implement. Based on the literature review some forms of impact on the low income population have been identified, however a deeper understanding of the impact of cell-phone banking is required and therefore the following research question is proposed.

Research question

What are the positive and negative impacts of cell-phone banking on the low income population of South Africa?

CHAPTER 3. RESEARCH METHODOLOGY

3.1 Introduction

This chapter outlines the research design and methodology that was used to conduct this research. The study adopted a qualitative method of inquiry, thus the literature around qualitative research is first discussed, followed by a review of the research design and the instrument that was used. Issues of data collection and analysis are also discussed, along with the validity and reliability of this study.

3.2 Research design and methodology

This study used a qualitative methodology in order to extract appropriate data to comprehensively answer the research question. According to Myers (2008), qualitative research is designed to allow researchers insight into what people say and do within the cultural, social and political context they exist. Due to some cultural, social and political aspects of the research, qualitative research methods of gathering data were most suitable (Myers, 2008).

Gelo, Braakmann and Benetka (2008) stated that a research design is the plan of actions or structure that links the philosophical foundations and the methodological assumptions of a research approach to its research methods. This is done to provide credible, accountable and legitimate answers to the research problem and research questions.

The phenomenological research design was used to collect the qualitative data in order to provide an understanding of the respondents' perceptions, perspectives and understanding of the impact of mobile banking on their lives. This design refers to a participant's perception of the meaning of an event; it attempts to understand people's perceptions, perspectives and understandings of a particular situation. The purpose of a phenomenological study is to

understand an experience from the participant's point of view and focuses on a phenomenon as it is typically lived and perceived by relevant human beings (Leedy & Ormrod, 2010).

By looking at multiple perspectives, on the same situation the researcher can make some generalisation on the topic being researched. The qualitative method is strong in situations where it is unclear what exactly is being inquired, therefore the researcher has to determine what is vital and what is insignificant data (Mukeredzi, 2012). Kotler and Keller (2006) asserted that the qualitative method is advantageous in the following ways:

- It provides valuable information to answer certain research questions.
- It gives valuable insights which might be missed by quantitative methods.

These advantages justify the use of the qualitative methodology in this study. Some challenges associated with this method will be addressed during the discussion on quantitative research methodology. This methodology gave the researcher a high degree of liberty and a greater fluidity and flexibility when collecting data. Researchers generally undertake qualitative methods if they wish to go beyond mere descriptions at a generalisable level of their empirical investigations (Neergaard & Ulhoi, 2007).

Lincoln and Denzin (1994) defined qualitative research as a multi method in focus, involving an interpretative, naturalistic approach to its subject matter. This means that researchers study in their natural settings, attempting to make sense of or interpret phenomena in terms of the meanings people bring to their living experiences. Qualitative research involves the collection of a variety of empirical materials, such as case studies; personal experience; introspection; life stories; interviews; observations; histories; and interactional and visual texts that describe routine and problematic moments and meaning in individuals' lives.

This method involves the use of unstructured exploratory techniques such as group discussions and in-depth interviews that are based on statistically small samples in order to understand a problem deeply (Bhattacharya, 2009). A qualitative approach to research is concerned with the subjective assessment of attitudes, opinions and behaviours. Research in such a situation is a function of the researcher's insights and impressions. Such an approach to research generates results either in a non-quantitative form or in a form which is not subjected to rigorous quantitative analysis (Kothari, 2004).

3.2.1 *Strengths of a qualitative research methodology*

The strengths are as follows:

- The data are based on the subject's own categories of meaning.
- It is useful to describe complex phenomena.
- It can conduct cross-case comparisons and analysis.
- It studies a limited number of cases in depth for clear understanding.
- It provides individual case information.
- It provides an understanding and description of people's personal experiences of phenomena.
- It can describe phenomena in rich detail as they are situated and embedded in local contexts.
- The researcher observes the contextual and setting factors as they relate to the statement of the problem.
- The researcher can follow-up dynamic processes by documenting sequential patterns and changes.
- It can determine idiographic causation (i.e. determining causes of a particular event).
- The researcher can use the grounded theory to inductively generate a tentative but explanatory theory about a phenomena.
- It can determine how participants interpret constructs.
- It is responsive to local situations.

3.2.2 *Weaknesses of qualitative methodology*

These are as follows:

- Knowledge produced may not be generalised to other people or other settings. The findings may be unique to relatively few people included in the research.
- It is difficult to quantify.
- It is difficult to test hypotheses and theories.
- It takes more time to collect data than it takes in the quantitative method.
- Data analysis is time consuming.
- The results are more likely to be influenced by personal biases and idiosyncrasies.
- It has lower credibility with some administrators and commissioners of research programmes (Onwuegbuzie & Johnson, 2006).

3.3 Survey method

A face-to-face interview approach was used in this study and the same questions were posed to all of the interviewees. These were open-ended questions, thus preventing a yes/no response and allowing for depth of understanding. Where necessary the researcher probed for additional detail to fully understand the interviewees' responses.

An in-depth analysis of the impact of mobile banking on the respondents' lives was conducted which comprised of 12 face-to-face interviews. Semi-structured interviews were conducted to obtain first-hand information about the positive and negative impact of mobile banking on the lives of the respondents.

3.4 Population and sample

3.4.1 *Population*

The population was made up of South Africans with low incomes from LSM 4 and below, who use cell-phone banking as an additive function to access their existing, conventional bank accounts.

3.4.2 *Unit of analysis*

Bhattacharyya (2009) stated that a unit of analysis refers to the entity from which data are collected, typically a person or a household. In this study, the unit of analysis was a low income person in South Africa.

3.4.3 *Sample and sampling method*

i. Non-probability sampling methods

These are sampling methods which are not associated with probabilistic or a random selection of samples. They are, however, used quite frequently in surveys and are based on practical considerations.

ii. Advantages of non-probability samples

The strongest points behind the use of non-probability samples is that they are less complicated and more economical in terms of time, space and financial expenses than probability samples. Generally they are more flexible, less costly, and judgmentally representative. These samples may be preferred when small numbers of elements are chosen.

iii. Disadvantages of non-probability samples

There are few chances of eliminating bias from the sample, and moreover there is no way that the magnitude of errors can be quantified. In fact there is a

greater risk of bias, the sampling may not be possible to generalise to the target population, subjectivity can make it difficult to measure changes in indicators over time, and there is no way to assess precision or reliability of data, however it can still be useful if the potential bias is controlled through proper research ethics.

Non-probability sampling involves the following:

- Convenience sampling: this works according to the convenience of the interviewer. This is generally the cheapest sampling method, however it suffers biases from several factors which are difficult to quantify in terms of possible errors. In this study the researcher opted to attract respondents through the companies that he had access to by requesting management within those companies to make the respondents available for interviews.
- Purposive sampling: this targets certain variables of the population, for example only males. In this case, it targeted low income people in South Africa. It samples those respondents who serve a certain purpose towards the research in progress.
- Judgment sampling: this is derived from judgments made by experts and is useful when studying rare phenomena.
- Quota sampling: this tries to make the sample representative of the population in some way, thus reducing bias. This can be done by setting a number of variables, for example income, age, gender and business type.

In this study, purposive sampling and convenience sampling were used to select a sample of low income people to be interviewed. The researcher approached three companies that he had access to and gave management within those companies a brief on the criteria to be used to select the respondents. Management in those companies found respondents that fit the criteria of being a South African citizen with a South African bank account, who were using cell-phone banking and earned a monthly salary of below R6, 000.

Management within those three companies then invited 15 respondents who fit the criteria, and the researcher interviewed the first 12 that arrived for the designated interview. The researcher aimed to stop the interviews when the responses became similar, even before completing 12 sessions, however the researcher proceeded to interview all 12 respondents to ensure diversity in age, gender and type of employment. Russell and Gregory (2003) stated that a study should stop once saturation point is reached, i.e. when no new data that challenges or adds to the conceptual framework is being gathered. The number 12 was arbitrarily chosen and the researcher is confident that the 12 interviews were sufficient to identify common and noteworthy themes regarding the impact of cell-phone banking on the lives of the low income population of South Africa.

Table 3: Profile of respondents

Age Group	**20 - 29**	**30 - 39**	**40 – 49**	**>50**
	8	2	1	1
Race	**A**	**W**	**C**	**I**
	8	2	1	1
Gender	**Female**	**Male**		
	7	5		
Salary per month	**R2, 000 to R2, 999**	**R3, 000 to R3, 999**	**R4, 000 to R4, 999**	**R5, 000 to R5, 999**
	2	4	5	1

3.5 The research instrument

The research was conducted using a set of 10 open-ended questions and three qualifying questions, which were asked to each respondent. The first three questions were qualifying questions to test for fit, while the remaining 10 questions were the actual research questions that were designed to specifically probe for positive and negative impacts.

The question sheet was used in each interview and field notes were recorded on the sheet during the course of the interviews. Each sheet was then filed along with the signed consent form and reference to the recorded conversation of each interview. A copy of the consent form is included in Appendix A. The actual research instrument is included in Appendix B.

3.6 Data collection

Each respondent signed a consent form allowing the researcher to conduct the interview and acknowledging that the interview was voluntary and anonymous. The researcher never addressed any of the interviewees by their names which solidified the anonymity of the interviewee. It was further agreed in the consent form that the respondent was free to leave at any stage of the interview and that the respondent would furnish true and complete responses to the questions asked. The interviews were conducted during business hours at the common place of work for the interviewees and the researcher. The familiar surroundings and convenience of attendance made it less stressful for the interviewee and researcher. Tact and sincerity was used to build a rapport with the participants, which allowed for the interviews to be conducted in a friendly and professional manner.

Each interview started with an introduction regarding the purpose of the interview and research topic. This was followed by a short discussion regarding the need to have the conversation recorded. The three qualifying questions were used to introduce humour and comfort to the room. Participants were

informed that they could forego the designated questions if they felt that they needed to elaborate further and were informed that the interviews were to be conducted in an informal manner thus ensuring deeper learning. The researcher did, however, ensure that all the necessary questions were answered and the topics addressed (Jankowicz, 1995).

The data were collected in a series of in-depth interviews lasting 20 to 30 minutes each. Due to the nature of the sample and type of inquiry, in-depth interviews were best suited to extract meaningful information from the respondents (Kothari, 2008). Although there is no right or wrong method to be used in qualitative data gathering, the researcher is of the opinion that this form of data gathering was best suited to answer the research question and lends itself to more data analysis. The researcher is also a skilled interviewer and has several years of experience in face-to-face interviews in various settings. This allowed the interviewer the opportunity to probe further and to gain deeper understanding, whilst not leading the interviewee to a desired outcome but rather collecting the information as it was presented. The researcher remained unbiased and recognised that interview responses can be tainted by the mere presence of the interviewer (Leedy & Ormrod, 2010). All of these reasons made the semi-structured interview the most appropriate design for this study. The inherent disadvantage of this design is interviewer bias and interference (Willig & MyiLibrary, 2001, p. 24).

3.7 Data analysis and interpretation

The data were analysed following the system prescribed by Miles and Huberman (1994). The data were first condensed into meaningful themes, after which it were displayed in meaningful segments and lastly interpreted for conclusions about causal effects, patterns, regularities etc. (Miles & Huberman, 1994) Codes were used to cluster the segments related to common theme. According to Ryan and Bernard (2003), theme identification is vital in qualitative research. Themes are umbrella constructs identified by the researcher before, during and after data collection. Themes can be established from data reviews

and can be identified from key words, secondary data analysis and popular agendas (Ryan & Bernard, 2003).

The field notes, which summarised the actual responses and observations of body language, tone of voice and emotions were checked against the recorded conversation to test for accuracy and fullness. The notes were then transcribed onto a table using a sheet in Excel (Microsoft package). After each interview the researcher added the transcribed responses, notes and additional comments. This allowed the researcher to create a table that matched respondents to their answers, per question. This made it simpler to quickly gauge the common responses and to formulate more themes as the process continued, as well as more meaningful themes after the last interview was complete.

3.8 Limitations of the study

A sample size of 12 respondents is small and this sample was diverse across age, race, gender and place of birth, therefore the sample could not represent any group of persons. However the objective was not to make generalisations about the population, but rather to gain a deeper understanding of the subjective opinions of the respondents in order to understand the impact of cell-phone banking on their lives.

The study focuses on cell-phone banking only and does not deal with other forms of access to financial transactions such as Internet banking; ATMs; POS (Point of Sale) and bank branches. The study also only focuses on cell-phone banking as an additive feature related to existing conventional bank accounts and excludes standalone mobile banking models.

3.9 Validity and reliability

Issues of validity and reliability are very important as they guarantee the acceptability of the research and the results of the study by other users, whether from business or academia.

Validity is the extent to which the research findings accurately represent what is really happening in the situation. An effect or test is valid if it demonstrates or measures what the researcher thinks or claims it does (Coolican, 1992). Ideally a research is valid if some other form of measurement arrives at the same answer as the original research (Jankowicz, 1995).

This study addressed content validity by ensuring that the questionnaire covered all aspects of the research question and was not biased in any way. Whether the same results will be found using the same method and a different instrument is unknown, however the similarities found between the themes identified in this study and the factors of adoption as discussed in the literature review does speak of similar findings with different instruments.

There are various ways of dealing with the threats to validity, for example member checking; auditing; thick, rich descriptions; peer debriefing and collaboration. After writing the research report, the researcher may share the report with the participants. Lincoln and Guba (1985) referred to such sharing as member-checking. They indicated that such checking contributes to the trustworthiness and credibility of the report, however difficult issues can arise at this point. The researcher may give a right of review to a participant that can amount almost to a veto on how the interviewer worked with, analysed, and wrote up the results of the interviewing project. Although member-checking can inform a researcher's judgment, it cannot substitute for it (Lawrence-Lightfoot, 2008). That judgment depends on the researcher's experience, both in the past in general and in working with and internalising the interviewing material; it may be the most important ingredient the researcher brings to the study (Marshall, 1981).

3.9.1 *External validity*

External validity concerns itself with generalisability of the learning that can be extended to other populations (Neuendorf, 2002). Qualitative research is not meant to result in generalisable outcomes; it is difficult to achieve a high degree

of external validity with qualitative research as different contexts exist in different organisations (Yin, 1994). The results of this study may be replicated in other fields where technology meets the poor to test for impact, because the context of low income and new technology is similar and the new study should arrive at similar results.

3.9.2 *Internal validity*

Internal validity deals with uniform data collection throughout the collection process (Neuendorf, 2002), and refers to the extent to which the research design allows inferences about the causal relationships between data elements to be drawn. A number of strategies can be followed to ensure internal validity, such as triangulation. Triangulation is defined as the collection of multiple sources that will converge to support a particular hypothesis (Leedy & Ormrod, 2010).

Due to the nature of this study information was only needed from one set of respondents, being low income, South African, cell-phone banking users. The only other form of triangulation that could have benefitted the study would have been the use of other researchers to conduct the same study, however this was not practically possible at the time of the study.

Internal validity was confirmed in this study by the following features: the same questions were posed to all of the participants; the participants' responses were not influenced or led by the researcher; and the participants spoke freely and felt at ease whilst the researcher remained neutral and objective during the interview and the analysis processes. According to Yin (1994) the pattern matching logic of using the frequency of responses to arrive at themes also strengthens the internal validity.

3.9.3 *Reliability*

Reliability is defined as the “extent to which a measuring procedure yields the same results on repeated trials” (Neuendorf, 2002, p. 141). Reliability is concerned with the findings of the research and relates to the credibility of the findings.

To ensure reliability the researcher maintained consistency in all of his interactions with the respondents in terms of questions asked and techniques used. The analysis was done in a systematic process whereby a record of findings was noted soon after the interview, after being tested against the actual recorded conversation. This allowed for the correct transcription of findings and prevented bias from creeping in. This study was done at a certain point in time and dealt with technology. The researcher is almost certain that a similar study with the same respondents would yield different results considering the rapid changes in technology and the different attitudes of people towards the adoption of technology.

CHAPTER 4. PRESENTATION OF RESULTS

4.1 Introduction

This study seeks to understand the impact that mobile banking has on the lives of the low income population of South Africa, both positive and negative. The research was completed by conducting face-to-face interviews with 12 South African participants from LSM groups of 4 and below. The participants' identities are anonymous. Each participant was asked the same three qualifying questions and the same 10 interview questions. The participants were probed further for deeper understanding, where necessary. The results of the interviews will be presented in this chapter and explained in Chapter 5.

4.2 Demographic profile of respondents

The researcher interviewed 12 respondents from the cleaning, catering and call centre companies that the researcher has access to.

The respondents were diverse in terms of age, gender and type of occupation, but had the following in common which is relevant to study - they were all South African citizens, they all had bank accounts in South African banks, they all earned monthly salaries lower than R6, 000, and they all used cell-phone banking as a means to transact and bank. Each respondent is discussed in greater detail below.

Respondent 1: An African female aged 52 who was employed as a supervisor at a cleaning services company earning R5, 900 per month. She had a savings account at Capitec Bank and used cell-phone banking.

Respondent 2: An African female aged 32 who was employed as a labourer at a cleaning services company earning R4, 037 per month. She had a savings account at ABSA and used cell-phone banking.

Respondent 3: An African female aged 44 who was employed as a labourer at a cleaning services company earning R3, 500 per month. She had a savings account at Capitec Bank and used cell-phone banking.

Respondent 4: An African male aged 25, who was employed as a labourer at a cleaning services company earning R2, 950 per month. He had a chequing account at ABSA Bank and used cell-phone banking.

Respondent 5: An African male aged 34, who was employed as a labourer at a cleaning services company earning R3, 100 per month. He had a savings account at Capitec Bank and used cell-phone banking.

Respondent 6: A White male aged 26, who was employed as a labourer at a catering company earning R3, 250 per month. He had a savings account at Standard Bank and used cell-phone banking.

Respondent 7: An African male aged 21 who was employed as a labourer at a catering company earning R2, 970 per month. He had a savings account at Capitec and used cell-phone banking.

Respondent 8: An African male aged 25 who was employed as a labourer at a catering company earning R3, 800 per month. He had a savings account at Nedbank Bank and used cell-phone banking.

Respondent 9: A Coloured female aged 22 who was employed as a call centre agent earning R4, 350 per month. She had a chequing account with FNB and used cell-phone banking.

Respondent 10: An Indian female aged 21 who was employed as a call centre agent earning R4, 350 per month. She had a savings account at Capitec Bank and used cell-phone banking.

Respondent 11: An African female aged 22 who was employed as a call centre agent earning R4, 350 per month. She had a chequing account at FNB and used cell-phone banking.

Respondent 12: An African female aged 23 who was employed as a call centre agent earning R4, 350 per month. She had a cheque account at FNB and used cell-phone banking.

4.3 Results pertaining to the research question

4.3.1 *Introduction*

The only method used was semi-structured face-to-face interviewing of respondents. This section displays the actual account of the interviews per question asked and the common themes that were identified through the interview process. It was interesting to note that there were overlaps between advantages and disadvantages, where the same criterion that is considered an advantage can also be considered a disadvantage.

4.3.2 *Presentation of results*

The questions that were asked to each respondent are noted and discussed individually below.

When did you start using cell-phone banking?

The responses varied but it was established that the earliest that any of the respondents started using cell-phone banking was in 2010, with the majority only starting to use this technology in 2012.

Table 4: Year of first adoption of cell-phone banking

Year of adoption	**2010**	**2011**	**2012**	**2013**	**2014**	**2015**
No. of Participants	1	0	4	2	2	3

None of the respondents used any non-bank led model of cell-phone banking prior to or after adopting the bank led model that they currently use. All of the respondents only used cell-phone banking after opening a conventional banking account.

How were you introduced to cell-phone banking?

The majority of the respondents were first introduced to cell-phone banking at their respective bank branches, however they had all known about cell-phone banking prior to the bank branch initiation from family and friends that were already using this technology. After they were registered they learnt more about how to use this technology from family and friends who were early adopters.

Table 5: Introduction to cell-phone banking

Medium	**Bank Branch**	**Word of Mouth**	**Media**
No. of Participants	7	3	2

The older participants commented on how their younger relatives taught them to use the technology and now they are teaching others.

Usage of the cell-phone for banking/financial transactions

Each of the participants were asked to share the number of times per month they used each of the following services: purchase of airtime; purchase of electricity; transferring funds between accounts; paying accounts; other purchases excluding airtime and electricity; receiving money; sending money; balance enquiries; receiving transaction notifications; drawing statements/mini-statements; adding beneficiaries; accessing loans and lastly for any other transaction not mentioned in the list.

Table 6: Description and rate of usage

	No. of respondents	Total actions per month
Purchase of airtime	12	98
Balance enquiries	8	59
Funds transfer	7	24
Sending money	7	23
Receiving money	5	9
Purchase of electricity	4	7
Drawing statement/s	3	4
Purchase – other	3	4
Access – loans	3	As needed
Adding beneficiaries	2	As needed
Paying accounts		3

The purchasing of airtime ranked as the most frequent transaction and also the item that was purchased the most. The second most used function was the checking of balance enquiries. The most valued transaction was considered to be the real time in-contact SMS messages received showing the details of the latest transaction and balance available. All of the respondents found benefit in this service and all of them received this message as and when transactions occurred. None of the respondents used cell-phone banking for any other features other than those that the researcher discussed.

If it were not for cell-phone banking how else would you action these transactions?

The applicants were asked to describe how they previously carried out these banking and purchasing transactions prior to using cell-phone banking. The responses were all the same, i.e. in a bank branch, at an ATM and/or over the counter at a local store.

Since you started using cell phone banking please describe to me the changes that you experienced.

The respondents reacted positively to this question and spoke freely about the changes they experienced. The ease and convenience with which this technology allows them to access their funds in their bank accounts are the main drivers of their happiness. They happily spoke about purchasing airtime at any time of the day or night without having to leave their homes. They also accounted for saving of time and money as the immediate benefits of cell-phone banking. They went on to describe other benefits of being able to send money to people in need and routinely to their family in other areas without being restricted to business hours and transport issues.

Three of the respondents spoke about the ability to help others within their community by either buying airtime or electricity for them or by sending them money in an emergency. The fact that they did not have to carry cash was welcomed by the respondents. They spoke of not carrying cash as an obvious thing to avoid and cell-phone banking helped with this. They also did not have to travel so much as they could transact from their homes to buy airtime or to send money to their families elsewhere. They spoke of the free time that this created which allowed them to do other things or just to use for leisure.

Three of the respondents spontaneously spoke of the increased purchase of airtime as a negative impact in this discussion. One of the respondents said *“Now that it is so easy to buy airtime I enjoy speaking more to my family back home but I now spend more on airtime than I did before and this makes it hard for me”.*

Describe to me the best thing that cell phone banking has done for you (probe for examples).

The respondents repeated some of their responses to the earlier question and each were probed for a real life example. The examples probed were restricted to events that personally involved the respondent and the use of cell-phone banking.

Three of the respondents spoke of medical emergencies where they were able to help themselves and two of them helped others by paying for transport to the hospital and doctor’s fees. Three of the respondents spoke of not having cash on their person and by using e-wallet they were able to send money to themselves to draw from an ATM. Two of the respondents spoke of emergencies involving their parents and with cell-phone banking they were able to send money home quickly, and the funds were immediately available to their family thus averting the crisis. Two of the respondents spoke of car troubles and being stranded next to the road. They used cell-phone banking to send money to others to come help them. Two of the respondents spoke about the in-contact message system and balance enquiries. One mentioned that the best thing that cell-phone banking has done for him was to teach him how to be in control of his finances through in-contact and the ability to check balance enquiries simply by using his phone. The other respondent spoke of an incident where somebody got her card details from an ATM and stole R3000 from her bank account. Due to in-contact messaging she was made aware in real time. She immediately made contact with the bank and after verifying her information she was reimbursed for the loss. The R3, 000 was almost the entire amount that she had in her account at the time and she owes the successful reimbursement of the funds to the message she received. One of the respondents who spoke

about checking balances as the best positive also spoke of cell-phone banking as an opportunity for him to earn extra money, as he sells airtime and electricity re-charge vouchers in his residential area at a 10% mark-up.

The examples given largely describe desperate situations. The speed and efficacy of accessing finances through cell-phone technology allowed many of the respondents to avert potentially dire situations or to minimise the effect thereof.

What is the worst thing about cell phone banking?

This question was used to specifically illicit information regarding the negative impact of cell-phone banking. From the literature review it is apparent that there is a bias to positive impact and therefore the study could not rely on spontaneous discussions on the negative impact. This bias was also evident in the interviews. On this question the respondents had to think for answers as opposed to the previous question where answers flowed easily and with passion. After the respondents volunteered the ‘worst’ thing about cell-phone banking they were probed for other negative aspects they experienced regarding cell-phone banking.

Five respondents found it difficult to find something that was bad with cell-phone banking. Three of these respondents eventually conceded that there was nothing wrong with cell-phone banking and two eventually spoke of poor signal strength that closes a process or delays the action as the only bad thing about cell-phone banking.

Four of the respondents spoke of the convenience of purchasing airtime. They agreed that it was great to be able to talk and message more to more people and to remain in contact, however they regretted that they now spend too much of money on airtime. They compared their current spending patterns to the prior method of over the counter cash purchases; when they used cash they were fully aware of the amount they were spending, but now due to mobile money they do not feel that they are spending a lot until other needs arise and they realise how much they spent. As much as they saw this as a negative they were

also quick to discuss that self-discipline of the user and perhaps stricter limits form the banks should minimise the risk of over-spending.

Three of the respondents spoke of the security risk of their accounts being accessed by others as the only bad thing about cell-phone banking. As per these respondents, street robberies are common but in these instances, only what you have on your person is stolen whereas with access to their bank account, all of their money can be stolen. This fact made these respondents very nervous about cell-phone banking.

Two of the respondents who spoke of additional spend on airtime as the worst thing about cell-phone banking also spoke of how cell-phone banking has led to them being abused by the community members to purchase airtime and electricity, usually after hours when there are no other outlets available. Both of them feel as if they have become victims because they have cell-phone banking capabilities. They feel like they are being abused when they do oblige these requests and become alienated when they decline.

One respondent who also gave increased airtime purchases as the worst thing about cell-phone banking also stated that his ability to now to buy liquor at a 'shebeen' (informal liquor outlet usually found in the low income townships) is great when it happens but he regrets this the next day. He said *"it is so cool to have no money and still be able to party".* By money here he is referring to cash; he feels that this ability is going to ruin him financially but immediately conceded that this is more of a problem with his self-control than the technology.

What would make you stop using cell-phone banking?

This question was also used to draw out other possible negative impacts that may not have come to the fore with the previous question. Here again the respondents were hard pressed in finding quick, easy answers as they did when asked about the positive impact of this technology.

Six of the respondents responded that nothing would make them stop using cell-phone banking. Even after probing about possible negative impacts as elicited above, these respondents still maintained that nothing will make them stop using this technology. One of these respondents jokingly said *"I will only stop using cell-phone banking if my SIM card is lost and after I replace it I will start using cell-phone banking again".*

Five of the respondents gave a security breach as the only reason they would stop using this platform for banking. The respondents spoke of the risk of somebody else gaining access to their bank accounts through this platform and stealing all of their money in that account. Although none of them had experienced such an incident or even knew of anybody that this has happened to, they were adamant that should this happen to them, they would stop using this means of banking.

The same respondent who spoke of cell-phone banking allowing him the ability to purchase liquor from shebeens without cash and who overspends on buying more airtime than he did previously with cash, also stated that he would stop using cell-phone banking if he does not get his overspending under control.

In your opinion, does cell-phone banking help the poor? If so, why? If not, why not?

This question was used to get the respondents to think of themselves and people of similar income status as a group and for them to think of the positive and negative impacts of cell-phone banking on their lives.

Eight respondents answered in the positive and stated various reasons for their opinion. The majority of the reasons mirrored their own positive experiences with cell-phone banking such as convenient purchase of airtime and electricity, and receiving much needed money with no need for long distance transport, informal networks or bank branch visits. Several of the respondents spoke about travelling to bank branches that are usually far from the rural areas to otherwise access these benefits, whereas cell-phone banking delivers the funds

to the phone and if cash is needed they can convert this mobile money into cash at a bank ATM which are usually closer.

The other four respondents answered in the negative stating the following reasons: over-spending is a reality and this hurts the poor more than the convenience helps them; access to loans are too easy and most poor people really need the extra money, but this can hurt them if they do not manage their finances properly; the poor lack the knowledge to deal with this type of convenience and this will hurt them in the long run; and lastly one respondent erroneously thought that a smartphone is required to use cell-phone banking and therefore she thought that cell-phone banking cannot help the poor as most of them cannot afford or use smartphones.

What advice would you give the banks about cell-phone banking?

This question was designed to probe for deeper understanding about the possible flaws the respondents may have found in the system that affect their lives.

Six of the respondents had no advice to give the banks other than offer their gratitude for this platform that they find great benefit from. These respondents further stated that nothing is wrong with cell-phone banking but there is a need for the users to exercise more discipline and control to curb overspending through this channel.

Three respondents asked for banks to introduce limits on airtime and electricity purchases to help minimise the risk of over-spending and abuse. Three respondents asked for stronger security measures to prevent other people accessing their bank accounts through cell-phone banking. There were also additional responses from this group regarding additional features on this platform such as the ability to stop debit orders; loading of multiple beneficiaries at once; and to make the system easier to use.

4.4 Summary of the results

After analysing the results a few common themes and themes of particular interest began to emerge. The themes were identified and are presented in the table below under the main headings of positive and negative impact. The results are presented in order of prevalence of positive impact from highest to lowest.

Table 7: Positive and negative impacts – themes identified

Positive Impact	**Negative Impact**
Increased communication	
Convenience	Convenience
Social assistance	*Social assistance*
Emergencies	*Emergencies*
Decreased costs	
Safety and security	Safety and security
Information	
Access to loans	Access to loans
Reselling	

CHAPTER 5. DISCUSSION OF THE RESULTS

5.1 Introduction

In this chapter the results presented in Chapter 4 are analysed and evaluated. Links are also made to the literature review contained in Chapter 2. The findings are discussed under the two main topics of the positive impacts and negative impacts that mobile banking has on the lives of the low income population of South Africa. These two topics are broken down further into the common themes found under each of these headings.

5.2 Positive impact

There was an overall bias towards mobile banking having a positive impact on the lives of the low income population of South Africa from the literature review and the interview findings. The most common themes are discussed in detail below.

5.2.1 *Increased communication*

As per this report, the most used function of cell-phone banking amongst the respondents is the purchasing of airtime. This enables the respondents to stay connected and to perform functions on their handsets. This is corroborated by a World Wide Worx study, where it was found that 61% of the sample surveyed used cell-phone banking to purchase airtime and that the purchase of airtime ranked as the most prevalent purchase made (Goldstuck, 2009). Also in the literature review it was established that the poor find benefit in increased communication as a cost saver; the example given was the ability for fishermen in India to call their respective markets to determine demand prior to traveling (Singh, 2009).

The respondents in this study further elaborated that they now purchase more airtime than they did prior to cell-phone banking. This is largely due to the ease of acquisition. This enables the respondents to increase their communication participation rate; they now talk and message more, and to more people, than they did previously. As per the respondents, although they regret the additional spend they appreciate the increased communication and the social phenomenon of 'being in touch'. This behaviour was evident across the age groups of the respondents with no bias towards younger people noticed, however this fact should not be taken as a generalisation as this was only a sample of 12 respondents.

5.2.2 *Convenience*

Inconvenience was identified in the literature review as a deterrent to the poor from accessing financial institutions, whereas mobile banking was quoted as a vehicle to overcome this deterrent (Alexandre, et al., 2011).

In the interviews, convenience was the overarching positive impact that was expressed in many forms. Respondents commented positively on the ability to transact without having to leave their homes, with no queues and at any time. They especially appreciate the ability to transact outside of business hours. The respondents find that the convenience of cell-phone banking allows them more time for themselves to either deal with other matters of importance or for leisure. The highest ranking point in this theme is the respondents' ability to send money to loved ones or people in need without having to leave their home and at any time of the day or night.

The satisfaction and sense of pride related to convenience of use is very clear. This was determined by the choice of words, tone of voice and body language exhibited by the respondents when discussing the actual examples of being able to buy airtime at any time or to be able to send money to family members in other areas without leaving home.

It must be stated that seven out of the 12 respondents also stated convenience as the driver for over-spending and abuse. They suggest intervention from the banks and self-discipline amongst users as the remedies to curb this risk of abuse. This is discussed in more detail in 5.3.1 below. The two sub-categories below are given particular attention under the main category of convenience due to their greater impact on society/community.

i. Social assistance

An interesting concept, although raised by only two respondents, was the ability to help others in the community, especially with airtime or electricity purchases, using cell-phone banking. The literature review is silent on this being a factor of adoption of cell-phone banking or as an impact on cell-phone banking users.

The same respondents went on further to speak of this benefit also as a negative, due to the abuse by members of the community. This is discussed under 5.3.1, below.

ii. Emergencies

The respondents were probed for examples of when cell-phone banking helped them the most; eight of the 12 respondents had a narrative that spoke of either a medical, family or vehicle emergency taking place where cell-phone banking allowed them to help themselves or others in need. Although this benefit fits within the theme of convenience, the health and safety risks presented in these examples warranted a more unique theme.

Here again respondents spoke with a sense of pride and accomplishment regarding their ability to help others in need, with their access to this technology making them the most suited to help.

As per Kendal and Voorhies (2014) in the literature review, emergencies can be averted and normality of diet and basic necessities restored due to the safer and instant sending of money through mobile banking. This is seen as a strong positive factor as per the literature review and as per the respondents in this study.

5.2.3 *Decreased costs*

The discussion surrounding decreased costs presented itself in several ways. There is a sense of pride and a sense of winning that became apparent in the interviews. The respondents are happy about not having to go to a bank branch, ATM or store to do what they can now do on their cell-phones from a convenience standpoint, but they also praised the logical, immediate benefit of not having to pay for the transport costs to get there and the lower fees levied by the banks to use these features on their phones. The purchase of airtime was trumped as a great success due to convenience, but also due to the lower cost in purchase versus the over the counter mark-ups. These three immediate cost benefits were discussed by the respondents as victories and again brought about pride and happiness in the respondents. Along with convenience, the respondents discussed the reduction in costs as a meaningful positive impact in their lives, in the following manner:

- Savings on transport costs with no need to travel to banks/ATMs/shops.
- Lower fees to transact.
- No mark-up on airtime as experienced with over the counter purchases.

Although these costs may be perceived to be marginal, in the lives of the respondents in this study savings these costs are a meaningful positive factor.

The literature review revealed that true benefit to the poor will only be derived by means of access to a larger spectrum of financial services such as savings and insurance (Pande, et al., 2012). Although this is true, there is also immediate value created in reduced costs. The literature review further revealed that even if users continue to make the same transactions to the same people, by using cell-phone banking they will experience reduced costs (J. Donner & Tellez, 2008).

5.2.4 *Safety and security*

The literature review revealed that South African citizens who use public transport and who travel between townships and the main CBDs (central business districts) are more likely to fall prey to street or common robberies. Money in the form of bank notes is the main target of these crimes. Although these robberies generate less trauma than other violent crimes, the disruption of lives can be severe as the victims are mostly targeted during weekly and monthly wage payment periods (De Kock, et al., 2015). It was further discovered that the non-cash transactions that mobile banking facilitates is one of the primary draw cards for the adoption of mobile banking (Dickman, et al., 2006)

All of the respondents use public transport and the majority reside in low income township areas in the Gauteng Province. The fact that cell-phone banking and bank cards negate the carrying of cash was spoken about as a matter of course and obvious. None of the respondents discussed being victims of common robberies or even witnessing such an incident, but they spoke of not carrying cash with a smug and savvy resolve. This is seen as a positive impact but not one that is top of mind for these respondents.

The respondents spoke about carrying cash as an obvious thing to avoid in their lives. They praised the fact that mobile banking negated the necessity to carry cash, thereby protecting them from losing their money through these criminal acts. The respondents also acceded to the fact that they remain at risk of their cell-phones and other valuables being stolen in these incidents.

Considering the strong evidence in the literature review and the corroborating evidence from the respondents, there seems to be a definite positive impact in terms of safety and security for the low income population when adopting mobile banking.

Five of the 12 respondents voiced their fear of the perceived risk of ‘scams’ or ‘hacking’ that mobile banking opens them up to. Although none of them were

victims or even knew of a victim of such an offence, they still felt that mobile banking exposed them to this risk.

5.2.5 *Information*

In the literature review it was established that one of the main three benefits of mobile banking is the ability for the bank and client to interact instantly, in real-time. Banks can instantly push account information and reminders to clients. It was further stated that an additional advantage is that banks can use the amassed amounts of data from mobile banking behaviour to rate clients on credit and affordability to make additional products available to them (Kendall & Voorhies, 2014). Also in the literature review, it was established that 74% of the people surveyed in the World Wide Worx study used cell-phone banking to check balance enquiries and 73% to receive in-contact notifications. These usages ranked as the highest rate of usage in the study (Dagada, 2009).

Similarly, the respondents rated the SMS in-contact platform as the most beneficial in terms of being informed of their financial transactions and balances. One of the 12 respondents told a story of how these notifications alerted her to a card theft that she was unaware of. The notification enabled her to act swiftly and the bank reimbursed her for the R3, 000 cash loss that she suffered. As per the respondent, the reimbursement was only possible due to her swift reaction after receiving the notification.

Information received through in-contact SMS is treasured and bragged about by the respondents. The real time notification creates a sense of awareness and control in the respondents. It is evident that this bolsters confidence as this was ascertained from the demeanour and choice of words used to describe the impact of in-contact and balance enquiries on their lives.

Aside from being informed of transactions as and when they occur, the respondents found value in the ability to check their bank balances via their cell-phones. The third most used function of cell-phone banking amongst the respondents was the checking of account balances by using this platform. The

respondents found benefit in the ability to check their balances with none of the inconvenience of going to an ATM or to a bank branch.

Three of the 12 respondents also commented on the notifications of fees and limit increases that were pushed to them via cell-phone banking. They appreciate the speedy and concise information that they receive which gives them a sense of control.

5.2.6 *Access to loans*

This is the only theme that touched on the augmenting of financial service offerings to cell-phone banking clients. The other menu list items were always available to clients via conventional channels, however the push notification of the availability of micro-loans to the user is a move to enhance the offerings on the cell-phone banking platform.

In the literature review it was established that by making services such as loans, savings and insurance available, real value will be delivered to the low income users (Pande, et al., 2012). It was also found that banks can use the data collected from mobile banking behaviour to rate clients on credit and affordability (Singh, 2009). This allows banks the opportunity to offer additional products to targeted clients.

Only three of the 12 respondents used this notification to access these micro-loans and all three spoke about these loans in the positive and the negative. The fact that they could access funds on their own without having to turn to conventional methods of borrowing from moneylenders or pawning valuables gives them a sense of accomplishment and happiness.

5.2.7 *Reselling*

Another interesting concept discussed by one of the respondents is the ability to profit from the social assistance as discussed above. This respondent sells airtime and electricity at a 10% mark-up for cash in hand. The negative for him

is that he then spends this cash on luxuries and is left with less money for necessities in his bank account. His response to this discussion was that once he learns more discipline the enterprise can work for him.

In the literature review it was established that there is evidence of low income users generating new avenues of revenue by the increased production benefits that cell-phone banking brings and the re-selling of airtime is noted as an example of this (Singh, 2009). It was further established that early studies in 2002 found that people were sending airtime to friends and family who would then re-sell this airtime for cash, thus using airtime as a proxy for cash. This discovery prompted Vodafone to investigate mobile money in the developing nations, which subsequently led to the launch of M-Pesa in Kenya (TechCentral, 2014b).

5.3 Negative impact

Although there was a bias to the positive impact of mobile banking, it was interesting to establish that five of the nine positive themes identified above also featured as negatives.

5.3.1 *Convenience*

Just as the literature review and the respondents' ranked convenience as one of the biggest positives of mobile banking, so too did the respondents rank convenience as one of the biggest negative factors.

As per six of the 12 respondents, the ease of purchasing airtime resulted in an immediate increase in the amount of money they spend on it, which puts a strain on their finances. One of the respondents also spoke of the ability to make cashless liquor purchases at shebeens by either swopping airtime for liquor or transferring cash into other's accounts using cell-phone banking. This presents an interesting concept as cell-phone banking allows for an exchange of funds either in mobile money or in airtime as a proxy, without any hardware

such as point of sale machines, and therefore allows greater financial freedom to transact.

Two of the remaining respondents that did not see convenience as a negative factor commented strongly on the fact that self-discipline is required when you use cell-phone banking and in the absence of such discipline you can easily over-spend.

There is nothing in the available literature regarding a lack of discipline being a negative impact, or of it being a factor that must be considered when considering the move to mobile banking by the masses.

i. **Social assistance**

Here again it was established that respondents felt that the ability to help others is a positive factor, but the abuse of such help negatively affects them. Eight of the 12 respondents reside in low income areas where financial strain to even satisfy basic needs is prevalent. Although only one of the respondents raised this point, it can be logically deduced that the abuse of cell-phone banking users in these areas can be prevalent. The convenience of cell-phone banking makes the users the ‘go to’ people in the community for purchases such as airtime and electricity.

ii. **Emergencies**

Although eight of the 12 respondents spoke of examples where cell-phone banking helped them or others in emergencies related to health, safety or car troubles, three of these respondents also voiced their feeling about people abusing their good nature due to them having access to mobile banking. In the absence of this technology, people would not have called on them for help.

5.3.2 *Safety and security*

Three of the 12 respondents expressed concern about the perceived risk of scams and hacking, although none of them had experienced or knew of

anybody that were victims of such acts. Even though the risk is far removed in reality, it weighs heavily on their minds.

In the literature review it was also established that the perceived risk of security breaches worked against the adoption of cell-phone banking (Brown, et al., 2003).

5.3.3 *Access to loans*

The three respondents who use the cell-phone banking platform to access micro loans spoke in the positive and negative of the offering. They discussed the benefit of accessing much needed finance to secure their basic needs, but then of the negative of them having to pay off these loans which burdens their future financial well-being. Here again the respondents' spoke of the need for self-discipline to safeguard themselves from financial ruin.

However, the feeling that credit is good and bad is not unique to the low income population or to cell-phone banking users. It is common knowledge that this perception is widespread across demographical spheres and is a common feeling held by most people. To be happy and unhappy with credit is a natural phenomenon, however, and is not unique to persons within any particular demographic group.

5.4 Conclusion

The respondents described both positive and negative impacts of cell-phone banking on their lives. The factors that were discussed were largely corroborated by the existing literature discussed in chapter 2, however a few deeper social and cognitive aspects that were discovered in the interviews are not found to feature in the available literature surrounding this topic.

The participants were biased towards the positive impact of cell-phone banking and several of them had narratives of how cell-phone banking helped them in an emergency situation. The positive aspects range from increased

communication to new revenues of income through the re-selling of airtime and electricity.

Convenience of use was the theme that occupied most of the time of the interviews, however convenience as a theme also presented other sub-themes such as social assistance and emergencies where social interaction became a topical discussion.

The accessing of loans being pushed to the respondents via cell-phone banking was not widespread in this study; however the three respondents that used the service by simply following menu options on their cell-phone found great relief for an immediate financial need. They did say that they regretted it shortly thereafter, however, when they felt strain on their monthly incomes to pay off the debt.

The additional revenue stream of re-selling airtime and electricity at an increased margin was discussed by one respondent; however as per the literature review this kind of behaviour is not uncommon in poor communities. The enterprise is sound but the respondent is nervous about self-discipline to manage the actual cash versus the money in his bank account that is needed for his own necessities.

The biggest negative impact stemmed from the biggest positive impact, i.e. convenience. The absolute convenience of being able to purchase airtime was touted as the most common regret, as all of the respondents reported an increase in the amount of airtime purchased since moving to cell-phone banking, thus causing a reduction in available funds for other items. They largely attribute this overspend to not actually seeing themselves spending the money. All of the respondents conceded that the increased communication benefits them in a meaningful manner but all of them also regret the additional spend. Self-discipline and limitations by the banks are proposed as possible solutions to curb the possibility of over-spending.

The ability to help others was also discussed as a negative due to abuse by others. The convenience of immediate purchase and remittance makes the cell-phone banking user a worthwhile target. The relevant respondents spoke sadly about this point as if they do not want to blame the technology but rather their circumstances.

The risk of information and money being stolen through the cell-phone banking technology is real for the respondents, despite none of them having been or even knowing a victim of such an offence. Even after probing this point and discussing it further the respondents were still adamant that this is a real risk, although logically this is only a perceived risk.

The three respondents who use the technology to access micro-loans offered by their banks via cell-phone banking menu list are grateful and unhappy; they are grateful that a need was immediately fulfilled but unhappy that they had to start paying back the loan which diminished their already strained monthly income. Here again the respondents' described self-discipline and controlled lending as possible remedies to prevent over-indebtedness.

The respondents discussed both positive and negative impacts of cell-phone banking. The majority of their discussion points and themes are also corroborated in the literature review. The negative impact is largely centred on lack of education and trust in the technology and themselves.

CHAPTER 6. CONCLUSIONS & RECOMMENDATIONS

6.1 Introduction

This chapter concludes the research report. It firstly deals with a conclusion of the study wherein all the main points are summarised, after which recommendations are made based on the findings. Lastly, suggestions for further research regarding this topic are proposed.

6.2 Conclusions of the study

6.2.1 *Introduction*

The purpose of this study is to understand the impacts of cell-phone banking on the lives of the low income population of South Africa, both positive and negative. The study focuses on cell-phone banking as an additive technology that enables branchless banking for current conventional bank account clients. The transformative, non-bank led models of cell-phone banking was discussed in the literature review but not investigated any further. Both positive and negative impact was determined in the study, and there is a strong bias towards cell-phone banking having a positive impact on the lives of the respondents. Each of the impact areas are briefly discussed below.

6.2.2 *Increased communication*

The study revealed that the convenience factor of cell-phone banking, which allows for the purchase of airtime in any denomination, at any time and from any geographical location, allows the users to stay in touch. The positive result of this is an increased rate of communication with family and friends and an increase in the number of new people that are communicated with. This is an important factor as in the era that we live in, people who are not communicating or staying in touch are socially and sometimes economically excluded.

The immediate and intuitive negative impact of this feature is that users now spend more money on airtime that they previously did. Self-discipline and restraint is required to manage the risk of over-spending.

6.2.3 *Convenience*

The convenience factor features as the biggest driver to adopt this technology and features as a positive impact in various forms. The fact that users can make purchases, pay accounts, transfer money to others (family and acquaintances), and check account balances at any time or day and from any geographical location instils a sense of control, which leads to pride and confidence in the user. In the absence of cell-phone banking these transactions are completed at a bank branch, ATM or at a retail store. Additional time is created for the user for other important tasks or leisure. The ease of purchase goes further than airtime and electricity and into shebeens where liquor is purchased by either transferring virtual money into the owner's account or by simply buying airtime for the owner or any other person willing to spend the cash required. This is most convenient as no cash, card or point of sale is required.

As much as convenience of this technology is praised as a positive, it is also blamed as the feature that causes over-spending and lends itself to abuse. The abuse here comes from the community that turns to cell-phone banking users for favours to purchase airtime and electricity. Prior to cell-phone banking the user could easily decline the request for assistance due to not having cash available or due to the request being made outside of business hours, however with cell-phone banking the same convenience of not being inhibited by these factors makes the user the 'go to' person in the community. The impact here is seen as negative due to this convenience factor leading to either over-spending or alienation within the community.

6.2.4 *Decreased costs*

The immediate gain of savings from fewer taxi trips, lower transaction fees and cheaper airtime was identified as a positive impact in this study. The study further reveals that this short term cost savings is met with a sense of victory and is valued in real economic terms by the users.

6.2.5 *Safety and security*

Cell-phone banking allows the user to transact without actual cash notes. This is a major positive for the low income community. Due to the fact that the respondents all use public transport, all work in an area on the periphery of a CBD and the majority of them reside in low income townships, this group of people are most likely to be victims of common robberies where cash is mostly targeted. The fact that they do not have to carry cash due to cell-phone banking is a big positive impact on their lives.

The negative perception of the integrity of this technology being breached was found to be present in this study. The perception of distrust in the safety of the technology weighs heavily in the minds of the user.

Although no evidence of robbery or technology security breach was uncovered in this study, these two scenarios are real in the minds of the users.

6.2.6 *Information*

The in-contact notifications and ability to check bank balances at any time is appreciated by the low-income users of cell-phone banking. The study revealed that a user was reimbursed the funds stolen from her account due to her quick reaction in response to the in-contact information that was sent to her phone via SMS. The fact that the user is kept abreast of all transactions above a certain pre-determined threshold and can check balances at any time gives the user control over their funds and bank account. This kind of control was absent prior to cell-phone banking as the alternatives were ATMs and in-branch banking.

Both of these avenues cause discomfort for the user which leads to limited usage.

6.2.7 *Access to loans*

The study finds that banks are augmenting services offered through cell-phone banking. The users are appreciative of the ability to access funds by themselves without having to venture down the conventional route of moneylenders, pawning of items or in-branch applications. The fact that micro-loans are offered to the user via their cell-phone banking profile makes the user feel accomplished and proud.

The negative factor of this feature is the common adverse reaction to credit, which is not unique to cell-phone banking or low income users. It must be stated that it is common knowledge that paying a bank is far safer and often cheaper than paying an informal moneylender or selling a valuable item at a pawn shop.

6.2.8 *Reselling*

Entrepreneurship also features in this study in that it was discovered that users will sell airtime and electricity at a 10% mark-up for instant cash in hand. This increases the user's immediate cash worth but reduces the money in the bank. Here again, self-discipline is required to prevent the over-spending of the cash-in-hand.

6.3 Recommendations

Based on the findings of this study the below recommendations are made to the following stakeholders: banks, mobile network operators and policy makers.

6.3.1 *South African banks*

There is a clear indication in the literature review that the adoption of technology to do banking is on the increase in South Africa. The adoption of this technology

will enhance profits of the banks by attracting new clients, increasing transactions of existing clients and by reducing costs to service clients via the cell-phone banking platform. The low income user is the largest group of clients as a collective, and therefore makes for an attractive market in terms of size.

The fact that cell-phone banking benefits the user is becoming common knowledge. This study gives the banks hints on how to hasten the conversion by appealing to the emotions of potential users. The marketing campaigns to pull clients into this space should focus on emotive type campaigns, with pride and control boosting confidence and ego being the key themes of these campaigns. The sense of inclusion through technology can also be pushed in these campaigns.

The fear of not trusting themselves also needs attention; the banks cannot be expected to instil self-discipline but can use limits and real time push notifications more effectively to make the user aware of possible overspending.

To avert distrust and to allay perceived security risks, actual data should be used to appeal to rational thought. The banks should find ways to break through this perception as it was a prevalent anti-adoption factor in 2003 and was identified as a negative impact factor in this study in 2015. This perception can be attacked by showing that the incidents of theft via cell-phone banking pales in comparison to the rate of street robberies. This is probably the easiest point to push; the real challenge is to allay fears of losing all of the money in a bank account versus a street robbery where you can only lose what you have on your person. The banks should pursue education campaigns via mainstream media about the security risk of divulging personal identification numbers and codes.

The banks should choose channels and spaces to run these campaigns in languages, places and at times conducive to targeting the majority of the low income population. As an example of such a campaign the banks should consider targeting the mini-bus taxi associations to have the long-distance taxi drivers able to collect fares via cell-phone banking where the vehicle has a designated account to be added as a beneficiary.

6.3.2 *The mobile network operators*

All of the mobile money transactions on a cell-phone require airtime and/or data in the case of smartphones. The study revealed that the convenience of airtime purchase also increases airtime purchases made. From the study it was established that the purchase of airtime is the single most purchased item on the cell-phone banking platform. This was also corroborated in the literature review (Dagada, 2009).

As cell-phone banking grows in popularity so too will the sales of airtime, as it is found that the rate of purchase of airtime increases due to the convenience of acquisition brought about by cell-phone banking. The obvious spin-off is also the decreased cost to deliver airtime to the consumer. There is also a profit incentive for the mobile network operators to also promote the adoption of cell-phone banking.

6.3.3 *The regulator*

The low income population is fragile in terms of the poverty line and unfortunately also generalised by lower education levels. It is for these reasons that they need greater protection from others and from themselves when it comes to financial matters.

The regulator can learn from this study that overspend on this platform is a real fear amongst the poor. The regulator can use this study to consider imposing certain restrictions/limit requirements on the banks. This will not stop overspending, but may mitigate the risk by minimising the amount that can be overspent. This type of forced limit restriction can be seen as prohibitive, however, and therefore must be approached with caution.

From a wider than technology aspect, financial education is the key to sustainably helping the poor. In the study it was established that there is still an unsubstantiated fear of theft through this channel and about the use of micro loans. Policy makers can consider imposing certain basic education for all new clients with a maximum education level. Educating users on how to transact

with their banks on this channel and how to deal with credit, savings, assurance and insurance could be considered.

This study reveals that although the low income population derives a positive impact from this technology, protection is still required to protect them from themselves. Just like social media is sometimes blamed for the scourge in our moral fibre, the banks should guard against cell-phone banking being blamed for over-spending and the financial ruin of low income people. The banks and the government can use this study to find ways to re-brand mobile banking for the poor so as to responsibly increase adoption of this technology in these communities.

6.4 Suggestions for further research

Although there are many studies on the adoption of cell-phone banking by the low income population, there are limited studies on the actual impact of cell-phone banking on the lives of the low income user.

It was determined in this study that none of the participants used non-bank led models of cell-phone banking. As per the literature review, the adoption rate of non-bank led models is very low in South Africa as compared to other countries in Africa, such as Kenya. Further research on the reasons for this phenomenon is recommended.

Further research is also recommended on more specific impact areas such as financial, social and security and risk. Each of these impact areas can be studied in greater detail to add to knowledge of the impact of this technology on the lives of the lower income masses in South Africa. A deeper understanding of each of these impact areas may reveal new information that could assist the government, banks and mobile network operators to deal with this technology.

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APPENDIX A: Consent form

Consent by Participant

I _____ (participant number, e.g. participant 1) hereby consent to this verbal interview with Mr Roshan Maharaj in order to assist with this research topic.

I understand that:

- My identity will be kept confidential;
- I will answer the questions to the best of my ability and knowledge in an honest manner;
- This is a voluntary interview; and
- That I can withdraw at any time.

Signed on this ____ day of _____ 2015.

Participant _____

APPENDIX B: Research Instrument

Semi-structured interview questions

Qualifying questions:

1. What is your gross monthly household income? *Disqualify if greater than R6, 000*
2. Do you use your cell-phone to do banking? *Disqualify, if No*
3. Are you a South African citizen*? Disqualify, if No*

Interview Questions:

1. Since when are you using cell phone banking?

2. How were you introduced to cell-phone banking?

3. How many times in a month do you use your cell phone for:
    - Buying airtime;
    - Buying prepaid electricity;
    - Transferring funds between accounts;
    - Paying accounts;
    - Making a purchase;
    - Receiving money;
    - Sending money;
    - Balance enquiries;
    - Transaction notifications;
    - Drawing statements/mini-statements;
    - Adding beneficiaries.
    - Accessing Loans

- Other

4. If it were not for cell phone banking how else would you action these transactions?

5. Since you started using cell phone banking please describe to me the changes that you experienced.

6. Please describe to me the best thing that cell phone banking has done for you. (probe for examples)

7. What is the worst thing about cell phone banking?

8. What would cause you to stop using cell phone banking?

9. In your opinion, does cell-phone banking help the poor? If so, why. If no, why not?

10. What advice will you give the banks about cell-phone banking?