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Mobile banking and inclusive innovation at the bottom of the pyramid in South Africa

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Mobile banking and inclusive innovation at the bottom of the pyramid in South Africa

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A research report submitted to the Wits Business School in the University of the Witwatersrand, in partial fulfilment of the requirements for the degree of Master of Management in the field of Innovation Studies.

Johannesburg, 2021

ABSTRACT

Financial institutions and technology have a critical role to play in alleviating the plight of people leaving in poverty through innovative and inclusive offerings. Pro-poor innovation is mostly done through non-profit charity organizations. It is now increasingly recognized that inclusive innovations of people living at the bottom of the pyramid (BOP) can be developed and diffused through appropriate and relevant market mechanism.

The aim of this study is to examine, through a quantitative analysis, the benefits, and challenges of mobile banking innovations development for BOPs in South Africa. A questionnaire was administered on participants, randomly selected, in Gauteng province.

Effective mobile banking implementation is possible with clear regulations on pricing, competition, prudential banking, deposits, and payment system regulation to ensure transparency, consumer protection, safety, integrity, secure and efficient systems. With partnerships, co-creation and collaborative efforts can be combined to bring more awareness to mobile banking innovations.

With partnerships, co-creation and collaborative efforts can be combined to bring more awareness to mobile banking innovations. It is recommended that a competitive mobile banking environment, key stakeholder partnerships, adequate awareness campaigns, infrastructure development, BOP clientele focus and balanced regulatory policies be created to facilitate growth within the mobile banking innovation of BOPs in South Africa.

KEY WORDS

Inclusive innovation, bottom of the pyramid, mobile banking

DECLARATION

I, Matshidiso Maseko, declare that this dissertation is my own unaided work except as indicated in the references and acknowledgements. It is submitted in partial fulfilment of the requirements for the degree of Master of Management in the field of Innovation Studies at the Wits Business School in the University of the Witwatersrand, Johannesburg. It has not been submitted before for any degree or examination in this or any other University.

Signature:

On this 28th day of April 2021

Matshidiso Rosinah Maseko

Name

DEDICATION

This study is dedicated to my family. Thank you for the support, encouragement, and patience.

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I would like to acknowledge God for carrying me through the journey.

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LIST OF ABBREVIATIONS & ACRONYMS

AML	Anti-Money Laundering
ATM	Automatic Teller Machine
BOP	Bottom of the Pyramid
CFT	Combating the Financing of Terrorism
CGAP	Consultative Group to Assist the Poor
DFID	Department for International Development
DIT	Diffusion Innovation Theory
EFT	Electronic Funds Transfer
GSMA	Global System for Mobiles Association
ICT	Information and Communication Technology
IICAF	Inclusive Innovation Context Analysis Framework
IT	Information Technology
KYC	Know Your Customer
MNC	Multi-National Companies
MMT	Mobile Money Transfer
NGO	Non-Government Organization
OECD	Organization for Economic Co-operation and Development
PPP	Purchasing Power Parity
SA	South Africa
SMS	Short Message Service
SSA	Sub Saharan Africa
UNDP	United Nations Development Program

VAT	Value Added Tax
WB	World Bank

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CHAPTER 1: INTRODUCTION

1.1 PURPOSE OF THE STUDY

The aim of this research project is to examine quantitively, the benefits and challenges of mobile banking innovations development for BOPs in South Africa. This study is of value and important to financial organizations and mobile service providers. Collaborative efforts between the two key industry players can help address the need for inclusive, accessible, and improved mobile banking services to the vulnerable, low income and impoverished elements of society.

Reficco and Márquez (2012) have pointed out the role that business can play in helping to alleviate poverty in developing countries. This idea has received some attention and focus from academics and relevant practitioners (Reficco & Márquez, 2012). Partnerships and collaborations in markets that (can) participate in inclusive innovation are important to addressing the issues of bottom of the pyramid (BOP). These partnerships can contribute to existing knowledge base on BOP initiatives.

According to Pankomera and Van Greunen (2018), Africa has a growing rate of mobile phone penetration, affording a more significant financial inclusion acceleration potential. The penetration is enabled through the rising BOP individuals that are adopting mobile banking in Africa. The adoption of mobile phones is engendering an increase in mobile banking products and services globally, particularly in Africa and other developing nations, where most people living in poverty are unbanked and do not own bank accounts.

Mobile phones have also aided the increase in financial inclusion for people living in poverty in both developing and developed countries

(Demirguc-Kunt et al., 2018). The days of seeing the poor saving their money under a mattress or having to walk long distances to access banking services have slowly been disappearing. This is because of mobile money transfer (MMT) being embraced as a banking solution. Financial exclusion is widespread in developing countries. A World Bank report indicates that in OECD nations, bank account ownership is common, whereas in developing nations only 54 percent of adults have bank accounts (Demirgüç-Kunt, et al., 2015).

This study's purpose is therefore to ascertain the effect of inclusive innovation on the bottom of the pyramid (BOP). The importance of poverty reduction policies has changed its emphasis to comprehensive growth from meagre growth, where side-lined poor individuals can benefit from or contribute to economic development. The use of mobile phones has been instrumental in serving as a basis for several successful innovations in the information and communications markets/environment (Prahalad, 2009). The adoption and usage of mobile phones has grown significantly in South Africa over years. The growth of this technology created opportunities for banks and other financial technology companies (Brown, et al., 2003).

1.2 CONTEXT OF THE STUDY

The emergence of mobile banking innovation has so far had a positive effect in transforming banking services. It has impacted the expansion of financial products to many people in developing countries. Internationally, the number of people with formal banking accounts is rising, with developing nations experiencing a growth to 63% in 2014 (Demirgüç-Kunt et al., 2015). Similarly, over the past decade, Sub-Saharan Africa (SSA) has been on a fast economic growth trajectory (Faye, 2013). Over the first decade of the new millennium, the SSA has experienced vigorous economic development, with six nations within the region being among the global fast developing nations (Faye, 2013).

It is important though, to note that use and adoption of mobile phone innovations have had a significant and positive influence on economic growth with twice as much impact in developed countries than in developing ones (Salzman et al., 2001). Researchers such as Devarajan and Fengler (2013) have highlighted and related issues around income inequalities and poverty reduction in the Sub-Saharan Africa to a lack of financial inclusion. In addition, the SSA financial sector remains grossly exclusive despite widespread globalization and changes in cross border banking within Africa and from emerging markets over the past twenty years (Beck, 2015).

It is estimated that 50% of the poorest people remain unbanked, and at least 1.7 billion people do not use formal banking channels (Demirguc-Kunt et al., 2018). This shows that great potential exists in developing countries for more financial inclusion. According to Demirguc-Kunt et al. (2018) and Kemp (2018), the fastest internet penetration growth rates are in Africa, and are propelled by changes in mobile connectivity. Internet users have grown from an estimated 362 million in January 2017 to 453 million in December 2017 (Group, 2018).

According to Demirguc-Kunt et al. (2018) in 2017, over 1.7 billion individuals globally do not utilize financial products and services, and over 50% of poor adults remain unbanked. This shows that a great financial inclusion market is available in developing nations. In Africa, a considerable proliferation of mobile phones has been evident over the last twenty years in rural areas.

In mobile banking, research by Wu and Wang (2005) on middle class population highlighted that factor such as cost have a nominal effect on the consumer decision making of using the product. This observation brings to light the impact of mobile banking innovation to the consumer. The use is having much more value to their lives than cost. This, in turn, triggers the conversation about inclusive innovation and market generation. We should be asking questions along the lines of: which marginalized, excluded population does inclusive innovation need to

focus on? Does the categorization address women, youth, the disabled and ethnic minorities?

1.3 PROBLEM STATEMENT

Inclusive mobile banking innovation development:

In relation to BOPs, and the effects of alternatives and frameworks of mobile banking innovations to BOPs, there is a need to establish the relationships between these key factors and mobile innovation success to BOPs.

Mobile device functionalities, network and chip innovations, and point of sale technologies continue to get more advanced yearly (Pankomera & Van Greunen (2018). Past studies by Omwansa et al. (2013) have revealed that BOPs need banking instruments that are affordable, quick, suitable, flexible, and appropriate. The mobile money channels and the agents' networks have so far provided the best avenue for getting to people living in poverty. On the other hand, this market segment is not well incentivized for businesses to exploit it profitably (Omwansa et al., 2013).

Market alternatives for mobile banking innovations:

The disconnect between firms and the BOP markets is understanding the need of the BOP consumers, educating them about the product and its use, pricing the product right for affordability and lastly the means of reaching them (distribution channels) (Masinge, 2010). Large firms develop products for the middle-class market that already exist and in turn, do not put investment efforts in the BOP markets. Affordability primarily means, the ability for BOPs to use and pay for the mobile

banking innovations. Products must be affordable and accessible (Anderson & Markides, 2007).

Mobile banking legal framework necessary for inclusive innovation implementation for BOPs:

Current regulation on alternative or new banking channels is not very precise. New innovative channels proposed for the first time can be interpreted differently by regulatory authorities, which impacts the authorization process. It is important to have a framework where regulatory authorities, partner banks and technical partners work hand in hand to address concerns around themes like anti-money laundering, while promoting financial inclusion.

1.4 SIGNIFICANCE OF THE STUDY

This study is of value and important to financial organizations and mobile service providers. Collaborative efforts between the two key industry players can help address the need for inclusive, accessible, and improved mobile banking services to the vulnerable, low income and impoverished elements of society. Pitta et al. (2008) acknowledged that there are still more opportunities to be explored in the mobile banking services market which in turn would create value for BOPs. The study contributes to the generation of markets, with the banking industry as a case. It also addresses banking opportunities in BOP markets, and how banks can better understand their BOP customers and create business models that achieve financial inclusion (Taylor, 2016).

1.5 DELIMITATIONS OF THE STUDY

This study covers events between 2000- 2020. Any changes of events outside of this time frame were not extensively considered in the study. The study focuses on the impact of inclusive innovation on the poor (low incomes earning) in South Africa. Mobile banking enables communities to be able to have access to basic needs such as electricity, money in the form of receiving cash via retailers. Financially, the poor (BOP) can access banking with lower costs and no travelling to a physical branch.

1.6 ASSUMPTIONS

The main assumption of this research is that mobile banking innovations for BOPs are affected by political, socio-cultural, economic, and technological factors. Other factors might be at play. The assumption of the study is that the branches and operations of mainstream banks are mostly situated in urban or metropolitan areas, as opposed to peri-urban areas, that are not easily accessible to the BOPs**.**

1.7 DEFINITION OF KEY TERMS

"Inclusive innovation explicitly conceives development in terms of active inclusion of those who are excluded from the mainstream of development, differing in its foundational view of development, inclusive innovation therefore refers to the inclusion within some aspect of innovation of groups who are currently marginalized" (Foster & Heeks, 2013, p.37).

The BOP was defined by Prahalad (2006), as a proportion of the global population that lives on low incomes in comparison to the affordability and cost of basic needs such as food and healthcare (Taylor, 2016).

Mobile banking is referred to as the accessing of banking products and services utilizing a mobile phone such as bills payments, money transferring, and verifying account balances (Alafeef et al., 2007a).

1.8 RESEARCH QUESTIONS

This study research questions are as follows:

- What are the benefits and challenges of **inclusive mobile banking innovation development** in relation to BOPs?
- What are the factors that inform **market alternatives** for mobile banking innovations?
- What is the effective **mobile banking legal framework** necessary for inclusive innovation implementation for BOPs?

1.9 OUTLINE AND STRUCTURE OF THE REPORT

The structure of the research report is as follows:

Chapter 1: Introduction

The introduction chapter provides the background of the research subject, purpose, context, and the problem statement. The significance of the study, delimitation and assumptions are outlined. The definition of key terms, research questions and outline of the research report are explained**.**

Chapter 2: Literature Review

This chapter provides the literature review to reflect on what has been reported with regards to mobile banking innovation impact on BOPs. The chapter comprises of the definition of terms, mobile banking usage, challenges of mobile banking innovations, and benefits of mobile

banking innovations, thus highlighting the research problem to be addressed.

Chapter 3: Research Methodology

The chapter presents the adopted research paradigm, research design, and research strategy to guide primary data collection process. The sampling, data collection and data analysis methods are detailed and justified. The chapter outlines the limitations, ethical considerations, reliability, and validity of the research process conducted.

Chapter 4: Presentation of Results

The chapter presents the findings of the study based on the questionnaire responses that are captured, computed, and analyzed into meaningful numerical, statistical, and graphical data.

Chapter 5: Analysis of Results and Discussion

The chapter presents the discussions and analysis of the main findings in relation to the literature review to assist in reaching conclusions.

Chapter 6: Conclusions and Recommendations

This chapter presents a summative assessment of the research, its recommendations, and areas for further research.

1.10 CONCLUSION

The research subject of mobile banking innovation and BOP were introduced, and background provided. The research problem that motivated the study was discussed and the significance, delimitations, assumptions of the study were outlined. The definition, research questions and structure of the research report were described. The next chapter is the literature review for this study.

CHAPTER 2: LITERATURE REVIEW

2.1 INTRODUCTION

In the world today, there are around 4 billion people who live below an income of US$3000 annually (Thapa, 2013). The term used to categorize or describe this population is Bottom of the Pyramid (BOP). This literature review sought to analyze past studies and research work

in mobile banking innovations, in relation to BOPs. Literature advanced across academic and research communities relating to mobile banking innovations was appraised. These include the definitions, usage, challenges, benefits, and critical success factors of mobile banking innovations. The empirical studies and theories of BOPs and mobile banking innovations were discussed and explored.

2.2 DEFINITIONS AND CONTEXT OF MAIN SUBJECT TERMS

2.2.1 Poverty

Poverty means being unable to afford or meet the minimum human daily needs that are deemed reasonable by the standards of the society in question (Ravallion, 1992). Poverty is not a static condition. Individuals can move in and out of poverty over time. The experience of poverty can also be cut across by different forms of inequalities (gender, ethnicity, disability, and age, among others), which make the experience of living in poverty different for different groups of people (Goulden et al., 2014).

Poverty has a complex and multidimensional nature that reveals itself in various forms (Avais, 2014). An exhaustive definition is difficult to articulate, one that does not limit poverty to lack of material wellbeing since other researchers also include lack of nutrition, civil rights, spiritual wellbeing, and freedom.

Donner (2006) defined poverty as not having a job and fearing about the future, living a day at a time, unable to read and write. It is regarded as poverty, when one parent loses a child due to illness from unclean water and malnutrition. Poverty is “losing a child to illness brough by malnutrition and unclean water, and leaving without freedom” (Shaikh & Karjaluoto, 2015, p. 130).

2.2.2 BOP (Bottom of the pyramid)

In terms of market forces, there has been a significant change with regards to development. The focus has now been on the 'bottom-up' approach. This approach is now commonly referred to as "bottom of the pyramid. (Prahalad & Hart, 2002). The collaboration between poor regions or nations and multinational companies can be achieved through a sustainable and accessible involvement of these companies (Prahalad & Hart, 2002). The collaborations can help in developing new markets that are inclusive and help fight poverty.

Information technology plays a big role in this kind of analyses. Markets that are known to be difficult to access or poor to interest any multinational companies can be made accessible through ICTs (Ilahiane & Sherry, 2012). To encourage participation of individuals in these collaborations, there must be a culture of saving/investment amongst the BOP consumers (Landrum, 2007). The money saving activity is to allow for wealth creation, promote economic growth and participation in new markets generated by collaborations between BOPs and multinational companies.

The Base of the Pyramid protocol, however, brings about a different side to the thinking above. This protocol highlights the importance of engagement and input of BOP communities. The purpose of the engagement is to listen to the consumer's needs and determine what suits those needs (Prahalad & Hart, 2002). The Base of the Pyramid Protocol focuses on servicing the BOP consumers. Prahalad's book stresses the importance of serving the BOP market. However, the two (the book and the protocol) differ in approach and use of language (Landrum, 2007). "'Bottom' according to the Meriam-Webster Dictionary, is the underside, the lowest part or place, 'base' is a starting point "(Landrum, 2007).

Africa is a significantly big market for BOP. Industries such as banking must realize the need to change their old and traditional business models that cater for the well earning middle class population. The BOP is now a new category of customers that require a different set of banking products (Taylor, 2016).

2.2.3 Markets

Prahalad and Hart (2002) highlighted the economic opportunities in the BOP markets by suggesting that companies focus on low-income, high-volumes and low margin business models. However, (Simanis & Milstein 2012) argue that these kind of business models only work under two conditions:

- An existing company must already be in the market for wealthier costumers where factors such as infrastructure are already established.
- BOP should already have had exposure to the product. They should already know the benefits and how to use the product.

Simanis and Milstein' argument is based on studies done on the failures of BOP market strategies (Simanis & Milstein, 2012). The adoption model for these markets requires scaling capabilities that can sometimes be difficult to achieve. An example he made is that of a village set up. Infrastructure and other factors in villages can make it challenging for companies to have constant contact with consumers. These engagements are needed for the companies to gain relevant knowledge, trust and in turn create the right product (Taylor, 2016). When companies are not able to have contact with consumers, innovations can lead to low adoption rates, and in turn, high marginal costs leading to a drop in efficiency.

Marous (2014) argued the importance of digital technologies as a very instrumental component for BOP strategies. He made an example of the

Kenya M-Pesa case in Kenya where consumers do not need mainstream banking to move funds around. This is a disruptive type of technology in BOP markets. These kinds of strategies can be used as cornerstones that can bring a positive impact in the BOP market generation (Marous, 2014). Napier (2011) pointed out the challenges faced by mainstream banking to serve low-income customers. He suggested that these obstacles can be overcome by co-creation with local partners. In the South African context, banks have created partnerships with some of the big retailers. Standard bank is using the Spar partnership for their Instant money product.

Another example of co-creation is that of the Capitec case. Cañeque and Hart (2017) showcases co-creation in the Capitec case where their business model is centered around low-income customers. They used flexible IT systems, biometric identification and their proposition was that of building trust and good relationships with their customers. This case shows that understanding customers' needs is important in the BOP market. Knowledge, contact, and customer data gives insights that helps build the right product. Other banks that have being in the market long than Capitec have traditionally being using assumptions and generic quantitative data for their business models targeted at low-income customers (Cañeque & Hart, 2017).

The importance of an individual having a form of legal identity is realized in the banking industry. Without any form of identification, banks are not able to open an account, offer credit or any product for that customer (Prahalad & Hart, 2002). For a BOP customer, this means they cannot have access to any of the mainstream banking services. The identity document absence for the BOP creates an opportunity for banks to find an alternative way to offer services to their customers. This talks to business models that understand the social settings of BOP. The issues create an opportunity for generating a BOP market for the banks.

2.2.4 Inclusive innovation

Inclusive Innovation addresses the needs of persons with low incomes. This kind of innovation encourages inclusion and addresses the inequalities in most societies. The implementation of inclusive innovation has been successful in the past and where it has failed, research has associated the failure with a lack of knowledge of the market(s). George et al. (2012, p.671) define inclusive innovation as “the development and implementation of new ideas which aspire to create opportunities that enhance social and economic wellbeing for disenfranchised members of society.”

George et al. (2012) describes inclusive innovation as a process and performance outcome, which are two different things. This implies that inclusive innovation includes innovations that can fail to achieve the desired outcomes. Inclusive innovation is a growing practice globally. Large multinational companies around the world are looking into operating the inclusive innovation markets. The interest is growing amongst developed countries to tap into these markets. There is interest in understanding the BOP and its products. To date, some companies have implemented inclusive innovation successfully, and some companies have failed (Thapa, 2013).

There is a need for companies to get the right knowledge and context when embarking on inclusive innovation. In the past, lack of knowledge has led to companies experimenting with inclusive innovation and this trial-and-error approach resulting in failures. Some of these failures were due to lower adoption of the innovations. These experiments bring a strong case for a formal and systematic approach for inclusive innovation and market generation in the BOP context (Thapa, 2013).

2.2.5 Mobile banking

Mobile banking is described as the accessing of banking services such as bills payments, money transferring, and verifying account balances using a mobile device (al Afeef et al., 2012). According to Shaikh and Karjaluoto (2015), researchers use terms such as m-banking, m-finance, m-transfer, m-payment, or branchless banking to refer to mobile banking.

According to Lee and Chung (2009), in mobile banking, a SIM card acts as the identifier of the person using the service instead of a national identity document (ID). This makes it easier for telecommunications companies to penetrate this market. It is the “know your customer regulations” for anti-money laundering reasons that remains key in the issuance of mobile banking solutions in making identity of the user known and verified (Rao, 2013). A know your customer (KYC) exercise is needed for money laundering avoidance by discouraging tax avoidance through anonymous accounts (Ivatury, 2009).

Through awareness, mobile banking services can be availed, and the users made financially literate. In Kenya, M-PESA mobile banking solution is a great example of a mobile banking innovation being used by the BOPs (Mas, 2010). The BOPs have been afforded convenience and ability to transact safely with trust, with the banking solution providers at a reasonable cost (Dashi et al., 2013). Financial inclusion includes all solutions focused on bringing formal financial products and services to many. The related activities therefore include participants in the formal and semi-formal sectors.

2.2.6 Mobile Banking in Africa

Africa has been experiencing a 20% growth in internet users yearly in the last decade because of increasing mobile data bandwidth and affordable mobile phones (Ivatury, 2009; Kemp, 2018). The social media users and online user times has been increasing by 13% in 2017 (Statista, 2018). The use of mobile applications has been increasing due to better connection speeds, with at least 60% being classified as broadband mobile connections in Africa (Kempson et al., 2004). Broadband connection is important for fast data speed, having said that, mobile banking solutions can be evoked on telecommunication networks which do not need either broadband connectivity or internet connection (Tobbin, 2012).

With very promising mobile penetration prospects in Africa, mobile banking for BOPs remains largely unexploited (Chaia et al., 2009). The survey by GSMA indicated that most individuals remaining without mobile connection are rural poor youths and women (GSMA, 2016). The high digital illiteracy, lack of local content and high mobile connection costs were reported as the main barriers for BOP groups mobile penetration in Africa (Kempson et al., 2004).

Poor people face a lot of financial risk factors when handling money, which includes natural disasters, death, or serious illness, receiving daily wages or seasonal income from their farm produce (Collins et al., 2009). The mobile banking role is thus to assist the poor and the vulnerable to manage their households and plan for education, food, health, shelter, or unforeseen circumstances (Upadhyay & Jahanyan, 2016).

Studies by Beck et al. (2015) showed that convenience, cost, ease of use and perceived usefulness, are the most vital factors that affects mobile banking usage. Regarding the numbers of mobile banking users, Demirgüç-Kunt et al. (2015) noted that 2% of adults in the world use mobile money accounts and 12% in the sub-Saharan Africa. This shows how well innovation has been adopted in SSA. To further support the numbers, 20% of adults in East Africa have mobile money accounts (Demirgüç-Kunt et al., 2015).

For the mobile banking industry, Karnani (2012) determined that co-creation was used to create very sustainable and profitable markets. Customer feedback contact and building trust were some of the approaches used in the co-creation to gain customer knowledge. The distribution strategies for items such as prepaid cards through accessible retailers helped in avoiding distribution costs (Karnani, 2012). However, Rashid and Elder (2009) found how that mobile phone technology and communications companies have had an impact in the lives of the BOP. The business models for developed markets were adapted to cater for the BOP markets. This was achieved by using local knowledge and customer insights.

2.2.6.1 The ICICI Bank case

ICICI bank is the second-largest banking institution in India. The bank's strategy was fully based on recognizing and acting on the potential in the Bottom of the Pyramid. Innovative business models were developed, aimed at improving the capacities of the poor to allow them to participate in the economy (Prahalad & Hart, 2002).

Today, in the poor communities, there are way and means in which people can access some form of credit informally. There are savings club, credit associations and other establishments that are not regulated or connected to the banking industry. Low-income customers go to these establishment to borrow or sometimes save money. The repayments methods are worked out to suit their financial position (Prahalad & Hart, 2002).

ICICI saw an opportunity in this market and decided to develop a business model that is scalable and commercially viable. The bank outlined its strategy as that of penetrating the rural areas, to prepare properly for the market and to be supportive of the bottom of the pyramid. The distribution and entry points were thought out innovatively.

The ICICI strategy of purchasing the Madura bank, which served the rural poor, was a catalyst in realizing the business model of serving the poor (Prahalad & Hart, 2002). The strategy introduced programs for savings and microfinancing. This approach changed lives and accelerated growth for the bank. The bank continued to implement other innovative products for BOP such as mobile ATMs, rain insurances and other products relevant to the market. In this way, the bank positioned itself as a socially conscious corporation (Prahalad & Hart, 2002). This talks to an organization being able to adapt its business model, create markets and innovate with an informed strategy.

Other services such as PayPal, Amazon, and Google offer payments services with increase competition in the banking industry (Shaikh et al., 2017). In South Africa, mobile banking is offered mostly by traditional mainstream banks. An example of this would be that of Standard bank, in conjunction with MTN, implemented MTN banking. Absa implemented a wireless internet gateway for SMS platform in banking. The distribution or representation of wealth and the available means to create wealth in a country can be shown in the form of what is an economic pyramid (Prahalad, 2006).

In the context of banking for the rural poor, the social impact of mobile banking can be related to the earning potential of the people living in rural areas, how they consume their earnings and how they socially relate to savings as a banking concept. In addition, the social misconception that the sole purpose of a mobile phone is communication is gradually changing. Mobile banking brings about a social change, whereby banks and mobile network providers need to understand the rural poor's banking needs and address them by increasing the presence of mobile banking in rural areas of South Africa (Brown & Molla, 1970).

2.3 BENEFITS OF MOBILE BANKING INNOVATIONS

The main benefit of mobile banking is its ability to counteract the traditional banking downsides of physical banking infrastructure which is manpower dependent and time consuming (Ammar & Ahmed, 2016). An individual can access mobile banking services from anywhere without a physical visit to a bank, which is why it is sometimes referred to as branchless banking (Beck & Cull, 2013).

2.3.1 Convenience and accessibility

Studies in West Africa revealed that low-income groups that are using mobile banking find it to be convenient (Baptista & Oliveira, 2015). Studies by Mlitwa and Tshetsha (2012) in North Africa observed the benefit of accessibility. Similarly, a Zimbabwean study by Mago and Chitokwindo (2014b) found accessibility as a benefit of using mobile banking innovations. Individuals can thus access mobile banking services easily and quickly, conveniently, and less expensively for the poor to afford.

2.3.2 Promotion of financial inclusion

According to Mmolainyane and Ahmed (2015) in a study in Botswana, mobile banking is a current drive to financial access and development. Soederberg (2013) observed that financial inclusion through mobile banking is an important tool for the promotion of stability and growth whilst reducing poverty. In addition, economic growth is possible with sufficient financial system which has become an important mainstream economic development thinking (Pitta et al., 2008). Mobile banking invariably captures the unbanked and complements the traditional banking especially in rural areas. Additionally, NGOs have a platform to remit financial aid to the needy in the BOP societies (Ivatury & Mas, 2008).

2.3.3 Reduced inequality and poverty

The findings from the study in Ghana showed an improvement in the economic well-being of people who use mobile banking (Hinson, 2011). Findings from another study across 49 countries showed mobile banking's capabilities to reduce poverty and inequality levels (Asongu, 2014a). The low-income groups find it difficult and expensive to save resulting in most of them failing to invest and accumulate money (Khavul & Bruton, 2013). Thus, cheaper financial products that poor people can access were created on mobile banking platform to enable them to start new businesses (Essegbey & Frempong, 2011). According to Khavul and Bruton (2013), mobile banking innovations enabled job creation through agent commission-based systems.

2.3.4 Facilitation of economic transactions

According to Ivatury and Mas (2008), mobile banking permits low value transactions without excluding low-income segments. Mobile banking innovations now permit anyone to make savings and payments (Rao, 2013). In Kenya, the M-Pesa mobile banking system was founded on a daily small cash management system and not on large cash amounts (Mbiti & Weil, 2011).

Demombynes and Thegeya (2012) showed that M-Pesa can facilitate savings and pay interest whilst being a secure and simple financial tool which the poor can use. In addition, studies in East Africa by the Kikulwe et al. (2014), found that mobile payment innovations across markets are continuously expanding and developing, as new business models and new technologies are emerging, as well as extending to low-income groups. Mobile banking enables less handling of cash, thus providing better financial security for the poor (Van der Wansem, 2013).

2.4 CHALLENGES OF MOBILE BANKING INNOVATION

The following challenges emerged from the reviewed literature of Africa and mobile banking diffusion to BOP groups:

2.4.1 Poor mobile connectivity

According to Mago & Chitokwindo (2014a), poor network infrastructure is a barrier to mobile banking reaching poor people in Ghana, Rwanda, Sudan, Zimbabwe, and Nigeria. In rural areas, the telecommunications network coverage is very poor thus limiting people from using mobile banking services (Mlitwa & Tshetsha, 2012). In remote areas, the communication quality is grossly affected by the mobile signals which impact mobile banking transactions (Asongu, 2014a). There is a lack of prioritization by telecommunication companies due to low income and low population density in rural areas (Ammar & Ahmed, 2016). Hence, many BOPs live far away from telecommunication base stations resulting in poor signals on their mobile phones.

2.4.2 Lack of mobile banking services awareness

As held by Baptista and Oliveira (2015), lack of awareness is one of the reasons why mobile banking innovations are not reaching BOPs. Having awareness of mobile banking services amongst the low-income groups influences the number of BOPs that will adopt mobile banking services (Ammar & Ahmed, 2016). Therefore, individuals not aware of the mobile banking content, navigation capabilities, interface design lack confidence to using mobile banking services (Hinson, 2011).

2.4.3 Illiteracy

Research in Ghana, Nigeria and Sudan highlighted illiteracy as a barrier to mobile banking products usage (Ammar & Ahmed, 2016). As observed by Bankole and Cloete (2011), people in different parts of Africa are not able to read and write, therefore, they are not able to interpret and understand mobile banking solutions. In a study by Mlitwa and Tshetsha (2012) it was concluded that literate individuals appreciate and aware of mobile banking innovations than illiterate people.

In another study by Donner and Tellez (2008), lack of education and information was found to be the main reason why poor people are not adopting mobile banking innovations. This means that poorer individuals can adopt mobile banking products using awareness campaigns (Chukwumah, 2017). Studies by Devarajan and Fengler (2013) showed how educational attainment is an important factor to facilitate mobile banking acceptance by the poor. Education is regarded as a vital enabler to mobile banking usage and any lack thereof, inhibits its usage (Chavan, 2013).

2.4.4 Lack of trust

Studies by Van Deventer et al. (2017), revealed that BOPs have a lack of trust to use mobile banking products. The lack of trust in mobile banking solution emanates from perception risks in mobile innovations (Chukwumah, 2017). A lot of mobile banking trust issues lies in security fear threats (Mlitwa & Tshetsha, 2012). As observed in Kenya, people trust mobile banking agents and providers first to start using the services and without such trust they are discouraged from using the mobile platforms (Hinson, 2011).

2.4.5 Legal and regulatory frameworks

According to Mtambalika et al. (2016), there is a lack of regulations and policies governing mobile banking practices in rural areas. The inability

to produce the required documentation was regarded as a hindrance against the adoption to mobile banking products (Mlitwa & Tshetsha, 2012).

2.4.6 Cultural factors

Cultural factors identified by Baptista, and Oliveira (2015) study were namely perceived power imbalances, uncertainty avoidance and an unwillingness to accept change. A Rwanda study by Van Deventer et al. (2017) showed gender barriers, when some men forbid their wives to have cell phones. Other researchers such as Mas (2010) argued that poor people will not prefer using costly banking methods. Beck (2015) found that a small number of BOPs do not use banking products because of religious beliefs.

2.4.7 Economic factors

People within the BOP category occasionally engage in infrequent and small financial transactions (Mago & Chitokwindo, 2014b). It is expensive for banking institutions to collect and pay-out small cash amounts to BOPs using physical brick and mortar facilities. The absence of informational and physical infrastructure is unprofitable to financial institutions to provide products and services targeted for the poor people (Tobbin, 2012). However, the main benefit of mobile banking is its ability to counteract the traditional banking downsides of physical banking infrastructure which is manpower dependent and time consuming (Ammar & Ahmed, 2016). An individual can access a mobile banking account from anywhere without a physical visit to a bank which is why mobile banking is referred to as branchless banking (Beck & Cull, 2013).

2.5 THEORIES ON MARKETING ALTERNATIVES FOR THE BOTTOM OF THE PYRAMID AND INCLUSIVE INNOVATION

2.5.1 Bottom of the pyramid theory

As held by Prahalad (2005), the bottom of the pyramid (BOP) proposition is focused on fulfilling the poverty eradication social goals. It is argued by Engberg-Pedersen and Ravnborg (2010a) that the poor are perceived as victims of unfortunate situations rather than as conscious actors in circumstances that need to be improved. Prahalad (2005, p.19) believes "that the bottom of the pyramid (BOP) proposition can fulfil the social goals of poverty eradication". The BOP theory thus tries to identify people whose standard of living is unacceptable relative to the society they live in (Oosthuizen, 2008). Prahalad (2012) used a four-tier economic pyramid to represent income generating capability and wealth distribution broken down into Tier 1 (wealthy individuals), Tier 2 and 3 middle income groups and Tier 4 the low income or BOP category.

The Economic Pyramid

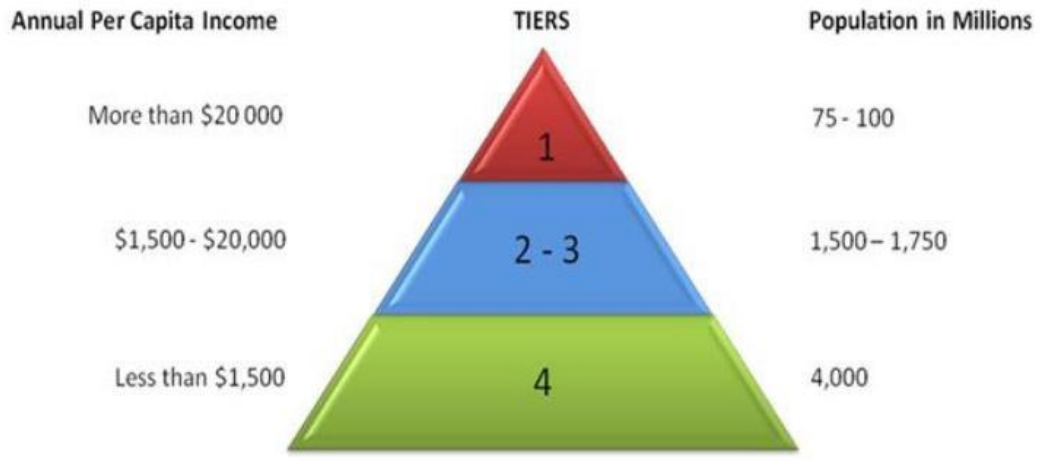

Figure 1: The Economic Pyramid

Source: Engberg-Pedersen & Ravnborg (2010b)

Figure 1 provides a graphical depiction of the World Economic Pyramid with the four consumer tiers. The BOP market, in Tier 4, represents the largest proportion of consumers in that pyramid who earn less than $1 500 per annum, based on purchasing power parity in American dollars.

Engberg-Pedersen and Ravnborg (2010, p.21) explains purchasing power parity (PPP) as the "concept that is used to equalize the purchasing power of different currencies in their respective countries for a given amount of goods and services". Pitta et al. (2008) also ascertained that the BOP markets are predominantly rural with the majority living in Africa, South Asia, Eastern Europe, Latin America, and the Caribbean.

Prahalad (2005) advises that businesses, when serving BOP consumers, need to use creative and novel approaches to turn poverty into a lucrative business opportunity that benefits all constituents involved. Prahalad (2005) also proposed that poverty alleviation is possible through the joint collaborative effort by government, NGOs, large domestic firms, MNCs as well as the poverty-stricken citizens themselves.

Prahalad and Hart (2002) argue that there exists untapped purchasing power at the bottom of the economic pyramid. Companies engaging this market can make significant profits by selling products and services to the poor, bring prosperity to them and create employment opportunities. Prahalad (2005) believes that MNCs have the resources and capabilities to effectively target the BOP market. He also emphases that it is imperative for MNCs to create new business models and strategies for marketing products to the BOP market. This can be achieved simultaneously with being profitable, eradicate poverty and thereby delivering dignity, empowerment, and selection to the BOP market and not just products.

Prahalad (2005) states that there are more than 4 billion people with a per capita income of less than $2 per day, at purchasing power parity (PPP) rates and estimates that the BOP market size is enormous at $13 trillion. Karnani (2007) and other researchers such as Chaia et al. (2009), however, contradict Prahalad's estimates, saying that it is simply an excessive overestimation and concede that, although the BOP market is indeed colossal in terms of number of consumers, it is relatively small monetarily. According to calculations by Karnani (2007), the BOP market size is merely $1.2 trillion after having used the World Bank's estimate of $1.25 per day as the average consumption of its estimated 2.7 billion globally poor people.

Prahalad (2004), in a further analysis to the BOP theory, argued that those in business serving the BOP segment ought to use novel and creative methods to help transform the poverty problem. This is possible with government interventions and other organizations' joint efforts to alleviate the circumstances of poverty-stricken citizens (Tobbin, 2012). It has been realized by businesses operating in developing countries in East Africa that engaging the BOP market can generate reasonable profits (Shih et al., 2010)

However, as argued by Omwansa et al. (2013) there is reluctance with some businesses that have a general assumption that people in poverty have affordability issues and hence, cannot consume their services and products. The BOPs are regarded as unable to buy the products and services offered to them. The whole market is considered a high-cost structure which cannot bring meaningful return for innovations employed. Mlitwa and Tshetsha (2012) argued that large businesses have capacity to effectively serve the low-income groups with latest innovations by creating unique business strategies and models that both eradicate poverty and brings profits whilst delivering products with dignity and empowerment.

In 2005, the BOP market was estimated to be more than US$13 trillion and made up of at least 4 billion people with a purchasing power parity of US$2 per day (Fafchamps & Shilpi, 2008). It is also argued that the poor are always ready to accept innovations that deal with their desires for quality products (Luttmer, 2005). However, The BOPs' notable challenge is affordability since a bigger amount of their income is spent on basic commodities (Banerjee & Duflo, 2007).

2.5.2 The IICAF Framework

The inclusive Innovation Context Analysis Framework is taken from the work of Thapa (2013) on Understanding the Base of the Pyramid and Inclusive Innovation Context Analysis Framework). The framework is used in market development process, whereby companies are developing new product or services for existing consumers or new ones. (Thapa, 2013). For the BOP, new innovations created for new markets would need to go through a new market development process to help the companies understand their customers better. This goes hand in hand with the development of the business model for such new products. To achieve this new market generation, a well-defined process is essential to guiding companies in creating products.

The methodological framework provides important guidelines that are used in the inclusive innovation process. The framework combines other processes and frameworks that describe the inclusive innovation processes, characteristics, and strategies (Thapa, 2013). This can be used by companies, organizations or existing markets that are looking into entering the BOP markets. The framework can assist in identifying the right BOP market. This in turn would help the organization to create the right product that addresses the consumer's needs.

The IICAF has six steps, namely, the strategic phase, idea generation, market scanning, focused study, marketing mix, and scaling (Thapa, 2013). For the purposes of this study, we are focusing on the Market

Selection process part of the IICAF, which is divided into two stages being:

- Market scanning (where a group of attractive markets are short-listed)
- Focused study (where the most optimal market of entry is selected).

This is illustrated by Figure 2 and Figure 3 respectively (Thapa, 2013).

Market Scanning

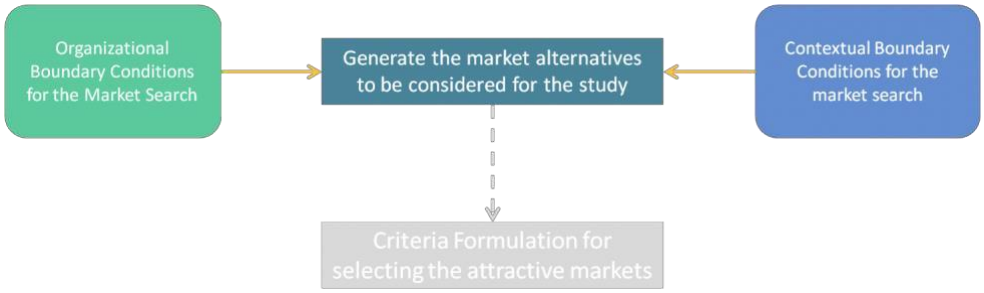

Figure 2: Generating Market Alternatives (Scanning)

Source (Thapa, 2013)

In the market scanning phase (process), businesses or companies can identify opportunities based on the needs and availability of such products. The company decides on factors such as region to operate in, type of innovation and customer base. In the case of Africa, a company can decide to operate in a specific region because of factors such as language, specific culture, and infrastructural conditions. These boundaries contribute to the generation of market alternatives for consideration.

One example of this kind of market is that of Kenya. The M-Pesa product, which did not take off in South Africa as it did in Kenya, is an example of

market scanning. The rate of adoption was so high that the bank realized that and created an alternative that suits the conditions of that region.

Focused Study

Selection of Attractive Markets Sources

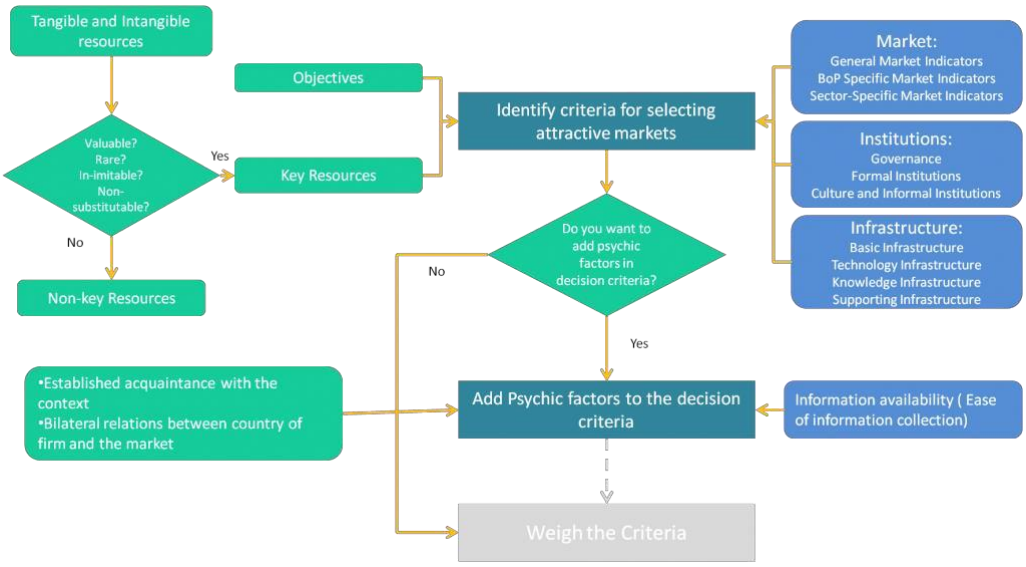

Figure 3: Formulation for Selection of Attractive Markets

Source (Thapa, 2013)

For selecting attractive markets, companies must be decisive about a criterion on which the innovation is based. The objectives must be clearly defined. This helps the company in terms of making decisions in selecting new markets. The other consideration in selecting attractive markets is for the company to investigate its existing resources that can be leveraged in the creation of the new market. An example would be that of a telecommunications company such as MTN. The available infrastructure allows the company to venture into the mobile banking

market for the BOP as it already has a customer base for mobile phones. This puts the company at an advantage in the market.

2.6 THEORETICAL, LEGAL AND REGULATORY FRAMEWORKS FOR BOTTOM OF THE PYRAMID AND INCLUSIVE INNOVATION

The following bottom of the pyramid and innovation frameworks were found in literature:

2.6.1 Diffusion of Innovation Theory (DIT)

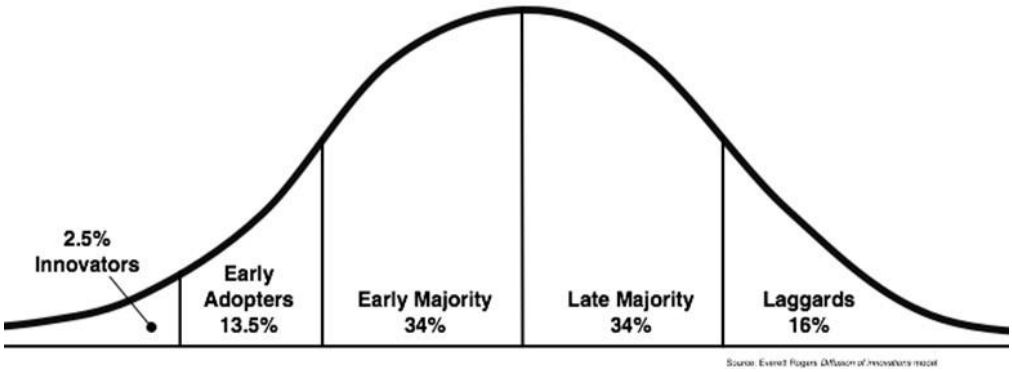

Figure 4: The Diffusion of Innovation Theory

Source: (Rogers, 1961)

The diffusion of innovation theory was developed by Rogers in 1961. According to Manji (2010), the diffusion of innovation theory is centered on the conditions which decrease or increase the likelihood that a new practice, product, or idea is chosen by individuals of a culture. It has been argued by Devarajan and Fengler (2013) that DIT suggests the influence of interpersonal contact and media on the judgement and opinion to new innovations such as mobile banking.

It is important to note that DIT suggests four necessary stages when one is adopting new technologies namely consequence, time, diffusion, and intervention flowing in a network style (Donner & Tellez, 2008). According to Rao (2013), the categories of adopters of new innovations are defined as laggards, late majority, early majority, early adopters, and innovators. These categories reflect the level at which innovation is accepted and used. Very few individuals belong in the innovator group at 2.5%, early adopters (13.5%), early majority (34%), late majority (34%) and laggards at 16% (Rao, 2013). The DIT has been utilized with success to understand innovation within marketing, social work, criminal justice, public health, agriculture, communication but not in mobile banking (Ivatury, 2009).

2.6.2 The 6A Model for serving BOPs'

The 6A model was proposed by Anderson and Billou (2007), used by businesses when they want to effectively implement innovations to low-income groups. The proposed 6As are useful for businesses with intentions of achieving profitability and growth in BOP markets. In this model, a business should focus on advertising, active engagement, awareness, acceptability, availability, and affordability.



Figure 5: 6A Model

Source: (Anderson & Billou, 2007)

2.6.1.1 Availability

According to Anderson and Billou (2007), availability is the extent to which customers are readily prepared to buy and use a service or product. The main challenge in BOP markets is the market fragmentation, which makes distribution of products very difficult (Chavan, 2013). Hence, innovations to BOPs that solve accessibility of services and products will be successful to introduce (Khavul & Bruton, 2013).

As mentioned by Pitta et al. (2008), availability of services and products in these fragmented markets can be achieved through partnerships with local entrepreneurs and small businesses in rural area. Rao (2013)

gave an example of how Vodacom discovered cell phone renting entrepreneurs in rural areas through tracking high volumes of calls and decided to offer these individuals business opportunities to operate bigger phone shop kiosks in West Africa. BOP customers are very conscious when it comes to travelling for products. Therefore, accessibility and availability are very important for the BOP market. Companies would have to come up with innovative distribution strategies and channels to reach their customers.

2.6.1.2 Affordability

Shaikh and Karjaluoto (2015) defined affordability as the extent to which a firm's services and products are affordable to low-income individuals. Affordability is achieved when businesses rationalize their cost structure through simplification of services and products, amongst other cost reduction measures (Mlitwa & Tshetsha, 2012). Low-income individuals consume in small quantities. Businesses that bulk-break and sell in small packages in numerous distribution channels rather large packages are more likely to succeed in BOP markets. Companies need to come up with pricing strategies that accommodate the BOP.

2.6.1.3 Acceptability

Acceptability is the degree to which customers sell, distribute, and consume a service or product (Mas, 2010). According to Pankomera and Van Greunen (2018), there is willingness on part of the customers to continue consuming the service or product if it meets their needs and its advantage is easily recognized. For successful implementation of innovations in BOPs, Alafeef et al. (2007b) argued for the need for relevant innovation designs that are value oriented with ability to deliver

financial independence, self-esteem, and value for money. Thus, services with more than one usage are most likely to be well received by BOP individuals (Pfeiffer et al., 2007). Knowing the social and cultural environment of the consumers is important. Products must be accepted and used by the BOP in their daily lives. This makes the adoption and diffusion viable for companies in these markets. This can also create an opportunity for some of the BOP consumers to become distributors of such an innovative product (Anderson & Markides, 2007).

2.6.1.4 Awareness and advertising

According to Beck (2015), awareness is the degree to which customers are conscious of the existence of specific services and products. Advertising is the most important marketing tool used to convey messages to consumers about a company's services or products (Pankomera & Van Greunen, 2018). However, it is argued by Omwansa et al. (2013) that the communication to the poor is difficult because of low literacy rates as discussed earlier on challenges. Problems of language and cultural differences makes conventional advertising difficult, without ensuring alignment to cultural, linguistics and educational level aspects (Luttmer, 2005).

2.6.1.5 Adaptability and active absorption

As held by Oosthuizen (2008), product or services adaptability is vital to make sure there is an immediate appeal for the product. Pfeiffer et al. (2007) also argued that active absorption of services or products involves the active participation of BOPs in the sale and distribution of the product or service. The BOPs involved act as good testimonials to potential customers, achieving trust in the product or service (Manji, 2010). When an innovation is still new, businesses can utilize the first

mover advantage by quickly exploiting the BOP market before others and achieve brand loyalty and profitability in this business segment.

2.7 CONCEPTUAL FRAMEWORK FOR THE STUDY

The figure below shows the conceptual framework that guides the study. The study is focused on exploring the impact of inclusive innovation on BOP mobile banking as affected guided by the challenges, legal framework, benefits, and market alternative factors.

These factors assist in gaining a deeper understanding of how mobile banking innovations can be used to improve the plight of BOPs to access financial services. Therefore, the challenges, benefits, and legal and marketing alternatives factors are assessed to allow for better recommendations within the South African context. The conceptual framework for this study is shown diagrammatically below:

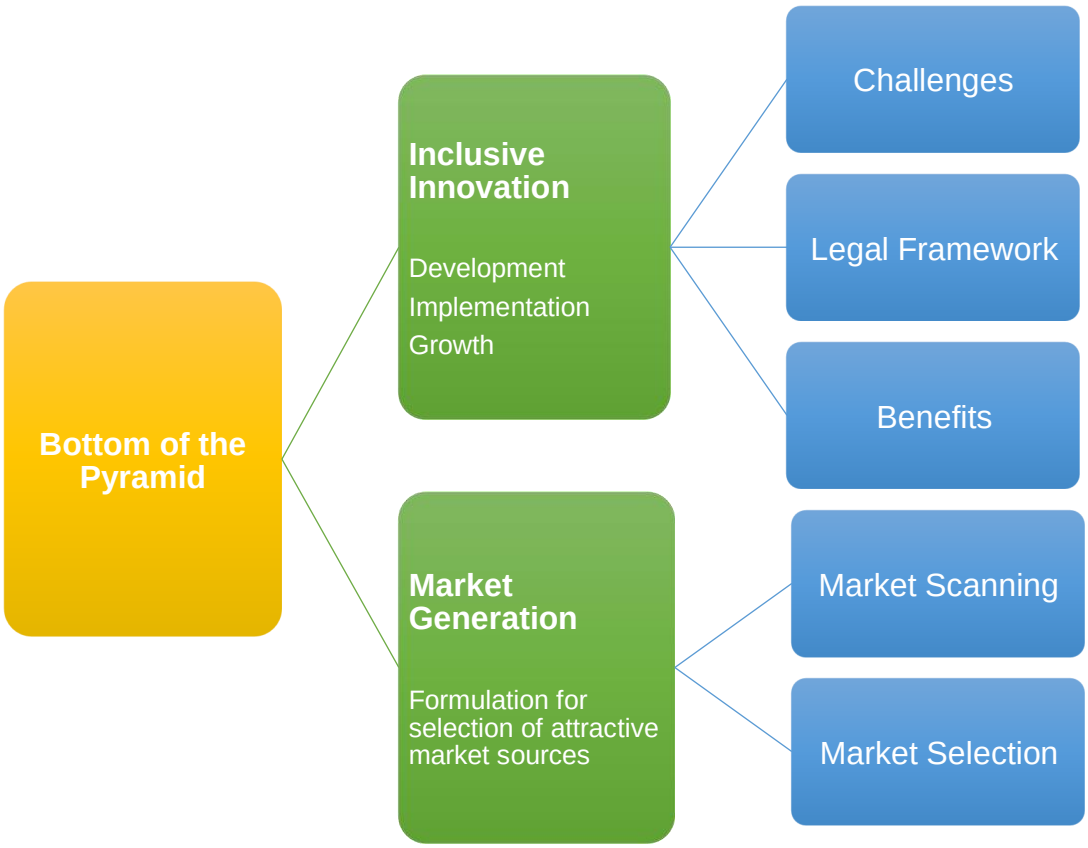

Figure 6: Conceptual Framework

Innovation theories and framework exist. These have helped in implementing products, business models and change industries. The same effort is needed in growing the research and literature for inclusive innovation (Prahalad, 2006). Therefore, methodologies and realist frameworks are needed to explore the BOP markets since developing countries nowadays have capabilities to fight poverty. Inclusive innovation markets do not necessarily have to be for the BOP to consumer products. These markets can also be created in a way to empower and educate the BOP to be entrepreneurs (Prahalad, 2006). The initiatives would not only alleviate poverty but also create sustainable BOP markets.

The construction of a conceptual is focused on understanding how companies can generate market alternatives, which helps create a clear criterion for selecting attractive markets. This is combined with the selection of attractive market process which helps the company identify existing resources that can be used to create new markets. The framework incorporates concepts to support the analysis of banking in BOP markets in South Africa.

2.8 CONCLUSION

The literature review was carried out to support the definition and explanation of mobile banking and BOP in the context of inclusive innovation. Mobile banking usage trends and critical factors in Africa were presented, and that enables an assessment of the need for mobile innovations for BOPs. The theories reviewed showed that the business case for implementing innovations in low-income segments, and gaps in the literature reflect why firms do not exploit the low-end markets. Challenges with adopting innovations in low-income market segments present opportunities for firms to re-look at their strategies for market scanning and selection. The market generation theories show how market generation and attractive markets are realized and adopted. Whilst inclusive innovation of BOP market has success in other jurisdictions, this study explores how it is relevant within the South African context through the examination of the benefits and challenges of inclusive mobile banking innovation development for BOPs. The study also explores the effects of available mobile banking marketing alternatives that assist to understand the needs of BOP customers. Furthermore, the study investigates the effective mobile banking legal framework necessary for inclusive innovation implementation for BOPs.

CHAPTER 3: RESEARCH STRATEGY AND METHODOLOGY

3.1 INTRODUCTION

The research strategy, research design, sampling method, data collection instrument, data analysis is described and justified in line with the aim and purpose of the study. In addition, the limitations, ethical considerations, reliability, and validity are explained and discussed.

3.2 RESEARCH STRATEGY AND DESIGN

To guide the data collection and analysis process a descriptive research design and a survey strategy was adopted. The choice for a descriptive design was motivated by the need to observe and describe the research subject without interfering with the process. Hence, a questionnaire was circulated amongst individuals and the result analyzed to arrive at conclusions. A survey strategy was regarded more suitable for this study since they permit a numeric or quantitative explanation of opinions, attitudes, or trends of a population by researching a sample (Saunders et al., 1997). A survey strategy can be longitudinal or cross-sectional study (Babbie & Mouton, 2001).

The choice of cross-sectional survey strategy was most appropriate to permit the collection of and analysis of numerical data which captures data of a population within a single timeframe rather than extended periods in longitudinal surveys. Schriesheim and Hill (1981, p.24) noted that it is “sensible to mix negatively and positively worded items in psychological variables to reduce acquiescence response bias when constructing a questionnaire”. However, there must be valid arguments regarding biasness or confusion on negatively worded items.

3.3 SELECTION OF PARTICIPANTS

3.3.1 Population

Zikmund (2003, p.43) defines a “population as any entire group of college students, store, companies, or individuals that share a set of characteristics”. The research data will be collected from various professionals in South Africa. This study aspires to attain a representative sample as restricted by the choice of geographical location i.e., Johannesburg, the central hub of bankers and regulators. The focus of the study is to attain a good representation of bankers and regulators.

3.3.2 Sampling

The study adopted convenience sampling in selecting professionals who are based in South Africa to yield 120 participants. The participants were chosen from middle management to top management level to make sure the respondents are knowledgeable of all operational and strategic information regarding the research subject. This sample size may not be a true picture of the entire professional population. This is regarded as immaterial since it not an aim to generalize the outcome of the study. Rather, it is the intention of this study to provide a basis for further large-scale surveys on the research subject to a much bigger population. Convenience sampling is less costly to manage and allows ease of access and the closeness of participants to the researcher (Fafchamps & Shilpi, 2008).

3.4 RESEARCH METHODOLOGY

A quantitative research approach was adopted for this study. A quantitative approach places emphasis on data quantification in data analysis as well as data collection (Fafchamps & Shilpi, 2008; Bryman & Bell, 2012). The quantitative choice was encouraged by the need of the numerical data that could be interpreted using statistical means to answer the study questions.

When using a quantitative method, variables and concepts can be operationalized into visible indicators that can be measured through a questionnaire and analyzed statistically.

3.4.1 Data Collection and instrument

This study uses a self-completion research questionnaire (Annexure B).

The research questionnaire is made up of two sections. The first section addresses the demographic profile of the sample while second section addresses the five explanatory dimensions (as listed in the conceptual framework), namely:

- Challenges of mobile banking innovation development
- Legal framework on inclusive innovation implementation for BOPs
- Benefits of mobile banking innovation development of BOPs
- Market scanning process for businesses to identify opportunities based on the needs and availability of products for BOPs
- Market selection based on attractiveness and criterion on which the innovation is based.

The questionnaire had a Likert scale with five points namely strongly disagree (coded as 1); disagree (coded as 2); neutral (coded as 3); agree (4); strongly agree (5). The structure of the research instrument is presented in Table 1 as follows:

Table 1: Questionnaire Breakdown

Factor	**Number of items**
Demographics	5
Benefits and challenges	16
Marketing Alternatives	3
Legal framework	3

As held by Zikmund (2003), utilizing a Likert scale allows participants to express their point of view (using severity scale) by either agreeing or disagreeing with the raised statements

3.4.2 Pre-Test

The pre-test allows a chance to check whether there are any biased or ambiguous questions (Babbie & Mouton, 2001; Zikmund, 2003, p. 312). The pre-testing research was sent to via a link in an email to six respondents. The first link on email sent to the respondents was to determine if the length of the instrument is acceptable (not too long), understanding use of scales and the terms. All the responses were noted, and any changes adjusted to the questionnaire. The second link in the email was sent with corrections that were taken into consideration from the first study. After completing the two pilot phases, the survey was circulated to the proposed population.

3.4.3 Distribution of the survey

Prior discussions were conducted with respondents before completing the survey (Annexure A). The purpose of the discussion was to give some context about the research and its purpose. The survey was administered by the researcher in the form of a link, sent via email. The link directed respondents to the survey which was in a Google forms format.

3.5 LIMITATIONS OF THE STUDY

The research is restricted to professionals in South Africa only. This might influence the generalization of results for South Africa. The study uses English as a business language on the survey and questionnaires. This can create a level of confusion and misunderstanding of concepts when some of the participants try and answer questions. In the South African context, English is not the only official language.

3.6 RELIABILITY AND VALIDITY

The study was only done after ensuring the research instrument met the reliability and validity tests described in the following sections:

3.6.1 Validity

Validity is regarded as an important test since it determines whether a questionnaire is measuring what it is intended to measure (Saunders et al., 1997). For this research to meet validity tests, the study considered face validity by ensuring the questions in the questionnaire are relevant to the participants.

In addition to face validity, the study considered content validity by ensuring the questionnaire has sufficiency, balance and significance. The questionnaire was thus divided into sections as guided by the conceptual framework and using construct validity the scale reasonable of the questionnaire was carried out. Construct validity was considered as important so that the study remains objective since it made sure instrument is measuring the correct trait or theoretical construct that it is expected to measure (Babbie & Mouton, 2001).

3.6.2 Reliability

Reliability was considered an important test throughout the research process by making sure stability and dependability were maintained. The study made sure there is repeatability or constancy of the phenomenon being measured by carrying out a pre-test. In addition, the questionnaire was subjected to the

Cronbach's alpha test to ascertain internal consistency by checking the interrelatedness of the constructs. An alpha of 0.77 was regarded as high to imply an adequate reliability level of the research instrument.

3.7 ETHICAL CONSIDERATIONS

The study research process followed the Wits ethics process protocol for research by ensuring the respondents were free from harm, and that anonymity and confidentiality were maintained. The respondents were not asked to write their names on the questionnaire and their participation in the study was purely voluntary without any promise for financial gain. The data was stored on a flash drive encrypted with a unique password preventing unauthorized access.

3.8 SUMMARY

The research process undertaken was described, discussed and justified. In addition, the research design, research strategy, sampling process, data collection and data analysis method were explained, and the approach to numerical data collection and analysis was described. The limitations, ethical considerations, reliability and validity factors were discussed and highlighted as they affect the relevance and quality of the study. The following chapters present the data findings and the analysis of the findings.

CHAPTER 4: PRESENTATION OF FINDINGS

4.1 OVERVIEW

The previous chapter explained the methodology that guided the primary data collection and analysis of the study. The study specifically explored these in terms of the IICAF framework, BOP theories,6 As, technological, economic, sociocultural, and legal effects. This chapter provides findings of the study based on the survey that was carried out.

4.1.1 Brief introduction

The aim and interest of the research is to ascertain the impact of inclusive innovation and mobile banking on the bottom of the pyramid (BOP) in South Africa. The survey data results collected are presented in the next sections. The demographics of the respondents and the results are presented using the research questions highlighted in Chapter One, namely:

- What are the benefits and challenges of **inclusive mobile banking innovation development** in relation to BOPs?
- What are the factors that inform **market alternatives** for mobile banking innovations?
- What is the effective **mobile banking legal framework** necessary for inclusive innovation implementation for BOPs?

4.1.2 Background Profile of Respondents and Process Followed

The profile of the respondents was provided in the first part of the questionnaire. It focused on the demographic data of respondents which

included gender, level of education, age and level of seniority. A total of 70 questionnaires were distributed by email and 60 responses were obtained to achieve an 85.7 percent response rate. The data was captured and analyzed using the Statistical Package of Social Sciences (SPSS) and Microsoft excel, to produce means, standard deviations, frequencies and graphs.

4.1.1.1 Gender

The respondents' gender is presented in Figure 7 as follows:

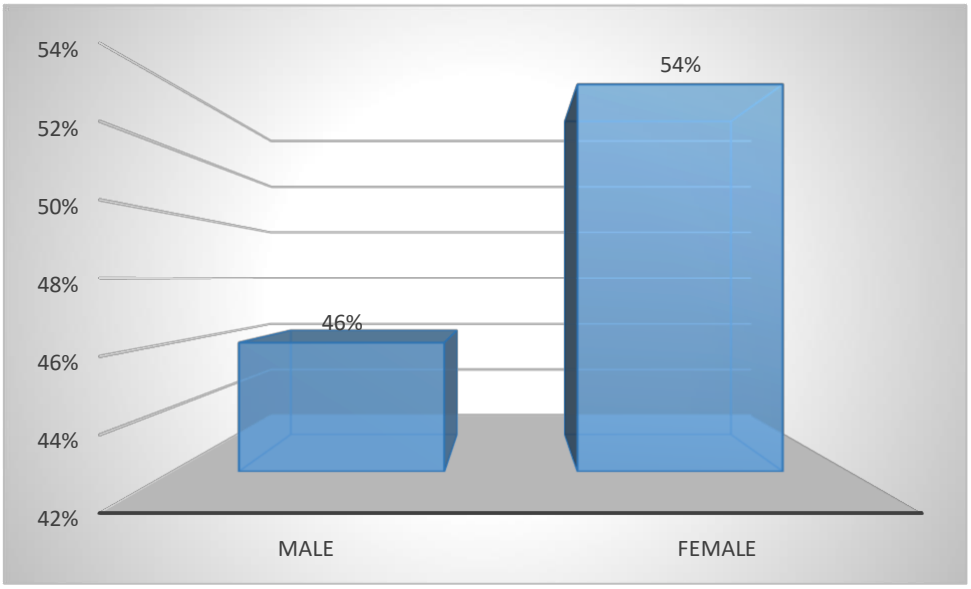

Figure 7: Respondents Gender

As shown in Figure 7, 54 percent were female participants and 46 percent were male participants. Gender refers to an individual's identification in terms of sexual status, i.e., male or female (Munisi, 2015). This gender disparity was considered irrelevant as both genders showed the ability to address the topic posed to them.

4.1.2.1 Education

The education level of the respondents is presented in Figure 8 below:

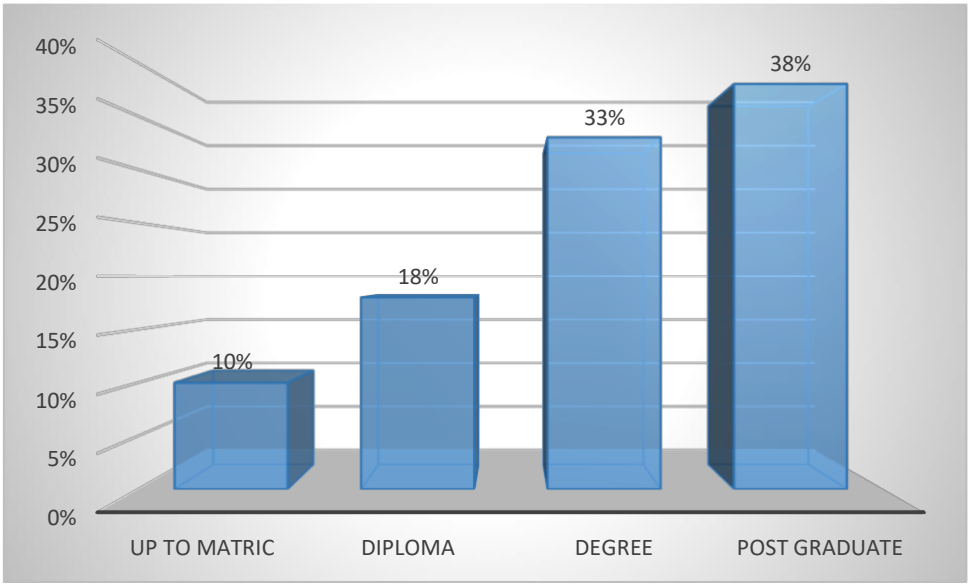

Figure 8: Respondents Education

Of the 60 participants, 38 percent had post-graduate qualifications, 33 percent had undergraduate degrees, 18 percent had a diploma and 10 percent had at least a Matric certificate. This shows a knowledgeable majority that could easily comprehend the banking mobile innovation.

4.1.2.2 Age

The respondents' age is presented in Figure 9 below:

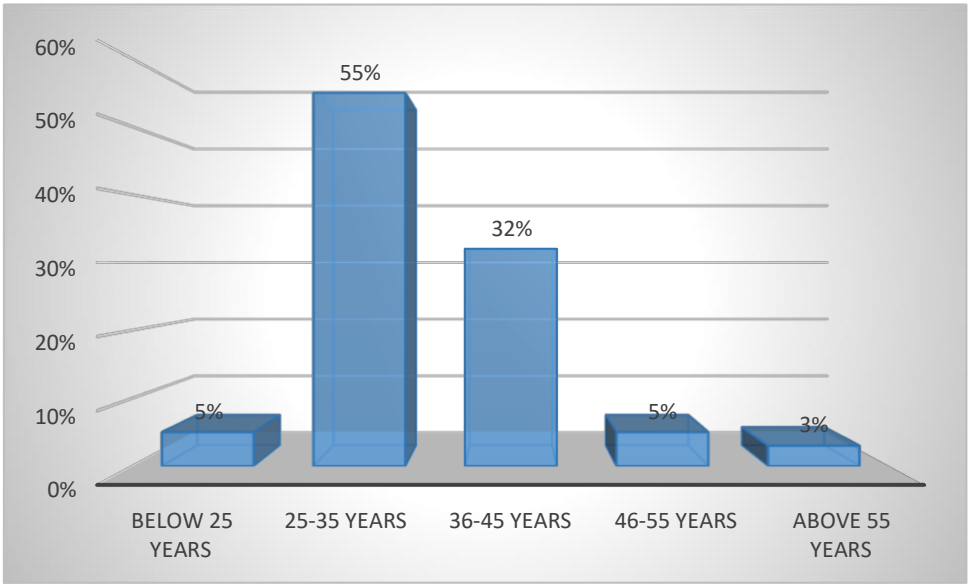

Figure 9: Respondents' Age

Five percent of the respondents were below the age of 25, **55 percent of the respondents were between the ages of 25 and 35,** 32 percent of the respondents were between the ages of 36 and 45, five percent were between the ages of 45 and 55 and three percent were above 55 years of age. Age refers to the length of time that a person has lived, expressed by the number of years. The respondents' ages are reflective of the users of mobile banking innovations, the highest percentage being between the ages of 25 and 35 years. This is the economically active and working age that potentially uses mobile banking in their daily lives.

4.1.2.3 Race

The race of the respondents is recorded below in Figure 10:

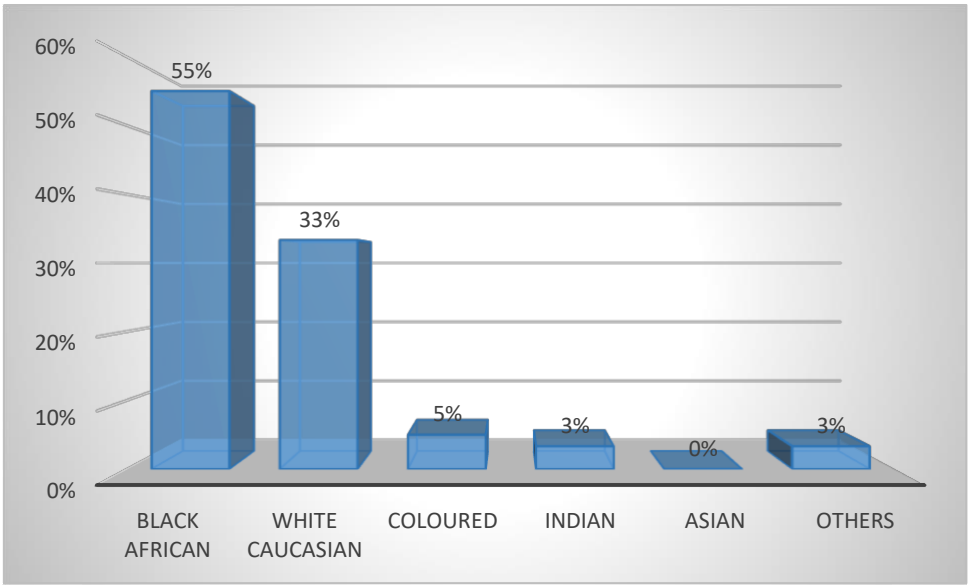

Figure 10: Respondents' Race

Fifty-five (55) percent of the respondents identified themselves as blacks, 33 percent as white, five percent as colored, three percent as Indians, and the other remaining three percent were from other races. This shows that the study was fairly racially representative.

4.2 Benefits and challenges of inclusive mobile banking innovation development for BOPs

Mobile banking can assist banks to increase operational efficiencies and reduce costs, besides giving a platform for offering value added services to the customer. However, there are also different factors that brings challenges to the industry and the customers using the mobile banking innovations.

4.2.1 The following responses on benefits of mobile banking innovation development of BOPs are presented:

4.2.1.1 Convenience

For mobile banking customers, convenient is the ability to access their bank accounts, make instant payments, receive money and where applicable, track investments regardless of where you are. Mobile banking means having the ability to do banking at a time and place that is convenient to you as a customer. Value proposition of mobile banking is the fact that it is an “always with-you” device.

On the question of convenience, the respondents answered as presented in the Figure 11 below:

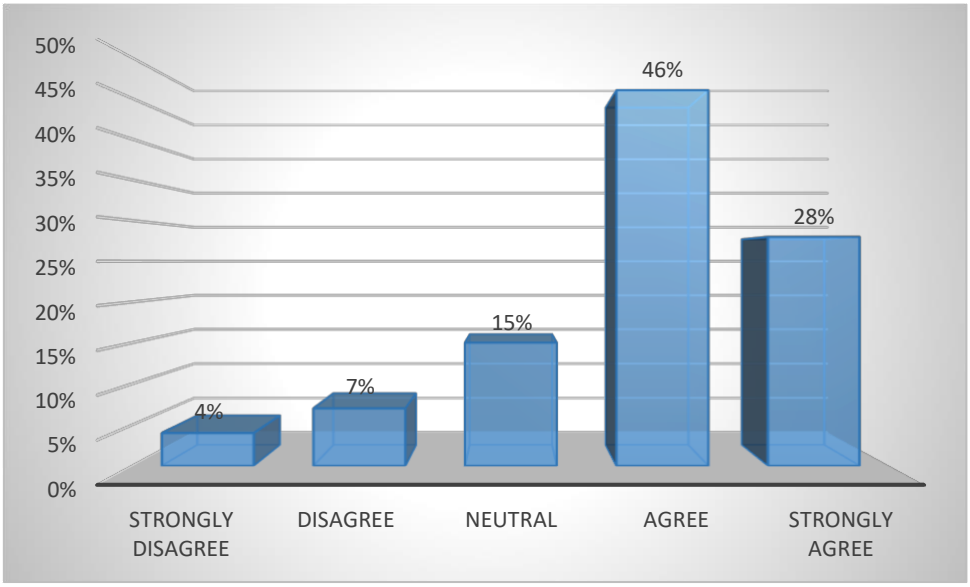

Figure 11: Convenience

Figure 11 shows that 46 percent **agreed** and 28 percent **strongly agreed** that mobile banking brings convenience for BOPs. However, 15 percent remained neutral whilst seven percent and four percent disagreed and strongly disagreed, respectively.

4.2.1.2 Accessibility

Accessibility for mobile banking customers can be translated into customers being able to perform majority of the banking activities outside of bank branches, without physical contact and agents, unless it's cash withdrawal. Accessibility and availability are important for the BOP market, which means banks have to focus on innovative distribution strategies and channels in order to reach BOPs.

The responses on benefits of accessibility are presented in Figure 12 below:

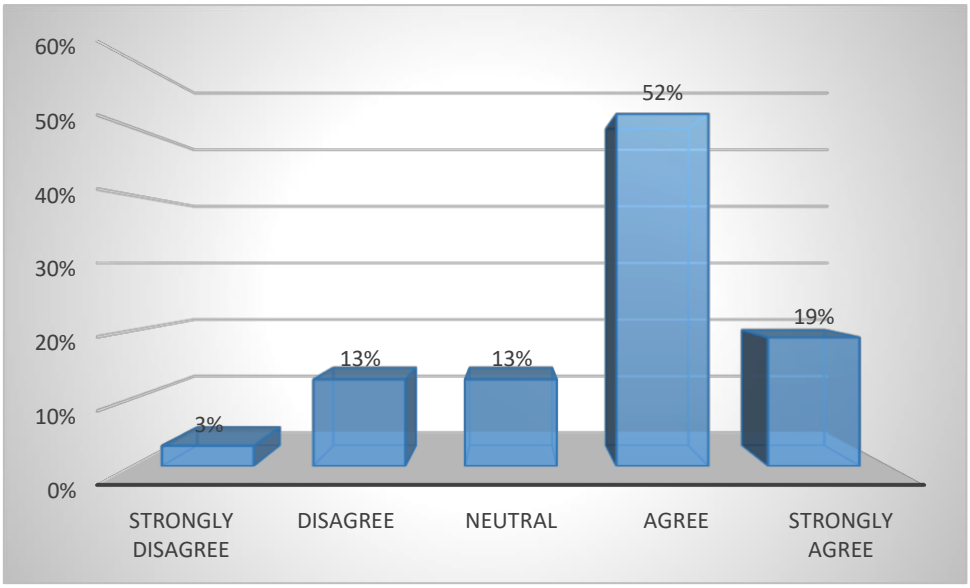

Figure 12: Accessibility

Figure 12 shows that 52 percent and 19 percent of participants agreed and strongly agreed respectively that mobile banking innovations improves accessibility for BOPs. However, 13 percent remained neutral, 13 percent disagreed with this notion and three percent strongly disagreed.

4.2.1.3 Financial inclusion promotion

Mobile banking has a number of advantages over traditional banking methods because it breaks down geographical constraints. It offers advantages such as immediacy, security and efficiency. These instant financial services help transform the economics of service delivery, allow BOPs to participate in the economy.

The views of the respondents on the promotion of financial inclusion are reflected in Figure 13 below:

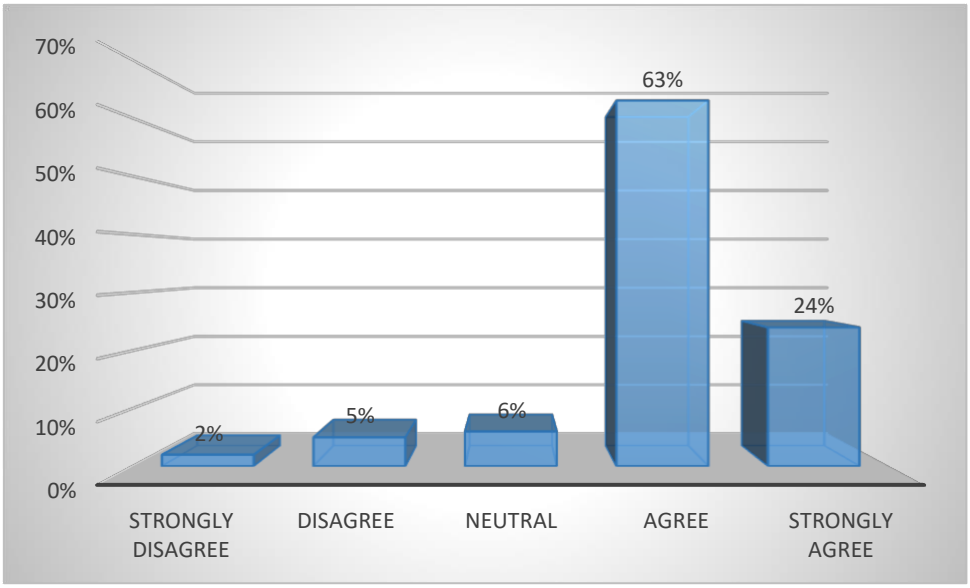

Figure 13: Financial Inclusion Promotion

A total of 63 percent and 24 percent of respondents **agreed** and **strongly agreed** respectively that mobile banking innovations promote financial inclusion for BOPs. However, five percent disagreed, six percent of the respondents remained indifferent and two percent strongly disagreed.

4.2.1.4 Reduced cash handling

Mobile phones can be used as a virtual bank card and enable customer to securely access their banking information. This also eliminates the need for cash withdrawals. Mobile phone can also be used a point of sale (POS) terminal. However, in non-urban areas of South Africa, infrastructure is not yet well developed enough to support the mobile banking innovations seamlessly.

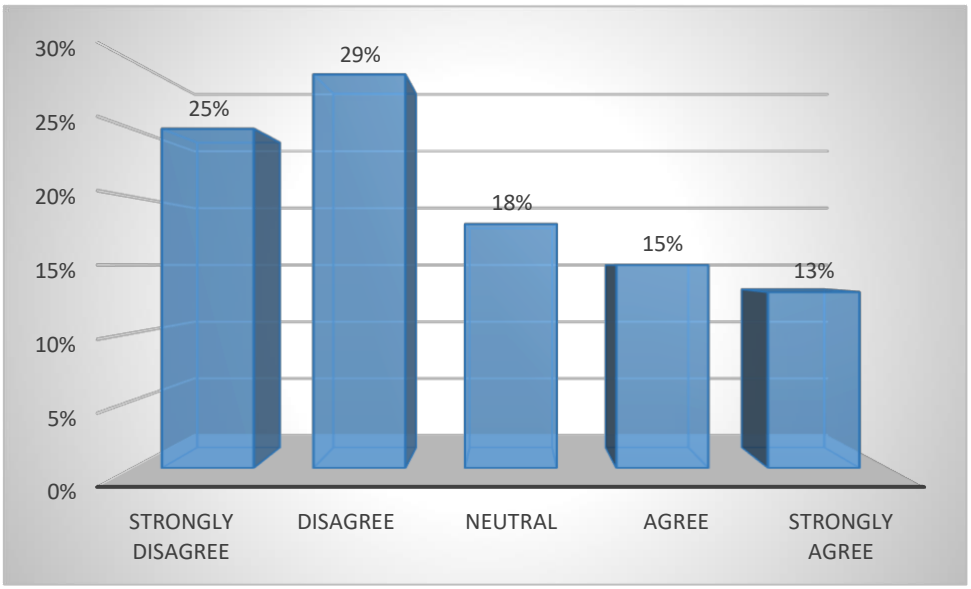

Figure 14: Reduced Cash Handling

In response to reduced cash handling, 25 percent of the respondents **strongly disagreed** and 29 percent **disagreed that mobile banking innovations reduce the handling of cash**. However, 18 percent were indifferent, 15 percent agreed and 13 percent strongly agreed that mobile banking innovations do reduce the handling of cash.

4.2.1.5 Reduced rural-urban divide

Mobile banking can used by customers to receive or send cash. In South Africa, there are retail outlets who have partnered with banks as cash distributing channels. Retailers in rural areas are able to facilitate cash withdrawals initiated by the sender using mobile banking. Mobile banking also has additional functions such as paying for or buying electricity. For customers in rural areas, this means that they have access this service at any time.

The benefits of reduced rural-urban divide are presented in Figure 15 below:

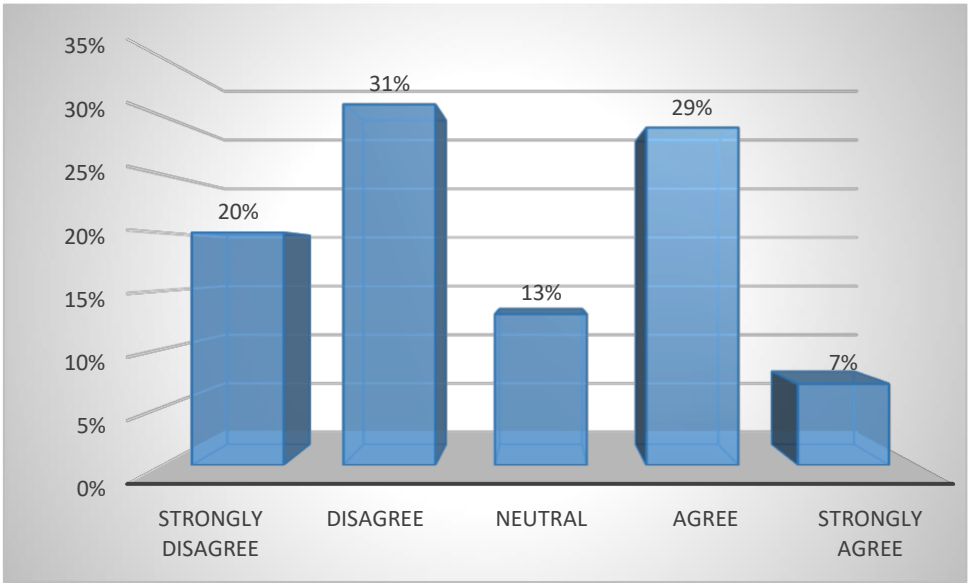

Figure 15: Reduced Rural-Urban Divide

In figure 15, 20 percent of the respondents **strongly disagreed** and 31 percent **disagreed** that mobile banking innovations reduce rural-urban divide. Thirteen (13) percent remained neutral, 29 percent agreed and seven percent strongly disagreed.

4.2.1.6 Reduced inequality

Mobile banking has its own risks as a service, particularly for services such as credit. Artificial intelligence is used in the banking industry and in some instances, it can influence the terms and availability of credit. Algorithms inherit the biases of the people who make them, and while they can be immensely useful, they can also exacerbate inequalities. On the hand, some mobile banking innovations do offer banking accounts that do not require a lot of information from the customer, making it easier for BOPs to access credit facilities based on their earnings.

Responses on the benefits of reduced inequality are shown in Figure 16 below:

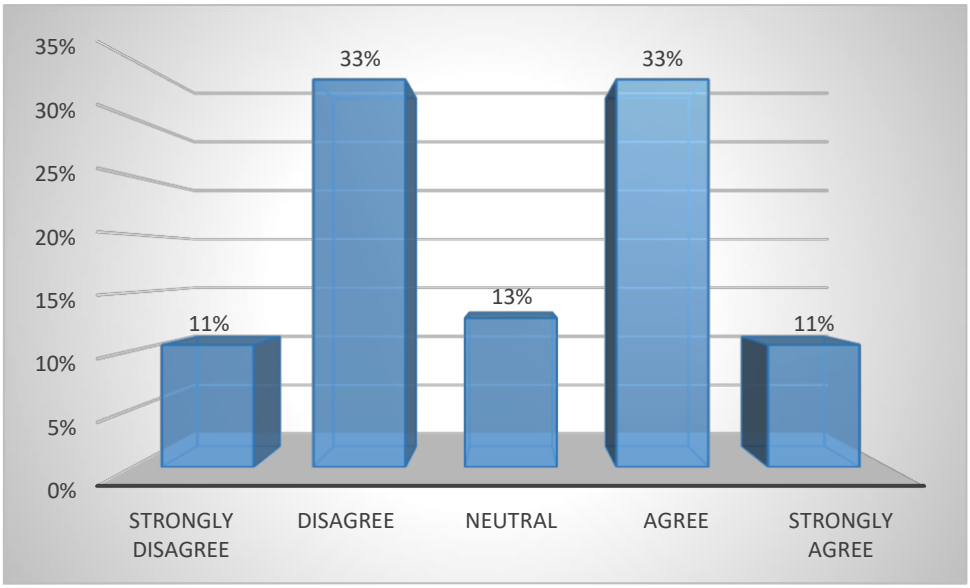

Figure 16: Reduced Inequality

The respondents were equally divided on whether or not mobile banking innovations reduce inequality. Thirty-three (33) percent **agreed that mobile banking reduce inequality** and equally, 33 percent **disagreed that mobile banking innovations reduce inequality**, while 11 percent strongly agreed and equally, 11 percent strongly agreed. The other 13 percent were indifferent

.

4.2.1.7 Reduced poverty

Due to insufficient income levels and market discrimination in developing countries, there are still millions of people involuntarily excluded from the financial system. The exclusion creates potential loss of savings, investable funds, and accumulation of wealth. This is still the case in areas where the communities are able to access mobile banking. Mobile banking innovations depends on communities having access to a stable telecommunications infrastructure.

Respondents' views on mobile banking innovations and poverty reduction are shown on Figure 17 below:

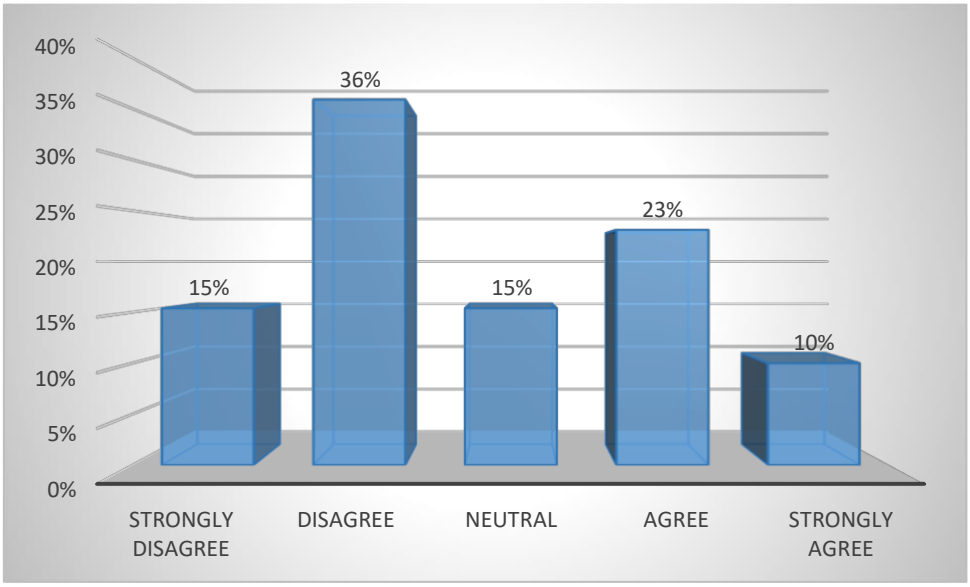

Figure 17: Reduced Poverty

Thirty-six (36) percent of the respondents **disagreed**, 15 percent **strongly disagreed** respectively, that mobile banking innovations reduce poverty. However, 15 percent remained neutral whilst 23 percent and 10 percent agreed and strongly agreed respectively. This finding is different from Hinson's (2011) study in Ghana, which found economic improvements of people who use mobile banking.

4.2.1.8 Economical transactions

Partnerships between banks, financial institutions and the mobile industry players are important in advancing the mobile banking innovations for BOPs. Mobile banking innovations growth is depended on the support of a single integrated framework that provides consumers with the convenience of banking from home. The increased access to mobile phones by the unbanked is the cost-effective and economically efficient way of providing financial services.

Figure 18 below shows the respondents' views on economic transactions:

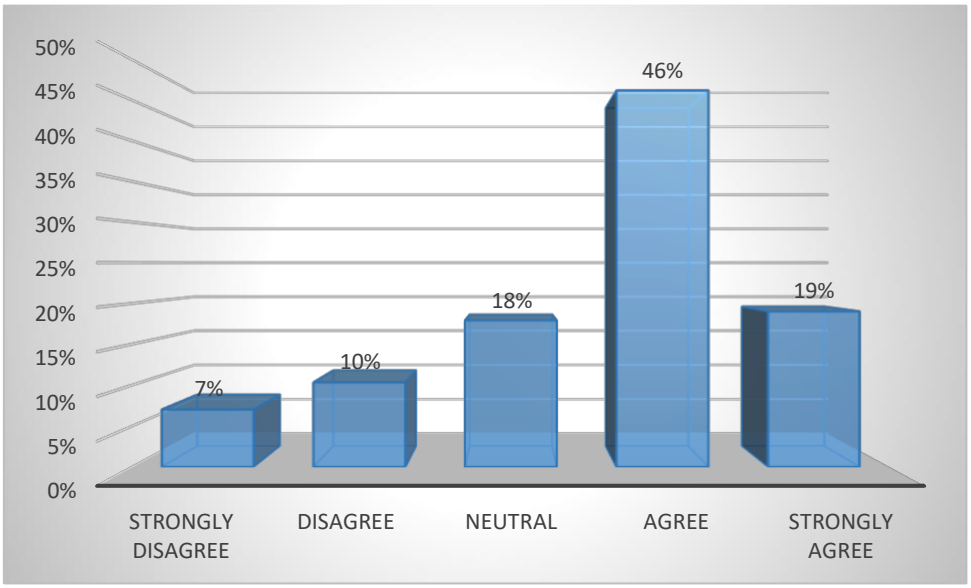

Figure 18: Economic Transactions

A total of 46 percent and 19 percent **agreed** and **strongly agreed** respectively that mobile banking innovation improves economic transactions of BOPs. However, 18 percent were neutral and 10 percent disagreed with this view. These findings support Prahalad and Hart (2002), who argues that untapped purchasing power exists in the BOP economic market segment. Firms taking part in these markets can make reasonable financial returns through offering services and products to people living in poverty, bring prosperity to them and create employment opportunities.

4.3 The results of the survey questions on the challenges of mobile banking innovation development for BOPs are as follows:

There are evident opportunities to develop mobile banking innovations in Africa. In South Africa, there are existing innovations that offers digital banking, savings and credit products, as well as the digitization of value chain financing and merchant payments. These products can

significantly improve customer benefits and usage, as well as long-term sustainability for providers.

However, there are challenges in developing the mobile banking innovations further for the BOPs.

4.3.1 Poor mobile connectivity

The views on the challenges of poor mobile connectivity are presented in Figure 19 below:

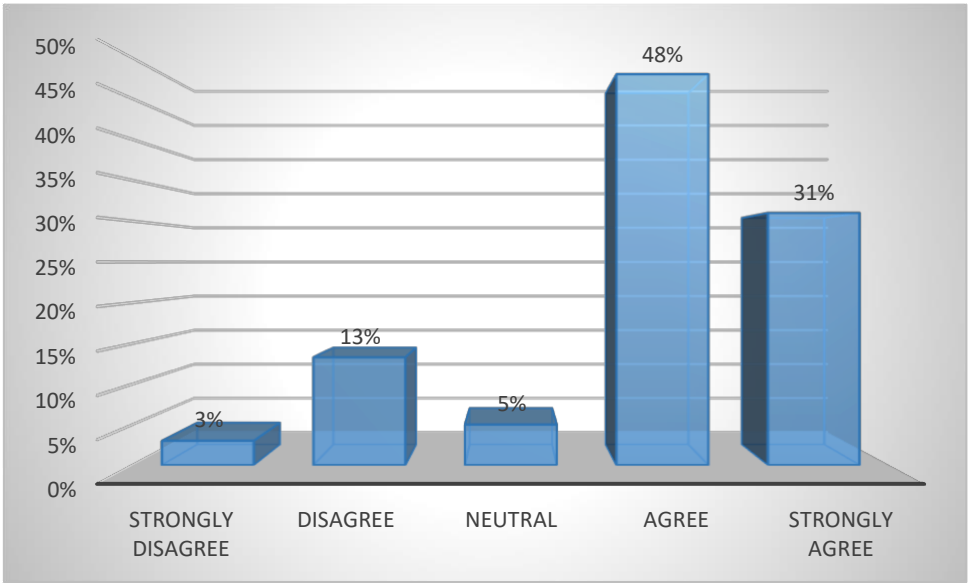

Figure 19: Poor Mobile Connectivity

Forty-eight (48) percent and 31 percent of the respondents **agreed** and **strongly agreed** respectively that mobile banking innovation does face challenges relating to poor mobile connectivity. However, 13 percent disagreed that this represents a set of challenges whilst five percent remained neutral.

4.3.2 Lack of mobile banking services awareness

Lack of mobile banking services awareness responses are presented in Figure 20 below:

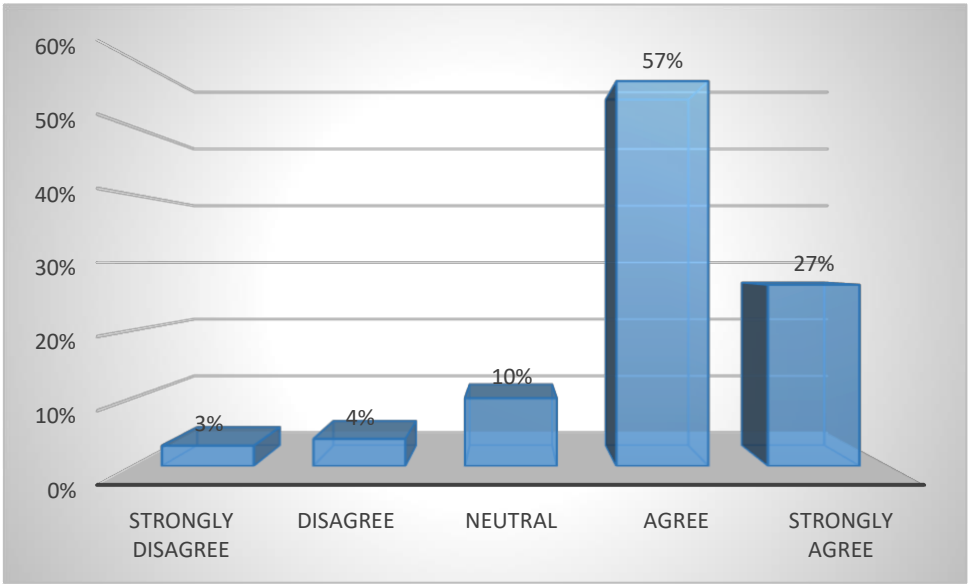

Figure 20: Lack of Awareness of Mobile Banking Services

At least 57 percent and 27 percent **agreed** and **strongly agreed** that lack of awareness is a challenge to mobile banking services whereas four percent and three percent disagreed and strongly disagreed respectively. Ten (10) percent of the participants remained neutral. According to Anderson and Markides (2007), marketing and advertising play a very vital role in the adoption of innovations. Some of the BOP market does not have access to these channels. Therefore, to reach this market and highlight the benefits of the innovation, companies need to come up with suitable advertising strategies.

4.3.3 Illiteracy

The views on the challenges of illiteracy are presented in Figure 21 below:

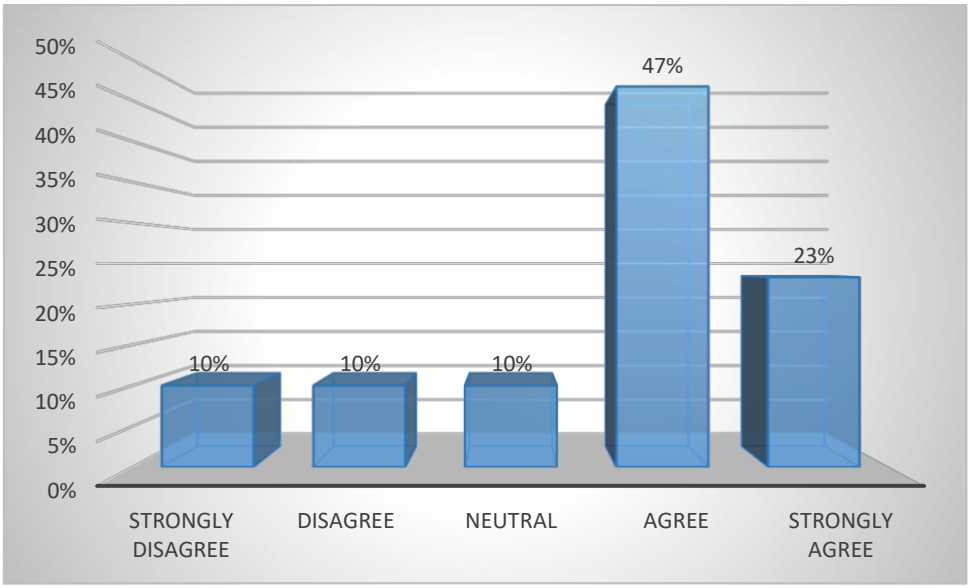

Figure 21: Illiteracy

In Figure 21, 47 percent and 23 percent of the respondents **agreed** and **strongly agreed** respectively that illiteracy is a challenge for mobile banking innovation reaching BOPs. However, 10 percent remained neutral ,10 percent disagreed and the other 10 percent strongly disagreed.

4.3.4 Poverty

Responses on poverty as a challenge for mobile banking innovation are presented in Figure 22 below:

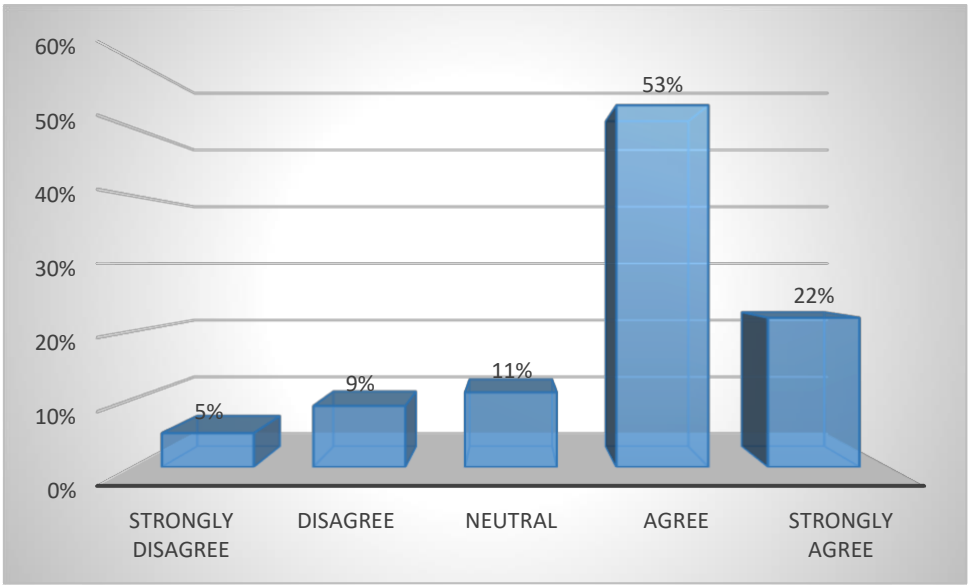

Figure 22: Poverty

Fifty-three (53) percent and 22 percent of the respondents **agreed** and **strongly agreed** respectively that poverty is a challenge to implementing mobile banking innovations to BOPs, as shown in Figure 22. Nine percent and five percent disagreed and strongly disagreed respectively. Eleven (11) percent of the respondents remained neutral. The 53 percent and 22 percent of the responses supports findings by Saunders et al., (1997); Gangopadhyay and Wadhwa, (2004) that BOPs do not have enough cash flow/money to spend on mobile banking innovations.

4.3.5 Perceived security risks

Responses on perceived security risks as a challenge for mobile banking innovations are shown in figure 23 below:

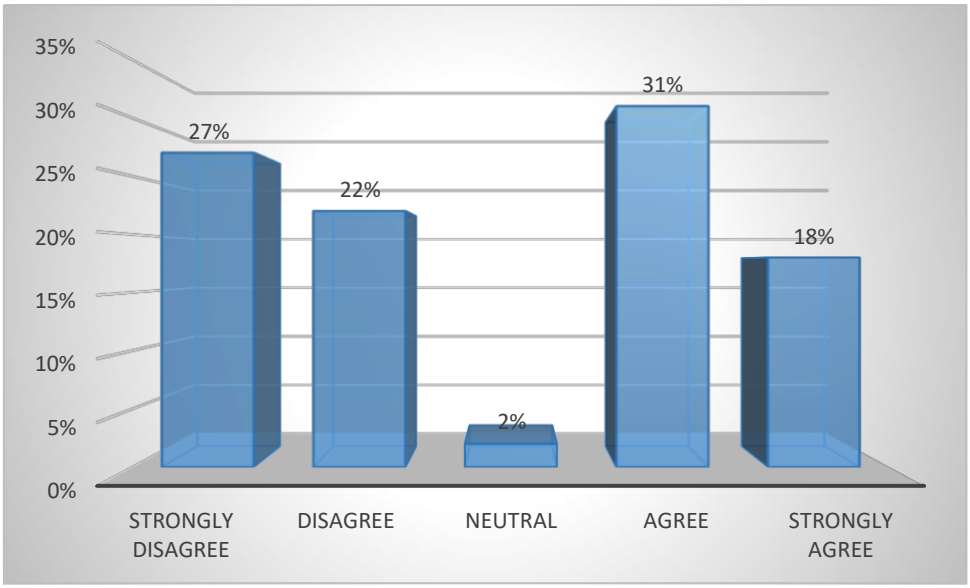

Figure 23: Perceived Security Risks

Figure 23 shows 31 percent and 18 percent of the respondents agreed and strongly agreed that perceived security risks are a challenge for mobile banking innovations. Twenty-seven (27) percent and 22 percent strongly disagreed and disagreed. Two percent of the respondents were indifferent.

4.3.6 Lack of regulatory and legal framework

The responses on the lack of regulatory and legal framework as a challenge to mobile banking innovations are presented in Figure 24 views:

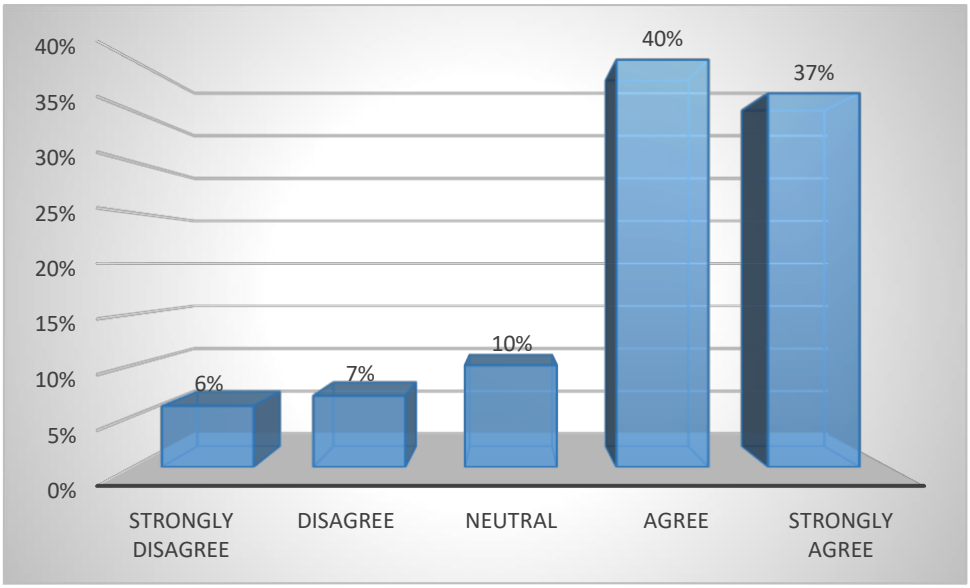

Figure 24: Lack of Legal and Regulatory Framework

Forty (40) percent and 37 percent of the respondents **agreed** and **strongly agreed** respectively that lack of legal and regulatory framework is a challenge for mobile banking innovations. Seven percent and six percent disagreed and strongly disagreed respectively. Ten (10) percent remained neutral.

4.3.7 Perceived usefulness

The responses on perceived usefulness as a challenge are shown on figure 25 below:

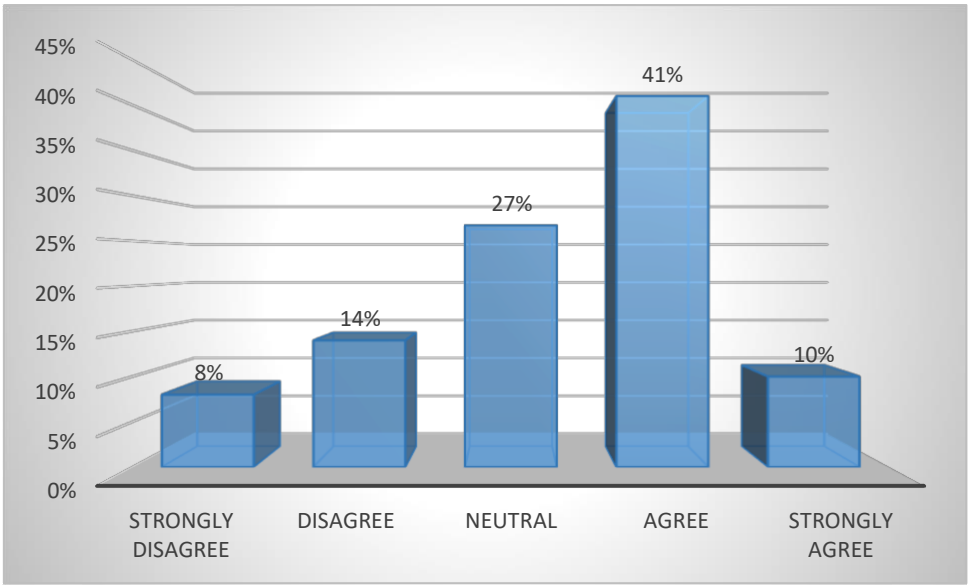

Figure 25: Perceived Usefulness

Figure 25 shows 41 percent and 10 percent of the respondents **agreed** and **strongly agreed** respectively that perceived usefulness is a challenge for mobile banking innovations. Whereas 14 percent and eight percent disagreed and strongly disagreed respectively. Twenty-seven (27) percent remained neutral. Perceived usefulness of mobile banking innovations as a challenge can be influenced by other factors such as affordability, accessibility and awareness amongst the BOPs.

4.3.8 Ease of use

The responses on the ease of use in regard to mobile banking innovations are presented in Figure 26 below:

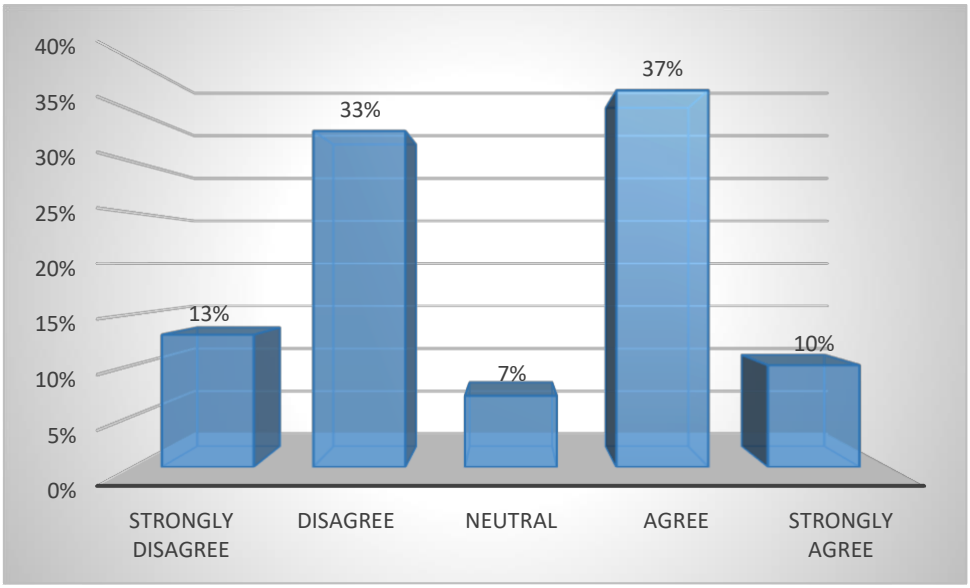

Figure 26: Ease of Use

Figure 26 shows 37 percent and 10 percent of the respondents **agreed** and **strongly agreed** respectively that ease of use is a challenge for mobile banking innovations. However, 33 percent and 13 percent disagree and strongly disagree respectively. Seven percent of the respondents remained neutral.

4.4 Factors that inform market alternatives for mobile banking innovations

For any bank considering digitization, it is important to understand that digital transformation is not only primarily about new technology. It is a way of working that enables the institution to take advantage of innovation to quickly and seamlessly react to a more diverse and rapidly growing market demand. For established banks in some African markets, this may be crucial for long-term survival. Traditionally, banks rely on siloed teams and a sequential approach to product development. In a digital bank, the culture is one of multifunctional teams that can quickly adapt to change. Such teams release products within weeks, not months, and are continually upgrading these products. It's about creating

and introducing client-centric solutions, agile methodologies and lean decision- making processes.

Technology is central to the deployment of digital financial services and their ability to provide affordable, accessible and sustainable financial services to people who were previously often excluded from traditional bank services. Mobile and agent banking solutions rely on technology to enable instant transmission of financial and non-financial information between the financial services provider and customers to be able to cost-efficiently provide access to financial services ‘anywhere, anytime, anyhow’.

The responses on cost (affordability), convenience, trust, education and awareness in regards to mobile banking innovations are shown in this section below. These are factors that informs market alternatives that can assist companies (banks and telecommunications) to understand the needs of the BOP customers when it comes to mobile banking innovations.

4.4.1 Cost (Affordability)

Figure 27 shows the responses on the importance of cost in regards to mobile banking innovations below:

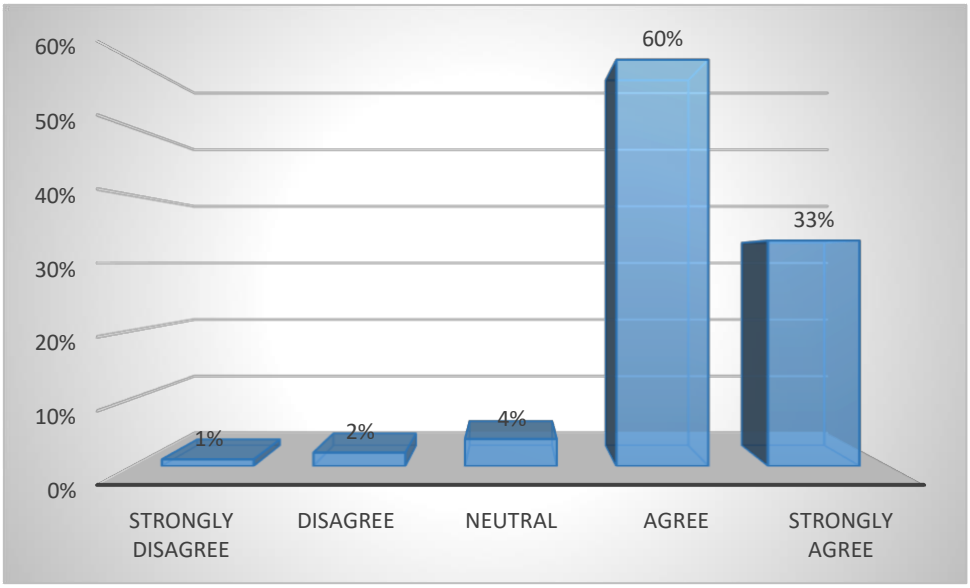

Figure 27: Cost

Figure 27 shows that 60 percent and 33 percent **agreed** and **strongly agreed** respectively that cost (affordability) is an important factor in mobile banking innovations implementation and adoption. It is clear that companies need to come up with pricing strategies that accommodate the BOPs. The products must be affordable and accessible (Anderson & Markides, 2007). Only one percent and two percent of the respondents strongly disagreed and disagreed respectively. Four percent remained neutral.

4.4.2 Convenience

Responses on convenience as a success factor for mobile banking innovations are presented in Figure 28 below:

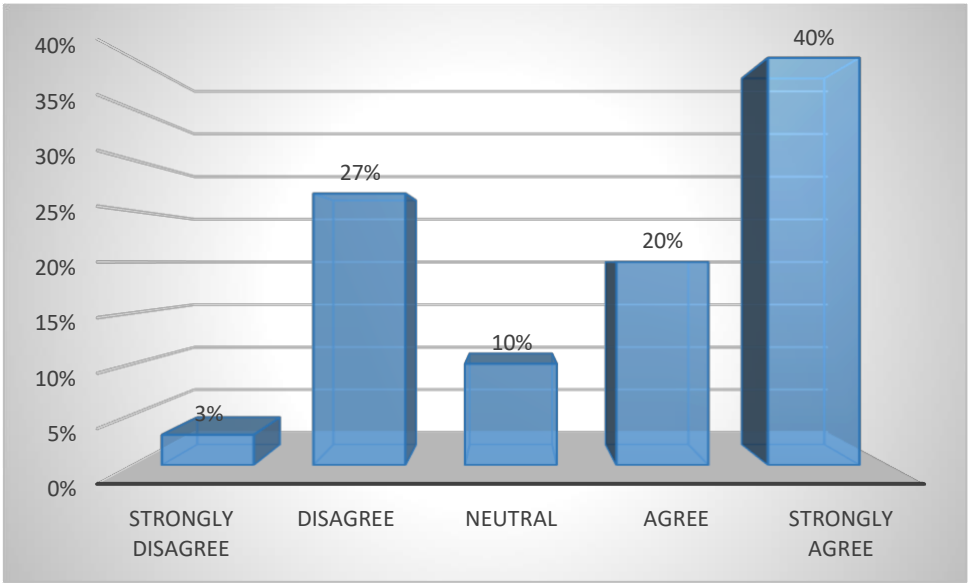

Figure 28: Convenience

Figure 28 shows that 40 percent and 20 percent of the respondents **strongly agreed** and **agreed** respectively that mobile banking innovations do bring convenience to the lives of the BOPs. However, 27 percent disagreed, three percent strongly disagreed and 10 percent remained neutral.

4.4.3 Trust

The views on trust as a critical success factor for mobile banking innovations are presented in Figure 29 below:

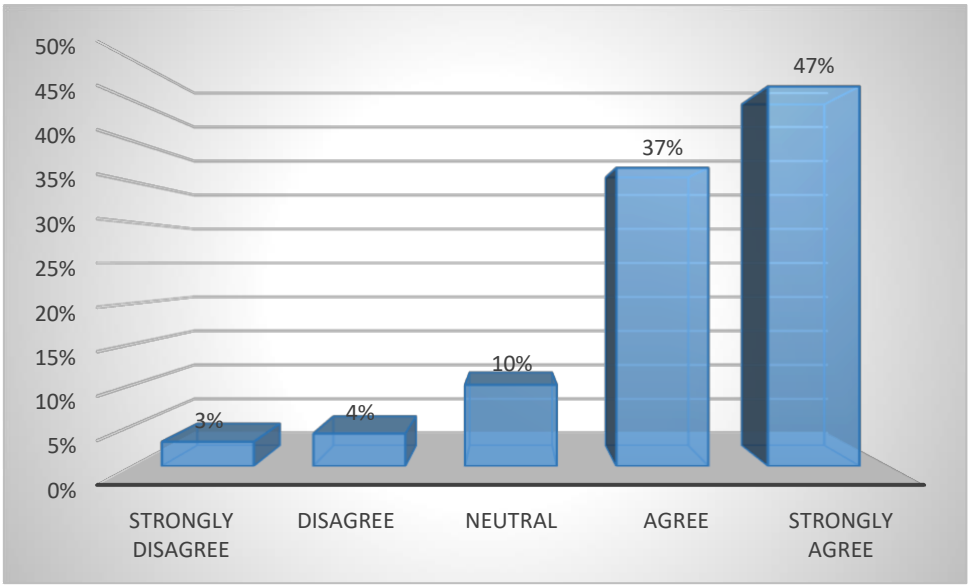

Figure 29: Trust

Figure 29 indicates a total of 47 percent and 37 percent respondents **strongly agreed** and **agreed** respectively that trust is a critical factor of mobile banking innovations to BOPs. However, 10 percent remained neutral, while four percent and three percent disagreed and strongly disagreed respectively.

4.4.4 Education

The responses on education as a critical success factor for mobile banking innovations are presented in Figure 30 below:

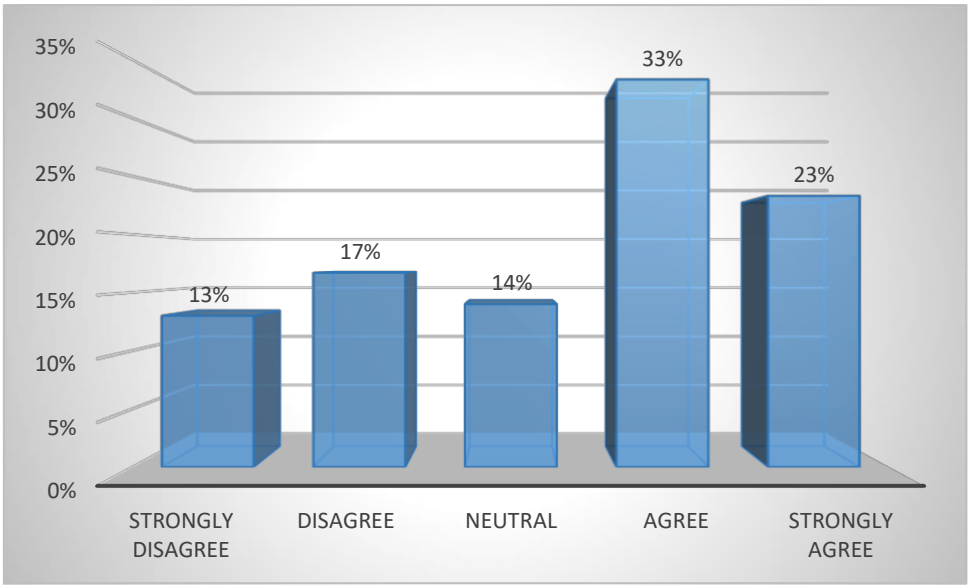

Figure 30: Education

Thirty-three (33) percent and 23 percent of the respondents agreed and **strongly agreed** respectively that education is a critical factor for mobile banking innovations implementation to BOPs. However, 17 percent and 13 percent disagreed and strongly disagreed respectively. The other 14 percent remained neutral.

4.4.5 Awareness

Respondents' views on the importance of awareness for mobile innovations success are presented in figure 31 below:

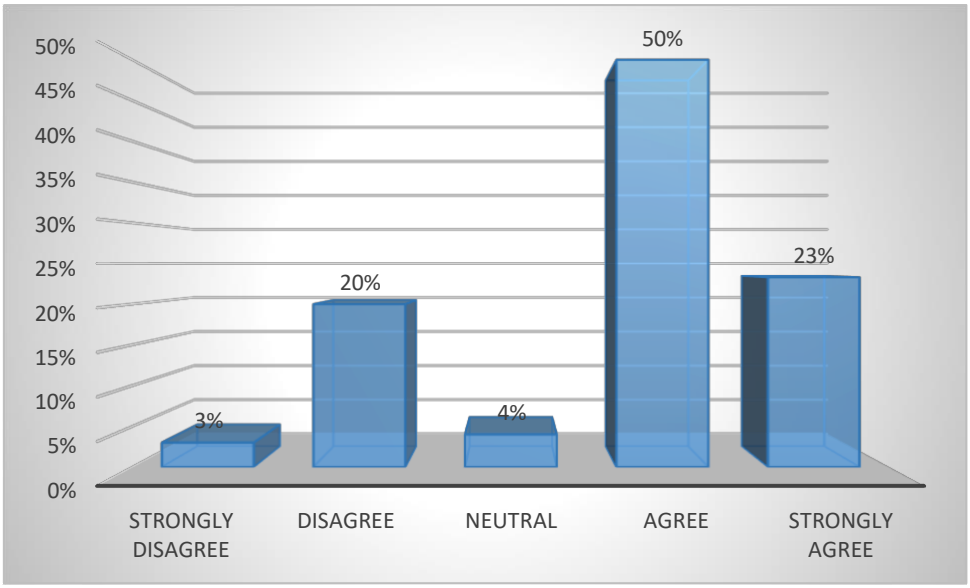

Figure 31: Awareness

Figure 31 shows that 50 percent and 23 percent of respondents **agreed** and **strongly agreed** respectively that awareness is critical for mobile banking innovation success. However, 20 percent and three percent disagreed and strongly disagreed, while four percent of the respondents were indifferent.

4.5 Regulatory framework on inclusive innovation implementation for BOPs

Many regulators were observing as entirely new actors entered the financial sector, unsure of how best to step in to protect customers and funds, while still allowing for these new innovative forces to expand access to financial services. Current regulation on alternative channels is not very precise, which means that every innovative channel that is proposed for the first time can be interpreted differently by regulatory authorities, which impacts the authorization process. It is therefore important to have a framework where regulatory authorities, partner banks and technical partners work hand in hand to address concerns around themes like anti-money laundering, while promoting financial inclusion. Also, traditional banks sometimes have seen more threats with

mobile money than opportunities. The positive outcome of the learning curve over the recent years is that most banks are now engaging in digital banking initiatives in partnership with mobile operators, and we can see a positive momentum for a complementary approach between banks and mobile operators.

4.5.1 Clear regulatory framework

Responses on the importance of having clear regulations on mobile banking innovations are shown in Figure 32 below:

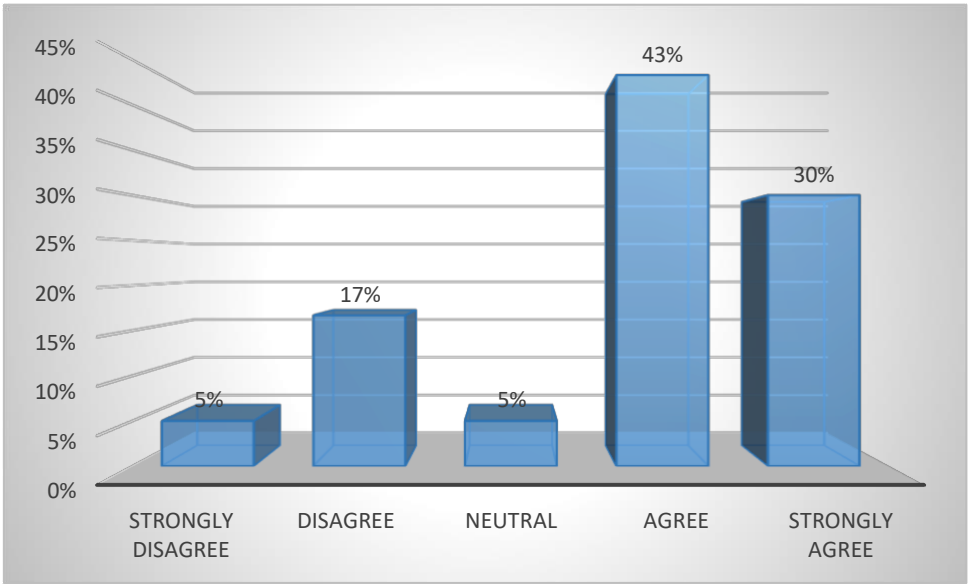

Figure 32: Clear Regulation

A total of 43 percent and 30 percent **agreed** and **strongly agreed** respectively that clear regulation is critical for the success of mobile banking innovations. However, 17 percent of the respondents disagreed, five percent strongly disagreed, and the other five percent were neutral.

4.6 ONE WAY ANOVA TABLES

Table 2: One Sample Statistic

Rank	Benefit	N	Mean	Standard. Dev.	Anova p-value
1	Convenience	60	4.463	0.713	0.688
2	Accessibility	60	4.293	0.684	0.680
3	Financial inclusion promotion	60	4.114	0.666	0.610
4	Economic transactions	60	3.853	0.647	0.602
5	Reduced cash handling	60	3.718	0.515	0.510
6	Reduced urban divide	60	3.208	0.512	0.502
7	Reduced inequality	60	3.204	0.500	0.495
8	Reduced poverty	60	3.164	0.498	0.482
Rank	Challenges	N	Mean	Standard. Dev.	Anova p-value
1	Lack of legal and regulatory framework	60	4.164	0.668	0.640
2	Poor mobile connectivity	60	4.154	0.646	0.610
2	Lack of awareness	60	4.106	0.613	0.602
3	Illiteracy	60	4.103	0.513	0.497
4	Poverty	60	4.100	0.414	0.401
5	Perceived security risk	60	4.085	0.206	0.183
7	Perceived usefulness	60	3.913	0.917	0.646
8	Ease of use	60	3.245	0.714	0.532

Rank	Effects of Marketing Alternatives	N	Mean	Standard. Dev.	Anova p-value
1	Cost	60	4.994	0.813	0.802
2	Convenience	60	4.215	0.808	0.797
3	Clear regulation	60	4.146	0.663	0.646
4	Awareness	60	4.103	0.608	0.588
5	Education	60	4.015	0.522	0.511
6	Trust	60	3.002	0.411	0.398

Table 2 above shows the average mean, standard deviation, and p-values for the responses on all the variables that were computed and ranked. It is concluded that convenience, accessibility, financial inclusion and economic transactions are the most significant benefits of mobile banking innovations. Legal and regulatory framework, poor mobile connectivity, lack of awareness and illiteracy are the most significant challenges. Cost, convenience, regulation and awareness are the most significant critical success factors with a p-value of more than 0.05 and ranked according to their average means.

4.7 SUMMARY OF DATA PRESENTATION

The results of the study reflect that the most significant benefits of mobile banking innovations to BOPs are convenience, accessibility, financial inclusion promotion and facilitation of economic transactions. However, the most significant challenges of channeling mobile banking innovations

to BOPs are the lack of a suitable legal framework, lack of awareness, poor mobile connectivity in rural areas and basic education. For mobile banking innovations to be implemented successfully for BOPs, issues of cost, convenience, regulation and awareness must be adequately addressed. The next chapter discusses and analyses the key findings to reach the conclusions of the study.

CHAPTER FIVE: ANALYSIS AND DISCUSSION OF THE RESEARCH FINDINGS

5.1 INTRODUCTION

The analysis and discussions that are guiding the findings are the research questions of the study as stated in the previous chapters:

- What are the benefits and challenges of **inclusive mobile banking innovation development** in relation to BOPs?
- What are the factors that inform **market alternatives** for mobile banking innovations?
- What is the effective **mobile banking legal framework** necessary for inclusive innovation implementation for BOPs?

The supporting literature brings understanding and enables conclusions to be made.

5.2 BACKGROUND

The aim of the study is to explore the impact of inclusive innovation on the bottom of the pyramid (BOP) in the context of mobile banking in South Africa. Effective mobile banking implementation is possible with clear regulations on pricing, competition, prudential banking, deposits and payment system regulation to ensure transparency, consumer protection, safety, integrity, secure and efficient systems. With

partnerships, co-creation and collaborative efforts can be combined to bring more awareness to mobile banking innovations.

5.3 ANALYSIS AND DISCUSSIONS

The literature review was carried out to support the definition and explanation of mobile banking and BOP in the context of inclusive innovation. Mobile banking usage trends and critical factors in Africa were presented to enable the assessment of the need for mobile innovations for BOPs. Challenges with adopting innovations in low-income market segments present opportunities for firms to re-look at their strategies for market scanning and selection. The market generation theories show how market generation and attractive markets are realized and adopted. The study looked into the effective mobile banking legal framework necessary for inclusive innovation implementation for BOPs. Whilst inclusive innovation of BOP market has success in other jurisdictions, this study explored how it is relevant within the South African context through the examination of the benefits and challenges of inclusive mobile banking innovation development for BOPs.

5.3.1 What are the benefits and challenges of inclusive mobile banking innovation development for BOPs in South Africa?

5.3.1.1 Benefits of reduced inequality, reduced urban rural divide and cash handling

The problems in the BOP markets are widely known and recognized by most firms. The disconnect is understanding the need of the BOP consumers, educating them about the product and its use, pricing the product right for affordability and lastly the means of reaching them

(distribution channels) (Masinge, 2010). The respondents were equally divided on whether or not mobile banking innovations reduce inequality. Thirty-three (33) percent **agreed that mobile banking reduce inequality** and equally, 33 percent **disagreed that mobile banking innovations reduce inequality**, while 11 percent strongly agreed and equally, 11 percent strongly agreed. The other 13 percent were indifferent. The question in this case is: which marginalized, excluded population does inclusive innovation need to focus on? Does the categorization address women, youth, the disabled and ethnic minorities?

In mobile banking, research by Wu and Wang (2005) on middle class population highlighted that factor such as cost have a nominal effect on the consumer decision making of using the product. This observation brings to light the impact of mobile banking innovation to the consumer. The use is having much more value to their lives than cost. This, in turn, triggers the conversation about inclusive innovation and market generation. Contrary to the reviewed literature in chapter 2, on mobile banking innovations reducing rural urban divide (benefit to BOPs), 20 percent of the respondents **strongly disagreed,** and 31 percent **disagreed**.

In response to reduced cash handling, 25 percent of the respondents **strongly disagreed,** and 29 percent **disagreed that mobile banking innovations reduce the handling of cash**. This highlights the fact that mobile banking innovations does not necessarily benefit the BOPs in the context of reducing the handling of cash. Information technology plays a big role in this kind of analyses. Markets that are known to be difficult to access or poor to interest any multinational companies can be made accessible through ICTs (Ilahiane & Sherry, 2012). To encourage participation of individuals in these collaborations, there has to be a culture of saving/investment amongst the BOP consumers

(Landrum, 2007). The money saving activity is to allow for wealth creation, promote economic growth and participation in new markets generated by collaborations between BOPs and multinational companies.

5.3.1.2 Benefits of financial inclusion and reduced poverty

The main benefit of inclusive mobile banking innovation development for BOPs as indicated by the respondents of this study is financial inclusion. In the survey for this study, mobile banking innovations are regarded as promoters of financial inclusion for BOPs. It means people who have low income and are living in poverty have a chance to participate in formal economic channels. In addition, mobile banking innovations allow individuals to own bank accounts (Manji, 2010). Individuals who normally do not qualify to have a bank account have banking services on their cell phones that equate to an ordinary bank account. Soederberg (2013) observed that financial inclusion through mobile banking is an important tool for the promotion of stability and growth whilst reducing poverty.

Mobile banking invariably captures the unbanked and complements traditional banks, especially in rural areas (Ivatury, 2009). As reported, in 2017, the poorest unbanked households were more than 50% with an estimated 1.7 billion individuals not using formal financial services globally (Demirguc-Kunt et al., 2018). This means that with mobile banking extending to BOPs, the unbanked can be incorporated into mainstream banking channels.

Fifty-three (53) percent and 22 percent of the respondents **agreed** and **strongly agreed** respectively that poverty is a challenge to implementing mobile banking innovations to BOPs, as shown in Figure 22. The 53 percent and 22 percent of the responses supports findings by Saunders et al., (1997); Gangopadhyay and Wadhwa, (2004) that

BOPs do not have enough cash flow/money to spend on mobile banking innovations.

According to Khavul and Bruton (2013), inclusion of the poor in banking enables remittance services, insurance, credit, transfers, payments, savings by low-income groups at reasonable costs. 'Inclusive business integrates people living in poverty into the value chain as consumers or producers' (Gradl & Knobloch 2010, p.10). The inclusion in this instance is like what
Ashley (2009, p.3) described as the 'selling products and services that are needed by the poor and have high development impact'.

However, it is important to note Prahalad's (2004) argument that it is wrong for outsiders to undermine the choices of the poor, echoing the economic principle that any agreement entered willfully on the part of both parties serves to increase one's utility. Karnani (2007) also argues that there are limits to the development objectives they can achieve, and the negative impacts they can avoid. It is therefore important to draw the cost-benefit line that bridges between the business and poor, thereby achieving mutual benefit out of the inclusive innovation.

According to Demirguc-Kunt et al. (2018) and Kemp (2018), in 2017, there was a 20% increase in Africa's internet users. This translates to the increase in the usage of mobile phones. The inclusiveness of banking using mobile phones in local communities can be leveraged to overcome vulnerabilities faced by individual producers or consumers (Reficco & Márquez, 2012). The strategy can improve the availability of products and services at affordable prices, bring about trust in transactions and encourage start-ups in the community (Jain & Vachani, 2006). In this manner, financial inclusion can then ensure that social and business development intersect to benefit both businesses and the poor.

Studies have shown that business strategies and companies that operate in BOP communities tend to perform better than those that are focused on the business conditions of established economies (London

& Hart, 2004). When companies do business with people living in poverty, both sides stand to benefit.

5.3.1.3 Benefits of accessibility and convenience

In this study, mobile banking innovations were seen to improve accessibility for BOPs. According to (Ilahiane & Sherry, 2012), markets that are known to be difficult to access by any multinational companies can be made accessible through ICTs. The main challenge in BOP markets has been market fragmentation, which makes distribution of products difficult (Chavan, 2013). Hence, innovations to BOPs solves the market fragmentation challenges by making services and products accessible (Khavul & Bruton, 2013).

With mobile banking introduction, BOPs or any other customer are enabled to access banking products and services using mobile cell phones without necessarily having to find a computer with broadband connection or visit the traditional bank branches for personal transactions, leading to what is called “branchless banking” (Ivatury, 2009).

Availability or accessibility is the extent to which the products and services are readily available for use with ease to the customers. Innovative distribution channels can be used to reach customers who are living in far and isolated rural communities. According to Pitta et al. (2008) availability of services and products in these fragmented markets can be achieved through partnerships with local entrepreneurs and small businesses in rural areas. Rao (2013) gave an example of how Vodacom discovered cell phone renting entrepreneurs in rural areas through tracking high volumes of calls. They then decided to offer these individuals business opportunities to operate bigger phone shop kiosks in West Africa (Pfeiffer et al., 2007).

Studies in West Africa have shown that mobile banking innovations brings about the convenience of accessing financial services in low-income communities (Baptista & Oliveira, 2015). In Zimbabwe, a study by Mago and Chitokwindo (2014b) found that accessibility is a benefit of using mobile banking innovations, as individuals are able to access services easily, quickly, conveniently and affordably by using a product called Ecocash. Figure 11, in chapter 4, shows that 46 percent of the study's respondents **agreed** and 28 percent **strongly agreed** that mobile banking brings convenience for BOPs.

According to Mashelkar (2012), affordable access and outreach is realized through inclusive innovation, making it scalable with a repeatable business model. Excluded populations are then empowered to take charge of their lives and lift their standards of living. This makes them feel dignified and helps in uplifting their perceived status in the society (Madsen & Cotter, 2009). Therefore, mobile banking innovation is a technology many people within BOPs will find beneficial and which will permit them a wide array of accessibility to financial products and services that they could not access previously. Products such as life savings accounts, funeral insurance, mobile payments are some products they would not ordinarily have access in their remote locations.

5.3.1.4 Economic benefits

The majority of participants in the study agreed that mobile banking innovation improves the economic transactions of BOPs. This finding is supported in literature by Prahalad and Hart (2002), who argues that at the bottom of the economic pyramid is untapped purchasing power. Firms that engage BOP markets realize significant revenues through services and products provisioned to the low-income groups. This creates considerable employment opportunities and brings prosperity to BOPs as it increases their chances of taking part in formal economic

activities. However, it is noted by Prahalad (2004) that not all firms extending innovations to BOPs believe it is a profitable market segment.

As argued by Pitta et al. (2008), mobile technologies are an important and instrumental component of BOP strategies. He made an example of M-Pesa in Kenya, where consumers are able to exchange money without the need to go to brick and mortar branches of banks. As these technologies are being rolled out, BOPs can be empowered and educated to become entrepreneurs using the mobile banking services and products (Carden, 2008). They can become marketers, distributors or product designers. These initiatives have the capacity to both alleviate poverty and build sustainable BOP markets.

5.4 Challenges of inclusive innovations in Mobile banking are discussed as follows:

5.4.1 Poor mobile connectivity

As presented in this study's findings in the previous chapter, forty-eight (48) percent and 31 percent of the respondents **agreed** and **strongly agreed** respectively that mobile banking innovation does face challenges relating to poor mobile connectivity. The connectivity problem is due to poor network infrastructure in most of rural Africa (Mago & Chitokwindo, 2014b). Similarly, telecommunication network coverage is regarded as very poor in rural areas of Southern Africa (Mlitwa & Tshetsha, 2012). The telecommunication quality becomes compromised by the mobile signals makes it difficult to carry out mobile banking transactions. This sometimes is exacerbated by how people are scattered across the rural areas further away from telecommunications base stations (Mlitwa & Tshetsha, 2012).

As observed by Tobbin (2012), broadband connection is important for fast data and reliable internet speed. According to a survey by GSMA (2016), in Africa, most people in rural areas remain without mobile connectivity. Therefore, mobile banking services for BOPs remain widely unexploited. These low population density areas have an impact on how telecommunications priorities base stations, which is often regarded as low profit market segments (Ammar & Ahmed, 2016). Therefore, BOPs staying further away from base stations occasionally have no signals. However, increased BOPs adoption of mobile banking innovations is anticipated with widespread and increasing mobile phones usage in Africa (Demirguc-Kunt et al., 2018). According to Tobbin (2012), if more BOPs are connected by mobile phones, it greatly increases and facilitate digital and financial inclusion. Physical infrastructure is a problem in rural areas. In addition, poor infrastructure hinders the exchange of goods and services as well as information.

5.4.2 Challenge of illiteracy

The survey of this study revealed illiteracy as a challenge for mobile banking innovation reaching BOPs. This is supported by the Statista (2018) survey in eight African countries, which found illiteracy as a barrier to mobile banking innovations among poor people. Similarly, studies in Ghana, Nigeria and Sudan highlighted the barrier of illiteracy affecting mobile banking products usage (Ammar & Ahmed, 2016). As observed by Bankole and Cloete (2011) many parts of Africa have high illiteracy levels of BOPs living in rural areas and being unable to interpret and understand mobile banking solutions.

In a study by Mlitwa and Tshetsha (2012), it was concluded that literate individuals appreciate and are aware of mobile banking innovations. Hence, the problem of illiteracy of BOPs makes them less aware of mobile banking innovation capabilities for their own advantage. In

another study by Donner and Tellez (2008), lack of education and information was found to be the main reason why poor people are not adopting mobile banking innovations. This means that with literacy, BOPs can adopt mobile banking products using awareness campaigns (Chukwumah, 2017).

Studies by Devarajan and Fengler (2013) showed how educational attainment is an important factor to facilitate mobile banking acceptance by the poor. Education is regarded as a vital enabler to mobile banking usage, and any lack thereof inhibits its usage (Chavan, 2013). The technology must be socially acceptable and match cultural practices and norms. In addition, it should provide livelihood opportunities to people and should be ethical (Thaba, 2013). It is, therefore, important to note that innovations are not developed and implemented in isolation, since the socio-cultural context plays an important role in diffusion of innovations (Kroesen & Kamp, 2010).

5.4.3 Lack of regulatory and legal framework

This study highlights the challenges with the lack of a regulatory and legal framework in regards to mobile banking innovations. The reason according to

Rao (2013), is the “know your customer” (KYC) regulation for anti-money laundering reasons that remains key in issuance of mobile banking solutions to identity/verify the customer. The “know your customer” (KYC) process is necessary for money laundering avoidance. It is used to curb tax avoidance through anonymous bank accounts (Ivatury, 2009). For BOPs who are unable to provide the required documentation, this acts as a hindrance to mobile banking innovation products adoption (Mlitwa & Tshetsha, 2012). The government has the sole authority to define and enforce binding laws, thus can also help improve market structures in the areas of education/awareness and infrastructure.

Companies can be important sources of information for shaping legislation as they are aware of these challenges. Dialogue between companies and government, through the collective activities of stakeholders such as chambers of commerce and industry experts, can help overcome some of the regulatory and legal framework challenges in order to benefit the BOPs. The exchange of information can result in legislation that helps innovation and protect the interests of consumers.

5.5 What are the effects of the factors that informs market alternatives for mobile banking innovations?

5.5.1 Cost

In the study's survey, it is clear that cost is a critical factor for the implementation of mobile banking innovation to BOPs. Prahalad (2004) believes that big companies have the capacity to effectively deliver products to BOP markets, but it is the profitability that makes them hesitant to roll out products to this market. From the BOPs point of view, the cost of mobile banking innovations hampers their chances of taking up these products since companies bring services and products at a higher cost to make a reasonable return on their investments.

Prahalad and Hart (2002) argue that companies intending to participate in this market ought to create business strategies and models that are cost effective for BOPs. These models require a good balance between profitability, eradication of poverty and empowerment for their relevance to BOPs and the companies involved in mobile banking innovations. Gangopadhyay and Wadhwa (2004) argues that people living in poverty use at least 80% of their income on clothing, food and transport. This aligns with research by Wu and Wang on middle class populations, which suggests that factors such as cost have a minimal impact on the consumer's decision making of using the product (Wu & Wang, 2005).

Affordability primarily means, the ability for BOPs to use and pay for the mobile banking innovations. According to Mlitwa and Tshetsha (2012) affordability occurs when a business rationalises its cost structure using product or service simplification as a cost reduction measure. Banking firms therefore need to come up with pricing strategies that accommodate BOPs cash flow and use of money in general. The products must be affordable and accessible (Anderson & Markides, 2007). Other businesses have also employed bulk-breaking strategies to profitably serve the BOP market, since low-income people consume in small quantities (Nyirenda & Chikumba, 2013).

5.5.1.2 Sustainable Ventures Crosshairs

In evaluating costs involved in creating a product, the "sustainable ventures crosshairs" developed by UNEP (2008) in the figure below, assists in value creation for both businesses and BOPs through innovation leveraging and the elimination of inefficiencies.



Figure 33: Sustainable Ventures Crosshairs

Costs of the value proposition are reduced whilst meeting people's needs using the company resources. Success is guaranteed when businesses take advantage of the market knowledge and social cohesion of people from the target group to gather information, supply products, offer services and convey capabilities. The information received during the immersion is to be used in the innovation process to develop appropriate products and services as well as business models (Prahalad, 2004). However, this immersion process is difficult, expensive and rare (Prahalad & Hammond, 2002).

5.5.2 Convenience

Innovations in mobile banking brings banking to BOPs doorstep and solves the problem of lack of access to traditional banks. Dashi et al. (2013) agrees that with safe, affordable and convenient banking for BOPs, mobile banking products and services can reduce the challenges of inclusive banking. Studies by Beck et al. (2015) showed that convenience is an important factor that impacts adoption of mobile banking innovations by the poor.

According to Kemp (2018) and Lee and Chung (2009), in mobile banking, a SIM card acts as the identifier of the person using the service instead of a national ID. This makes it easier or convenient for telecommunications companies to penetrate the mobile services to rural areas. This supports the findings of this study's survey, that mobile banking innovation brings convenience for BOPs. According to Ivatury (2009), mobile banking innovation allows BOPs to make low value transactions without any exclusions.

A BOP customer is conscious when travelling for products. Accessibility and availability are therefore important for the BOP market. Companies

in this segment would have to come up with innovative distribution strategies and channels to reach their customers. Knowing the social and cultural environment of the consumers is important in crafting marketing alternatives. This makes the adoption and diffusion of the inclusive innovation viable. This can also create opportunities for some of the BOP consumers to become distributors of such an innovative product (Anderson & Markides, 2007).

As evidenced in Kenya, the M-Pesa mobile banking system innovation was based on small cash management systems to permit low-income groups to transact on the platform (Mbiti & Weil, 2011). In addition, Demombynes and Thegeya (2012) showed that M-Pesa had the ability to facilitate savings whilst being a secure and simple financial tool. Similarly, studies in East Africa by the Kikulwe et al. (2014) found that mobile banking innovations across markets were continuously expanding and developing as new business models and new technologies are emerging.

Mobile banking innovation enables less handling of cash thus providing better financial security for the poor (Van der Wansem, 2013). This means that BOPs can handle cash much better with mobile banking, bringing greater convenience to secure financial transactions. These BOP markets that are known to be difficult to access, or are of little interest to any multinational companies can be made accessible through ICTs (Ilahiane & Sherry, 2012). Hence, the importance of engagement and input of BOP communities. The purpose of the engagement is to listen to the consumer's needs and determine what suits those needs (Prahalad & Hart, 2002). Acceptability by the consumers as well as other members in the value chain to consume, distribute and sell a product or service plays a vital role in successful adoption of the innovation is important (Anderson & Markides, 2007).

5.5.3 Awareness

Awareness is regarded as the main effect of marketing alternatives for mobile banking inclusive innovation as shown in this study's survey. Marketing and advertising play a vital role in the adoption of innovations. BOP markets do not have access to some of the traditional marketing channels used by companies. Therefore, to reach this market and highlight the benefits of a particular innovation relevant to them, companies need to come up with suitable advertising strategies.

According to Mas (2010), the success of M-Pesa in Kenya was due to the awareness campaigns to BOPs in regards to mobile banking services. With awareness, prospective users/customers become more conscious of the existence of a specific product or service (Beck et al., 2015). The common challenge of culture and language means advertising need to be aligned to educational levels, linguistic and cultural aspects (Luttmer, 2005). As the mobile banking innovations become known and the early adopters act as agents to give testimony of the product and services, more people become aware of its existence.

According to Chung and Kwon, (2009) advertising should include information regarding security, cost, availability and usefulness in order to appeal to BOPs. As the current trends move towards branchless banking, more long-term profitability is achieved when more customers are served on mobile banking platforms, resulting in reduced brick and mortar branches which then translate to reduced operational costs. In the South African context, banks have created partnerships with some of the big retailers. Standard bank is using the Spar partnership for their "Instant Money" product. Co-creation in the Capitec case where their business model is centered around low-income customers. Capitec uses a flexible IT system and biometric identification. Their proposition is to build trust and good relationships with their customers, thus understanding customers' needs, in particular, the BOP market.

5.6 What is regarded as the effective mobile banking framework, necessary for inclusive innovation implementation for BOPs?

5.6.1 Clear regulatory and legal framework

The survey conducted in this study found that clear regulation is critical when mobile banking innovations are being rolled out to BOPs. The BOPs need to be understood by regulators so that relevant regulation is crafted to govern the mobile banking environment. In that way, BOPs are not prejudiced, but are able to use these services and products and derive maximum usage. The regulations must be fair to both the BOPs and the companies providing the services. Today, a person from the BOP category is required to produce documents and long processes to open a bank account. Mobile banking innovations should be able to streamline these processes and make them simpler to follow with lesser requirements (Beck et al., 2015; Prahalad & Hart, 2002).

The importance of an individual having a form of legal identity is realized in the banking industry. Without any form of identification, banks are not able to open an account, offer credit or any product for that customer (Prahalad & Hart, 2002). For a BOP customer, this means they cannot have access to any of the mainstream banking services. The absence of identity documents for the BOP creates an opportunity for banks to find an alternative way to offer services to their customers. This talks to business models that understand the social settings of BOPs. The issues create an opportunity for generating a BOP market for the banks.

For example, it is not always possible for a BOP living in the rural areas to produce a proof of address or proof of income for maize meal harvested and sold. The policy makers such as the Reserve Bank, must promote efficient and safe mobile banking systems by creating inclusive rules and regulations. The failure to enact sufficient policies triggers a

widespread and far-reaching impact on society. According to Dashi et al. (2013), the banks in Malaysia were required to produce a mobile banking roadmap before getting licenses to operate mobile banking innovations. The roadmap included the need for measures to ensure an increased adoption of mobile banking services in a strategic and comprehensive way. Malaysian regulators checked whether a cost-effective and transparent pricing policy framework was in place for use within the mobile banking platform. Such a pricing framework would then provide an incentive structure that encourages adoption of mobile banking products, set common standards, ensure integrity and security of the banking system.

The success story of M-Pesa in Kenya came at the backdrop of compliance with central bank money transfer service authorization as a non-banking system, compliance with prudential banking, deposit taking regulation, payment service provision security, efficiency, effectiveness and integrity (CGAP, 2007). Therefore, the M-Pesa business model was not to infringe on the Banking Act by complying with KYC, maximum transaction limits, AML, CFT, e-money issuance and payment systems, and was subject to regular audits by the Central Bank. A similar success story of a non-bank regulatory system was implemented in Zimbabwe for Econet's mobile banking. The principle of co-creation, has in recent years, enabled the Econet bank accounts to be handled by various banking institutions to benefit from the mobile banking innovations (Mago & Chitokwindo, 2014)

In South Africa, only bank-based mobile banking is well-regulated, thus leading to partnerships between banks and non-banks to fulfil mobile banking innovations. The regulations include KYC, maximum transaction limits, payment system, e-money issuance, AML and CFT regulations. It is these bank-based system to m-banking that has been frustrating many non-banking innovators in South Africa (Porteus, 2009). To further enhance its environment, South Africa would have to amend its position, for example by creating a category of regulation for non-bank

e-money issuers, or ‘narrow banks,’ a step that has in fact been suggested (Porteus, 2009, p.41). The South African Reserve Bank (SARB) does not provide special dispensation for e-money providers in South Africa. Instead, mobile money providers partner with traditional banks. Mobile money providers in South Africa are categorized and dealt with as banks, therefore they are expected to comply with the requirements associated with banks, such as customer identification by means of face-to-face identity verification and proof of residence (KYC) (Rouse, et al., 2017). Mobile banking is forcing the convergence of the financial and telecommunications sectors. Unfortunately, the convergence of two such heavily-regulated industries means that “this potential is unlikely to be met unless policy-makers lay the ground rules for innovations.” (Bergek, et al., 2008).

According to Klein (2011), mobile banking innovation raises significant regulatory and competition policy issues by unbundling and disaggregating financial services and it gives fundamental conceptual insights into the nature of these services. Business conduct regulation encompasses such fields as competition, consumer protection and anti-money laundering measures. There may be specific disclosure rules and sanctions in case of breach of rules - business conduct regulation tends to have relatively well-defined rules and processes with limited regulatory discretion (Klein, 2011).

Prudential regulation may require more substantial discretion. The key to any safe-keeping function is regulation that assures the integrity of the system and requires procedures to be subject to audit (Kroesen & Kamp, 2010). Back-up systems are needed to ensure that account information can be recovered in case of physical destruction or theft. (Klein, 2011). The impact of good governance is tremendous in development and implementation of innovation in a developing country (Kroesen & Kamp, 2010).

In the United Nations Development Program, good governance is defined as "the set of values, policies and institutions by which a society

manages its economic, political and social affairs through interactions among the government, civil society and private sector" (UNDP, 1997). It is the way a society makes and implements decisions to achieve mutual understanding, agreement, and action. It comprises of the mechanisms and processes for citizens and groups to articulate their interests, mediate their differences and exercise their legal rights and obligations. Its rules, institutions and practices set limits and provides incentives for individuals, organizations and firms. Governance may be operationalized into attributes such as transparency, accountability, inclusion and responsiveness (OECD, 2011). Good governance helps in creating a stable system, which is a prerequisite for a country to focus and participate in innovative activities.

In a general sense, the rationale for policy interventions arises when there are failures of some kind within the innovation system (Bergek et al., 2008). These could be regarded as failures of process such as an unclear articulation of market demands, or too great a perception of risk, or an absence of key competencies which lead either to innovation not occurring or to it occurring in insufficient or inefficient or ineffective ways (Edler, 2010).

A central focus has been on supply-side interventions which support research and development within core private and public sector institutions, and processes of learning within production (Lundvall, 1992). These might include subsidies or tax breaks, sometimes aimed at specific sectors, or "softer" supply-side actions such as enhancing capacity to adapt and absorb exogenous innovations (Bell & Pavitt, 1993; OECD, 2011). Regulation of innovation is a further domain – very much linked to the supply side – seeking to affect the perceived and actual returns to innovation; for example, using intellectual property rights legislation. Finally, innovation is also impacted by more generic policies, such as those which support markets and enterprise.

These might be sectoral, such as rules governing market entry/exit for firms or sectoral employment rules; or broader, such as general support for, and regulation of, enterprise (Edquist, 1997).

In 1998, the Kenya Communications Act was passed. In the Kenyan budget of 2009, responding to lobbying from the formal handset suppliers suffering from this price undercutting, the government removed VAT on mobile phones. This subsequently resulted in a more level playing field between grey market and official imports and paved the way for intense competition connected to growth of local mobile brands (GSMA, 2016). Local consumers could now buy branded phones of increasing quality at a lower price. For informal phone sellers embedded in BOP markets, the dedicated local distributors of branded phones now became viable suppliers.

During 2010 and 2011, a new stage of standardization began emerging. With large brands increasingly exasperated by the competition from Chinese firms, rhetoric around quality, counterfeiting and criminality was being thrown more and more at the informal channels. In 2008 the Kenyan Anti-Counterfeit Act was brought into law, providing wide-ranging powers to raid firms and confiscate equipment with minimal evidence. High profile raids of importers and sellers were now undertaken to deter these actors and the end consumers. Beyond this, the government brought forward plans to allow network blocking of grey market phones, a controversial change which if instigated would render more than two million mobile phones unusable in Kenya (CCK, 2011).

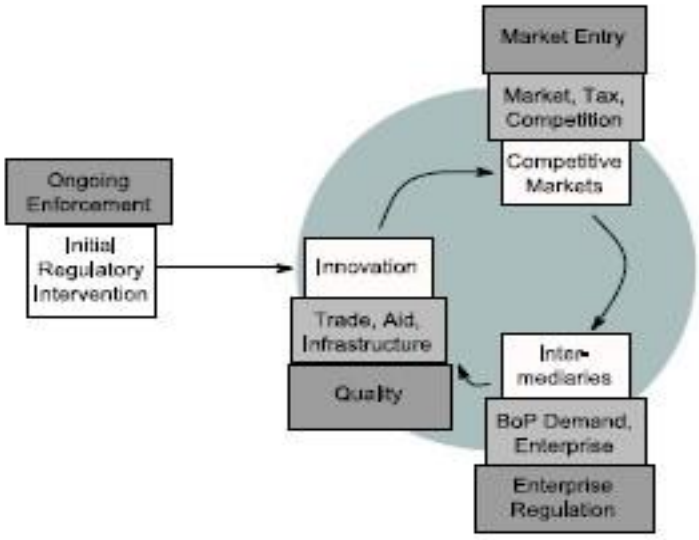

Figure 34: Inclusive Innovation Policy

Source: Foster & Heeks (2013)

Policy's clearest influence has been on competition. By simultaneously regulating market entry and some aspects of mobile technologies, policy has ensured market entry and competition. This has been the core driver behind opening of low-income markets. In mobile handset supply, VAT removal increased competition between different supply sources and helped open markets into rural areas. The financial guidelines issued in 2010 have likewise pushed Safaricom to try to connect its wider mobile money services into low-income markets.

However, regulatory policy and enforcement on licensing, if not clear, can lead to operator performance and service quality problems with network congestions as in the M-Pesa case (Foster & Heek, 2013). Lack of enforcement or non-existence of counterfeit laws can lead to the proliferation of grey counterfeit phones with poor quality batteries, speakers, earpieces or charging system problems. Through regulation, low quality handsets can be flushed out of the market.

5.7 SUMMARY OF THE DISCUSSION

In conclusion, the study found that mobile banking innovations bring some benefits to the BOPs. However, there is a need for the right regulatory and legal framework for the successful implementation of mobile banking innovations to BOPs to ensure that they come at a sustainable cost, with clear regulation to control market activities, leading to mutual benefits of the poor and businesses involved. The next section presents conclusions and recommendations of the study.

CHAPTER SIX: CONCLUSIONS AND RECOMMENDATIONS

6.1 INTRODUCTION

The aim of this study is to investigate the impact of inclusive mobile banking innovations on BOPs. As outlined in the theoretical and conceptual frameworks, the study unpacks the benefits, challenges and effects of mobile banking innovations on BOPs. Using a quantitative approach, a survey was carried out with 70 respondents and the results were analyzed to outline the main findings of the study. The key conclusions and recommendations are presented below, with a brief discussion on areas for further study.

6.2 KEY FINDINGS

The key findings are as follows:

- The key benefit of mobile banking innovation developments is financial inclusion of the poor to banking activities. BOPs are marginalized from participating in formal banking channels, but through mobile banking innovations, they are able to access credit, insurance, money transfers, savings and remittances. In this case, a mutual benefit is derived, in the sense that mobile banking business models integrate BOPs and businesses into the banking value chain.

- BOPs can participate more in economic activities using mobile banking, with benefits such as convenience and accessibility, enabling them to transact from their homes without restrictions. Mobile banking innovation also solves fragmentation in BOP markets, permitting the distribution of banking services and

products. In turn, innovation distribution channels are then achieved through partnerships with small business and local entrepreneurs.

- There are regulatory and legal challenges in mobile banking innovations with regards to BOP markets. Regulatory frameworks are aimed at protecting society by ensuring financial stability to reduce the costs and risks of widespread financial distress. Other complementary measures are then required to deal with market distortions and costs related issues to unforeseen circumstances due to market complexities. Regulators are most concerned with consumer protection, payment and deposit systems, licensing, banking system stability, money laundering and terrorism funding (OECD, 2011). There needs to be more of a focus on regulating BOPs markets for the benefit of both the customer and businesses.

- A most critical effect of mobile banking innovations to BOPs is ensuring reasonable costs. This is possible with a regulatory support structure on pricing models and cost-effective business strategies. These models require a balance between profitability, adoption and customer satisfaction.

- The success of new mobile banking solutions to BOPs lies on the level of awareness and marketing efforts. Awareness campaigns are necessary to send a message on security, affordability, availability and usefulness of the mobile banking innovations. Partnerships and collaborations with BOPs encourage inclusive innovation and help in promoting awareness amongst the communities. These partnerships can also contribute to the existing knowledge base on BOP initiatives, such as co-creation.

6.3 KEY CONCLUSIONS OF THE STUDY

The key conclusions for the study are as follows:

- Mobile banking innovations bring convenience and accessibility to BOPs, solving market fragmentation through innovation distribution channels.
- BOPs can participate more in economic activities using mobile banking, with benefits such as convenience and accessibility
- There are regulatory and legal challenges in mobile banking innovations with regards to BOP markets
- The success of new mobile banking solutions to BOPs lies on the level of awareness and marketing efforts.

6.4 RECOMMENDATIONS FOR BUSINESSES / STAKEHOLDERS

The recommendations for businesses/stakeholders are as follows:

A competitive and enabling mobile banking environment

The regulators in the banking and telecommunication industry, who are responsible for crafting policies should strive to create an enabling and competitive mobile banking environment to all stakeholders. With competition amongst stakeholders, mobile platforms should be encouraged to be cost-effective, safe, open, and accessible for the benefit of BOPs.

Key stakeholders' partnerships

Partnership between banks, regulators, small businesses, BOP communities, and telecommunication are required for the offering of

mobile banking innovations to BOPs. Mobile connectivity is essential to roll out mobile banking products. In addition, such partnerships can assist in creating user-friendly interfaces, customization, user education and financial literacy support. A transparent, safe, efficient and innovative mobile platform is permissible when all relevant stakeholders are involved in supporting the more widespread implementation of innovation for the benefit of BOPs.

Adequate and relevant awareness campaign

There is a need to involve all key stakeholders, including government structures in building awareness of mobile banking innovations. Awareness campaigns can highlight regulatory and legal benefits, as well as opportunities in the context of mobile banking innovations. The BOPs need to be made aware of the impact of mobile banking innovations in their lives.

Infrastructure development

Mobile banking innovations thrive on ICT and telecommunications infrastructure, and hence, the focus on developing BOP areas creates a platform for telecommunications companies to improve mobile network coverage. This development creates a good environment for high levels of ICT expertise to be able to deal with low network coverage challenges. The government can create incentives for the development of rural infrastructure that benefit poor people.

BOP clientele focus

Amongst the stakeholders of system developers, network engineers, bank managers, bank regulators; a more customer-centered approach is called for, one that addresses the needs and circumstances of BOPs

when developing mobile banking innovations. The innovations must be culturally and socially applicable to this market segment. Examples can be mobile banking products and services with vocal platforms in local languages.

Regulation, policies and laws

To facilitate the competition within mobile banking, policymakers should ensure that the market is regulated and flexible to permit banks, telecommunications companies and partnership arrangements (co-creation) to enter this BOP market. Such increased competition should be able to bring more efficiency and effectiveness into this market and permit low-cost market offerings that BOPs can afford.

6.5 SUGGESTIONS FOR FUTURE RESEARCH

The suggestions for future studies are as follows:

Having established the key factors that are benefits and challenges, and the effects of alternatives and frameworks of mobile banking innovations to BOPs, there is a need to establish the relationships between these key factors and mobile innovation success to BOPs.

Further studies can be done using hypothesis testing and regression analysis to test the strength of the existence of any of these factors. A more longitudinal study on a large sampling frame should be done to test these variables.

6.6 CONCLUSIONS

This study contributes and add to the research on the generation of markets (specifically BOP), with the banking industry as a case. It also highlights the banking and telecommunications opportunities in BOP markets.

Mobile banking innovation complements traditional banking, and can be beneficial to the banking industry by creating new opportunities in BOP markets. When mobile banking innovations are offered with an adequate regulatory framework, at a low cost, they can give more banking convenience and accessibility to the poor. Tailor-made mobile banking products are critical to the BOP's needs and circumstances. In addition to the products offerings, having adequate infrastructure means better mobile network coverage for greater access. It is recommended that key stakeholders unite and partner with each other in serving the BOP market by developing more efficient and effective mobile banking platforms and products.

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APPENDICES

APPENDIX A

Ethics Information Sheet



University of the Witwatersrand, Wits Business School

Dear Sir / Madam

My name is **Matshidiso Maseko** and I am a master's student in **Management of Innovation Studies** at University of the Witwatersrand, Johannesburg. As part of my studies, I have to undertake a research project, and I am investigating **Mobile banking and inclusive innovation at the bottom of the pyramid in South Africa** under the supervision of Dr Diran Soumonni.

The aim of this research project is to examine quantitively, the benefits and challenges of mobile banking innovations development for BOPs in South Africa. This study is of value and important to financial organizations and mobile service providers. Collaborative efforts between the two key industry players can help address the need for inclusive, accessible, and improved mobile banking services to the vulnerable, low income and impoverished elements of society.

As part of this project, I would like to invite you to take part in answering an online questionnaire. This activity will involve a link with a questionnaire, divided into four sections in google forms format, and will take around 3 minutes to complete.

There will be no personal costs to you if you participate in this project. You will not receive any direct benefits from participation, but there are no disadvantages or penalties if you do not choose to participate or if you withdraw from the study. You may withdraw at any time or not answer any question if you do not want to. The questionnaire will be completely confidential and anonymous as I will not be asking for your name or any identifying information, and the information you give to me will be held securely and not disclosed to anyone else.

If you have any concerns or complaints regarding the ethical procedures of this study, you are welcome to contact the University Human Research Ethics Committee (Non-Medical), telephone +27(0)117171408, email hrecmedical.researchoffice@wits.ac.za

Yours sincerely,
Matshidiso Maseko

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APPENDIX B

Inclusive Innovation on the Bottom Of Pyramid.

Challenges, benefits and critical success factors of inclusive innovation on the BOPs.

* Required

Demographics

1. **1. Indicate your gender:** *
   Mark only one oval.
   - ◯ Female
   - ◯ Male
   - ◯ Prefer not to say

2. **2. Indicate your highest level of education** *
   Mark only one oval.
   - ◯ Up to Matric
   - ◯ Diploma
   - ◯ Degree
   - ◯ Post-Graduate
   - ◯ Other
   - ◯ Other: _____

3. **3. Indicate your age** *
   Mark only one oval.
   - ◯ Below 25 years
   - ◯ 25-35 years
   - ◯ 36-45 years
   - ◯ 46-55 years
   - ◯ Over 56 years

4. **4. Indicate your race** *
   Mark only one oval.
   - ◯ Africa/Black
   - ◯ Caucasian/White
   - ◯ Coloured
   - ◯ Indian
   - ◯ Asian 5
   - ◯ Other
   - ◯ Other: _____

5. **5. Indicate which stakeholder group you belong to** *
   Mark only one oval.
   - ◯ Banking
   - ◯ Mobile Communication
   - ◯ Regulator
   - ◯ Other
   - ◯ Other: _____

B. Benefits of mobile banking innovations

1. Convenience

6. **Mobile banking innovations bring convenience to low income groups** *
   Mark only one oval.
   - ◯ Strongly Agree
   - ◯ Agree
   - ◯ Neutral
   - ◯ Disagree
   - ◯ Strongly Disagree

2. Accessibility

7. **Mobile banking innovations gives greater financial accessibility to poor people** *
Mark only one oval.
- Strongly Agree
- Agree
- Neutral
- Disagree
- Strongly Disagree

3. Reduced cash handling

8. **Mobile banking innovations reduce cash handling of low-income groups** *
Mark only one oval.
- Strongly Agree
- Agree
- Neutral
- Disagree
- Strongly Disagree

4. Financial inclusion promotion

9. **Mobile banking innovations brings better financial inclusion for poor people** *
Mark only one oval.
- Strongly Agree
- Agree
- Neutral
- Disagree
- Strongly Disagree

5. Reduced urban-rural divide

10. **Urban-rural divide is reduced with mobile banking innovations reaching poor people** *
Mark only one oval.
- Strongly disagree
- Disagree
- Neutral
- Agree
- Strongly agree

6. Reduced inequality

11. **There is reduced inequality when poor people can use mobile banking innovations** *
Mark only one oval.
- Strongly disagree
- Disagree
- Neutral
- Agree
- Strongly agree

7. Reduced poverty

12. **There is reduced poverty when poor people can use mobile banking innovations** *
Mark only one oval.
- Strongly Agree
- Agree
- Neutral
- Disagree
- Strongly Disagree

8. Economical transactions

13. **There is better economic transactions involving the low income groups with mobile banking innovations reaching the poor** *
Mark only one oval.
- Strongly disagree
- Disagree
- Neutral
- Agree
- Strongly agree

C. Challenges of mobile banking innovation

9. Poor mobile connectivity

14. **Mobile banking innovations are difficult to deliver because of poor mobile connectivity** *
Mark only one oval.
- Strongly disagree
- Disagree
- Neutral
- Agree
- Strongly Agree

10. Lack of awareness to mobile banking services

15. **There is a lack of awareness to mobile banking services amongst the poor** *
Mark only one oval.

- ◯ Strongly disagree
- ◯ Disagree
- ◯ Neutral
- ◯ Agree
- ◯ Strongly Agree

11. Illiteracy

16. **There is illiteracy amongst the poor resulting in inability to use mobile banking services** *
Mark only one oval.

- ◯ Strongly disagree
- ◯ Disagree
- ◯ Neutral
- ◯ Agree
- ◯ Strongly agree

12. Poverty

17. **Poverty makes low income groups fail to use mobile banking innovations** *
Mark only one oval.

- ◯ Strongly agree
- ◯ Agree
- ◯ Neutral
- ◯ Disagree
- ◯ Strongly Disagree

13. Perceived security risks

18. **There is perceived security risks by the poor in using mobile banking innovations** *
Mark only one oval.

- ◯ Strongly disagree
- ◯ Disagree
- ◯ Neutral
- ◯ Agree
- ◯ Strongly Agree

14. Lack of legal and regulatory frameworks

19. **There is a lack of legal and regulatory frameworks for mobile banking innovations for the poor** *
Mark only one oval.

- ◯ Strongly disagree
- ◯ Disagree
- ◯ Neutral
- ◯ Agree
- ◯ Strongly agree

15. Perceived usefulness

20. **There is a no perceived usefulness by the poor to use mobile banking innovations** *
Mark only one oval.

- ◯ Strongly disagree
- ◯ Disagree
- ◯ Neutral
- ◯ Agree
- ◯ Strongly Agree

16. Ease of use

21. **There is no ease of use perceived in using mobile banking innovations by the poor** *
Mark only one oval.

- ◯ Strongly disagree
- ◯ Disagree
- ◯ Neutral
- ◯ Agree
- ◯ Strongly Agree

D. Critical success factors of mobile banking innovation

1. Low cost

22. **Mobile banking innovations should have low cost to accommodate the poor** *
Mark only one oval.

- ◯ Strongly agree
- ◯ Agree
- ◯ Neutral
- ◯ Disagree
- ◯ Strongly Disagree

2. Convenience

23. **Mobile banking innovations should provide convenience for the poor** *
Mark only one oval.

- Strongly disagree
- Disagree
- Neutral
- Agree
- Strongly Agree

3. Trust

24. **Mobile banking innovations should be perceived trustworthy by the poor** *
Mark only one oval.

- Strongly agree
- Agree
- Neutral
- Disagree
- Strongly Disagree

4. Education

25. **The poor should be educated on the use of Mobile banking innovations** *
Mark only one oval.

- Strongly disagree
- Disagree
- Neutral
- Agree
- Strongly agree

5. Awareness

26. **Mobile banking innovations should be marketed to the poor** *
Mark only one oval.

- Strongly agree
- Agree
- Neutral
- Disagree
- Strongly Disagree

6. Clear regulation

27. **Mobile banking innovations should have clear regulations to accommodate the poor** *
Mark only one oval.

- Strongly agree
- Agree
- Neutral
- Disagree
- Strongly Disagree

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