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The impact of mobile banking on the bottom of the pyramid consumers in South Africa

by

Thobile Tshabalala

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

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ABSTRACT

Developments in information and communication technologies (ICTs) have revolutionised banking, in that consumers can make use of mobile devices to conduct daily banking, independent of a traditional bank branch. The adoption of mobile banking has continued to be low in South Africa, at 24%, while the mobile phone market has experienced a significant increase in market penetration to 96%. However, very few studies have investigated the impact of mobile banking among bottom of the pyramid consumers. Therefore, the purpose of this study is to investigate the influence of financial literacy, social pressure and perceived credibility on the adoption of mobile banking among the bottom of the pyramid consumers in South Africa. An empirical study on bottom of the pyramid consumers in Johannesburg, South Africa with a sample of 235 questionnaires was conducted. The measurement items were assessed through three hypotheses using Structural Equation Modelling with IBM SPSS 23 and AMOS 23. The results confirm that all three hypotheses are significant and supported by indicating that financial literacy, social pressure and perceived credibility have an impact on mobile banking among bottom of the pyramid consumers. The findings revealed that social pressure and mobile banking was the weakest significant relationship, while perceived credibility had the strongest significant relationship on mobile banking. This study adds to the theoretical knowledge of financial literacy, social pressure and credibility as the factors that impact on mobile banking among bottom of the pyramid consumers. The managerial implications of the study indicate that in order for managers to increase mobile banking adoption, they need to create strategies that will drive education around mobile banking, use other people as advocates and place emphasis on communicating the safety and privacy of the services. Recommendations, limitations and future research on mobile banking are discussed.

Keywords: Mobile Banking, Financial Literacy, Perceived Credibility, Social Pressure, Bottom of the Pyramid

DECLARATION

I, Thobile Tshabalala, declare that this research report is my own work except as indicated in the references and acknowledgements. It is submitted in partial fulfillment of the requirements for the degree of Master of Management in Strategic Marketing in the University of the Witwatersrand, Johannesburg. It has not been submitted before for any degree or examination in this or any other University.

Thobile Tshabalala

Signed at……..

On the……day of……20……..

DEDICATION

This report is dedicated to my son, who has inspired me to further my education. My mother and grandmother are a constant reminder that education is an inheritance that never ends, and there are no barriers to it. This report is in their honour.

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It is not by my own wisdom and power, but by the grace of God that I have reached this stage - I praise you.

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CHAPTER 1. INTRODUCTION

This chapter outlines the purpose of the study and provides context of the environment within which the study exists. In addition to this, the research problem statement is articulated, as well as the research objectives and questions. Thereafter the significance and delimitations of the study are provided. This chapter concludes with the definition of terms, assumptions and structure that was made in the study.

1.1 Purpose of the study

The purpose of this study is to investigate the influence of financial literacy, social pressure and perceived credibility on the adoption of mobile banking among the bottom of the pyramid consumers in South Africa.

1.2 Context of the study

In the last three decades, developments in information and communication technologies (ICTs) have revolutionised banking, in that consumers can make use of mobile devices to conduct daily banking, independent of a traditional bank branch (Shambare, 2011). Mobile banking is regarded as one of the electronic banking channels (Akturan & Tezcan, 2011). The Bank of America offered the market its first mobile banking service in 2007, and grew this number to seven million active consumers using mobile banking (Valentine, 2011). Mobile banking is an emerging aspect of electronic banking that is a platform for automated banking and other financial services offerings, and it is a wireless banking service delivery channel that offers extra value to consumers by providing virtual access to banking services anywhere in the world (Sayid & Echchabi, 2013). Mobile banking has progressed from being a channel experiment to being a fundamental part of the banking delivery network, resulting in loyal consumers that are engaged and highly profitable (Valentine, 2013).

Ngai and Gunasekaran (2005) state that the usage of mobile, wireless systems and devices will continue to grow. However, there are still some barriers to be overcome

by consumers in order to drive mobile banking adoption (Laukkanen & Kiviniem, 2010).

There has also been an increase in mobile technology in the past few years, creating new opportunities of growth for m-commerce with potential revenue of $31.7 billion by 2005 (Ngai & Gunasekaran, 2005). The meeting of the mobile device and the internet led to a shift in how consumers engage with financial institutions (Cheah, Teo, Sim & Oon, 2011). It is these channels that can lead to growth because they provide the ability for banks to reduce the cost to serve its consumers (Dimitriadies & Kyrezis, 2010). Mobile banking does not only benefit financial services companies, but also benefits consumers as they are able to conduct banking 24 hours a day, all week, at their place of choice (Gu, Lee & Suh, 2009). In a number of developed countries, saturation of phone ownership is starting to occur, as penetration rates spread to more than 70% (Barnes & Corbitt, 2003).

In 2002, South Africa had three million internet users, of which only a third used mobile banking (Brown, Cajee, Davies & Stroebel, 2003). This study further mentions that there were 13 million mobile phone subscribers in the same period, leading to a conclusion that internet banking had an estimated 7% penetration rate. According to Finscope Research (2014), the adoption of mobile banking has continued to be low in South Africa, at 24%, while the mobile phone market has experienced a significant increase in market penetration to 96%. Furthermore, the cell phone penetration rate in South Africa far outstrips mobile banking usage, among the banked population of South Africa (Finscope Research, 2014). In addition to this, 75% of the population have access to banking services thus making the adoption of mobile banking a potential growth area (Finscope Research, 2014). However, the mobile banking adoption rate has not increased at the same rate as the cell phone penetration level.

About 40% of South Africans have access to the internet, which is the highest internet penetration in Africa (Salahuddin & Gow, 2015). They further state that the expanded infrastructure has reduced the cost of the internet and creates a favourable environment for South Africa to become a digital economy.

1.3 Problem statement

According to Cruz, Barretto, Neto, Mumoz-Gallego and Laukkanen (2010), the fast technological advance has not resulted in the increase of mobile banking in other emerging markets, such as Brazil. In one of the early studies on mobile banking, Adams, Nelson and Todd (1992) investigated the legitimacy of the Perceived Ease of Use (PEOU) and Perceived Usefulness (PU) on the adoption of new technologies, such as email and voice mail, across different organisations. PEOU was further investigated by Venkatesh (2000) in relation to general anchors such as control, intrinsic motivation and emotion, this study was focused on employees of a financial services company, who were moving to a different technology in their work. In a study conducted in Finland, demographic profiles were studied to determine their influence on the use of mobile banking amongst users and non-users (Mattila, 2003). In another study in Taiwan, Luarn and Lin (2005) examined the impact of PU, PEOU, Perceived Credibility, Perceived Self-efficacy and Perceived Financial Cost on mobile banking. In South Korea, Lee, Lee & Kim (2007) conducted a study on perceived risk and trust in mobile and found that trust influenced the level of mobile banking adoption among mobile banking users, who were between the ages of 20 and 40. In their study in Malaysia, Hanudin, Abdul, Suddin and Zuraidah (2008) assessed the impact of perceived credibility, normative pressure and available information on mobile banking among banking consumers. Similarly, another study conducted by Riquelme and Rios (2010) tested the perceived risk and PEOU, but added relative competitive advantage and social norms to their study based on a sample of internet banking users in Singapore. In a recent study in Malysia, Amin, Rezaei and Abolghasemi (2014), the impact of PU, PEOU and trust on the satisfaction of mobile website was investigated among mobile phone users.

In a study conducted by Moraczynski and Miscione (2008) on m-pesa in Kenya, examined how trust can be built and continued in the mobile transaction environment. M-pesa was introduced in Kenya in 2007, and it enabled people, particularly those in the unbanked population, to send each other money via the mobile telephone (Moraczynski & Miscione, 2008). In a study conducted in Turkey among university students who were non-users of mobile banking, it was found that PU, perceived social risk, perceived threat and perceived benefits affected the

attitude that consumers had on mobile banking (Akturan & Tezcan, 2012). While in Somalia, attitude and willingness to adopt mobile banking were tested by Sayid and Echchabi (2013), which resulted in perceived ease of use and perceived usefulness being influencers of attitude towards mobile banking. In Tunisia, Chemingui and Lallouna (2013) found that tradition accounted for a resistance towards using mobile banking.

Brown, et al. (2003) tested how relative advantage, trial ability, need for banking services and a lower perception of risk impact on the adoption of mobile banking, among those familiar with cell phones and banking in the Western Cape. A similar study by Brown and Molla (2005) ranked various attributes in the order that they impact the adoption of mobile banking, i.e. trial ability, compatibility, perceived risk, enabling to manage finances, its complexity to use, its ability to increase the user's status and lastly, the mental effort required to use mobile banking among university students and graduates. Masinge (2010) tested the PU, PEOU, perceived cost, trust and perceived risk among the bottom of the pyramid market segment. Shambare (2011) conducted a study across Limpopo, Gauteng and Mpumalanga among people who have a bank account or a cell phone, exploring how innovation characteristics influence their use of mobile banking.

Clearly there are few studies conducted in South Africa that determine how financial literacy, perceived credibility and social pressure constructs influence the adoption of mobile banking among the bottom of the pyramid consumers in South Africa. This study seeks to find a solution to this problem.

1.3.1 *Main problem*

Researchers have demonstrated that perceived usefulness, consumer awareness, perceived ease of use and perceived risk are the important factors for mobile banking adoption (Safeena, Date, Kammani & Hundewale, 2012). Studies have dealt with the direct impact of mobile banking adoption, yet there is little research that has examined different relationships, such as factors pertaining to financial literacy (Ha, Canedoli, Baur & Bick, 2012); how social pressure can expand the capability to predict mobile adoption intention more accurately (Yang, Lu, Gupta, Cao & Zhang,

2012; Yu, 2012; and Jeong & Yoon, 2013) and perceived credibility (Tang, Lin, Wang & Wang, 2004). Park, Yang and Lehto (2007) maintain that research should develop studies concerned with differentiating consumer adoption of mobile banking across economic levels. Studies can be conducted in developing countries to determine factors which feature prominently in the decision to adopt mobile banking (Crabbe, Standing & Standing, 2009). Thus, the intention of this study is to investigate the impact of financial literacy, social pressure and perceived credibility on the adoption of mobile banking among the bottom of the pyramid consumers in South Africa.

1.3.2 *Sub-problems*

The first sub-problem investigates the impact of financial literacy, social pressure and perceived credibility on the adoption of mobile banking.

The second sub-problem investigates the impact of mobile banking among the bottom of the pyramid consumers in South Africa.

1.4 Research questions

The research questions that this study sought to answer are:

1. What is the impact of mobile banking adoption among the bottom of the pyramid consumers in South Africa?
2. What is the impact of financial literacy on the adoption of mobile banking among the bottom of the pyramid consumers in South Africa?
3. What is the impact of social pressure on the adoption of mobile banking among the bottom of the pyramid consumers in South Africa?
4. What is the impact of perceived credibility on the adoption of mobile banking among the bottom of the pyramid consumers in South Africa?

1.5 Significance of the study

The sluggish adoption rate of mobile banking remains a dilemma for managers and scholars globally, prior studies on mobile banking adoption behaviour lack examination on low-income non users' adoption behaviour (Raleting & Nel, 2010). There are over 26 million mobile phone users in Sub-Saharan Africa, which signals the development of e-commerce (Meso, Musa & Mbarika, 2005). This is supported by Aker and Mbiti (2010), confirming that access and use of mobile telephones in Africa has increased over the past decade, and that mobile phones will progress from being communication implements into being able to deliver a service, like mobile banking. Researchers such as Talukder, Quazi and Sathye (2014) looked at the factors affecting usage behaviour namely, perceived usefulness (PU), perceived ease of use (PEOU), perceived credibility, trust, systems quality, social influence and behavioural intention. Usage, value, risk, tradition, and image in a mobile banking context was examined by Laukkanen and Kiviniem (2010), while relative advantage, compatibility, complexity, trial ability, banking needs, risk, internet experience, self-efficacy, subjective norm was studied by (Brown, et al., 2003).

Some researchers like Mazzon and Hernandez (2010) looked at thirteen variables – relative advantage, compatibility, image, results demonstrability, trialability, visibility, PEOU, self-efficacy, resource facilitating condition and subjective norm. Innovation resistance, PEOU, PU, social and cultural factors were examined by Barati and Mohammadi (2009); reasoning, referencing and contextual factors by Dewan, Low, Land and Dewan (2009); demographic and personal innovativeness by Sulaiman, Jaafar and Moneza (2007). Mobile banking is still in its infancy in developing countries and has a great potential for growth, thus facilitating the need to understand acceptance of mobile banking amongst consumers and the factors influencing their use of mobile banking (Luarn and Lin, 2005).

The challenge of adopting mobile phones for banking services has increasingly become popular to researchers and marketing professionals. Based on the above argument, few studies have looked at financial literacy, social pressure and perceived credibility on mobile banking. Therefore, this study seeks to understand the impact of financial literacy, social pressure and perceived credibility on mobile

banking among the bottom of the pyramid consumers in South Africa. It aims to contribute to the existing knowledge on factors influencing the use of mobile banking namely, financial literacy, social pressure and perceived credibility.

The second contribution is to provide guidance to financial institutions on how best to promote the use of mobile banking services, to reduce their cost to serve and improve banking service delivery to consumers at the bottom of the pyramid.

1.6 Delimitations of the study

The study has the following delimitations:

- Only the respondents who earn an income less than R5 000 per month were included in the study.
- Only the respondents who have bank accounts and reside in Johannesburg South Africa were included in the study.
- Only the respondents who receive a regular income and have access to the internet via their mobile phones were included in the study.
- Only financial literacy, social pressure and perceived credibility were investigated in the study.

1.7 Definition of terms

The terms that are central to this study are defined below:

1.8.1 Mobile Banking

Is defined by Petrova (2012) as the capability to perform financial or banking transactions via a mobile phone.

1.8.2 Perceived credibility

Wang, Lin and Luarn (2006) define perceived credibility as the degree to which a consumer trusts that using mobile banking will not compromise their security and privacy.

1.8.3 Financial literacy

As defined by Shambare and Rugimbana (2012) is the ability of consumers to make informed financial decisions based on the prevailing economic environment, on their own to benefit their financial well-being.

1.8.4 Social pressure

Amin, Hamid, Lada and Anis (2008) define social pressure as a person's view of having to do something that is stated by those that are important to him.

1.8 Assumptions

The assumptions pertaining to this study were as follows:

It was assumed that mobile banking is not limited to cash remittances, but includes other transactional capability like balance enquiry, inter account transfers etc.

It was assumed that respondents know what mobile banking is and how to perform the various functions.

It was assumed that respondents have limited understanding of what perceived credibility, financial literacy and social pressure are.

1.9 Structure of the study

The proposed structure of the study consists of chapter 1, which discusses the introduction of the study with specific referenced to context of the study, main problem to identify the research gap and significance of the study to indicate how the study will make academic and management contributions. Chapter 2 looks at the literature review of each construct relevant to the study. Chapter 3 details the research methodology in terms of understanding the sample size, how the data was collected and analysed. Chapter 4 presents the findings from the data collected using SPSS 23 and AMOS 23. Chapter 5 discusses the hypothesis results and lastly, chapter 6 provides the conclusion and recommendation of the study.

1.10 Conclusion of the chapter

This chapter provided the context of the study and the context of mobile banking both from a developed countries and developing countries context. The main problem, research objectives and questions were outlined. Furthermore, the significance of the study and the theoretical and management contributions were discussed. Also, the delimitations and definitions of terms pertaining to the study were explored. Lastly, the assumptions and structure of the study, which guides the discussion of the next chapters were outlined.

CHAPTER 2. Literature review

2.1 Introduction

This chapter discusses the theoretical grounding. In addition to the literature on mobile banking, financial literacy, social pressure and perceived credibility is discussed. Furthermore, the conceptual model and research hypothesis are outlined, as well as the conclusion of the chapter.

2.2 Theoretical grounding

The theory of planned behaviour is the theory underpinning this study.

2.2.1 *Theory of planned behaviour*

The theory of planned behaviour (TPB) evolved from the theory of reason action, by incorporating additional constructs such as perceived behaviour control (Ajzen, 1991). The TPB is a widely applied theory that enlightens human behaviours over a cognitive model, which is anchored in attitudes and beliefs. TPB is a social-cognition model (Gwyther & Holland, 2015). TPB is a theoretical framework to methodically assess factors that influence behavioural change, a person's behaviour is grounded by their willingness to perform a specific intentional behaviour and thus, intention is an immediate antecedent of behavior, based on a person's attitude (Pakpour, Zeidi, Emamjomeh, Asefzadeh & Pearson, 2014). According to the TPB, a person's behaviour is explained by their behavioural intention that is influenced by three determinants namely, perceived behavioural control, attitude and subjective norms (Luarn & Lin, 2015), each determinant varies across situations and behaviour (Simon, 2016). These three variables define the intention to perform the behaviour, intention in turn, directly influences behaviour (Masud, Al-Amin, Junsheng, Ahmed, Yahaya, Akhtar & Banna, 2015). TPB is illustrated in figure 1.

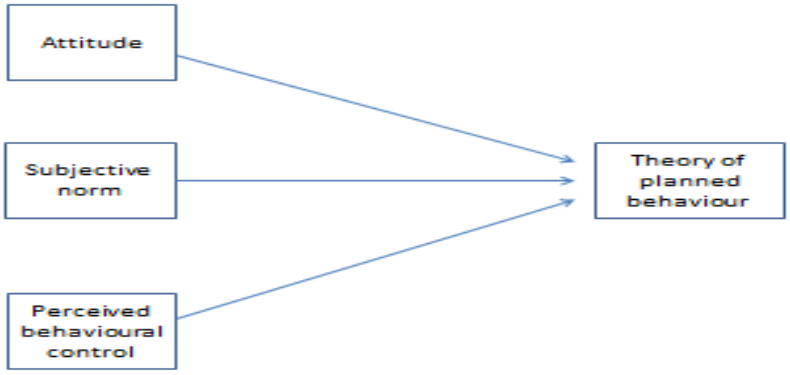


Figure 2.1: The theory of planned behaviour model

Source: Ajazen (1991)

Perceived behavioural control denotes a person's perceptions of the occurrence or non-existence of the necessary possessions or opportunities essential for performing a behaviour (Luarn & Lin, 2015). Perceived behavioural control is understood from an external and internal control perspective; internal control pertains to a person's disposition relating to their skills, abilities, emotions and amount of information obtained concerning a specific behaviour; and external control governs the degree to which a condition enables or restricts the performance of a behaviour (Ajzen & Madden, 1986). Specificity is essential to the performance of the TPB, diverse behaviours will be impacted by a distinctive and possibly widespread set of control factors (Flannery & May, 2000).

Subjective norm is the social pressure of engaging or not engaging in a behaviour (Pakpour, et al., 2014). According to Ajzen (1991), subjective norm is a weak predicator of behaviour and needs to be replaced with a moral norm and moral obligation. TPB has been criticised for overlooking moral consideration (Chen, 2016). Previous studies point out that a person's moral obligation is a predictor of behaviour and can significantly improve intentions (Chen, 2016). Attitude is the extent of a person's favourable and unfavourable assessment towards the behaviour (Paul, Modi & Patel, 2015). Ajzen (2013) criticised TBP as a weak predictor of actual

behaviour. Barton, Kologi and Siron (2016) argue that TPB seems to be reasonably useful in foreseeing behavioural intentions and actual behaviours.

In their study, Pakpour, et al. (2014) used the TPB in examining factors associated with household waste and found that educational material targeted at moral obligation and action planning are effective. Similarly, using the TPB, Rowe, Andrews, Harris, Armitage, McKenna and Norman (2015) identify the pre-driver belief primarily on intentions to drive over the speed limit, as a result of high risk accidents during the first few months of driving, subjective norms and perceived behavioural control were significant. Safe food handling behaviour in applying TPB found moral norms as a stronger predictor of intention, while perceived behavioural control differed (Mullan, Allom, Sainsburg & Monds, 2015). Donald, Cooper and Conchie (2014) tested the TPB in the context of transport mode, whether participants used public transport or drove to work, the results indicated that the three determinants (perceived behavioural control, subjective norm and attitudes) impacted on both modes of transportation. The TPB was investigated in the purchasing of organic food; it was found that students' attitude was the main predictor of intention to purchase organic food, the results revealed that perceived behavioural control and subjective norms are weak predictors (Yazdanpanah & Forouzani, 2015).

In a study on analysing environmental integration of walking habits with the TPB, the findings suggest the theory provides the grounding to predict walking in adults in the Korean context (Lee, 2016). In their study on TPB in the context of fresh fruit and vegetable consumption amongst Australian young adults, the findings indicate that the TPB does not support the intake of fresh fruit and vegetables (Kothe & Mullan, 2014). Dawson, Mullan and Sainsbury (2015) use the TPB in measuring the motivation for recovery in anorexia nervosa and perceived behavioural control indicates a strong predictor of intention to recover, while attitudes was a predictor of the intention to eat normally. Lash, Smith and Rinehart (2016) tested the TPB in the intention to predict dietary behaviour and found that the theory did not significantly predict intention to diet due to the complex nature of losing weight. In their study, Riebl, MacDougal, Hill, Estabrooks, Dunsmore, Savla, Frisard, Dietrich and Davy (2015) evaluate the impact of the TPB on predicting sugar sweetened beverage

consumption in adolescents and the choices influenced by their parents, the results revealed a small and insignificant impact on adolescents consumption.

As seen above, very few studies have examined the impact of mobile banking using the TPB within the context of consumers in the bottom of the pyramid. In line with TPB, gauging perceptions on the accessibility of specific resources could support management in recognising opportunities for the mediation to increase mobile banking use and build financial literacy programmes to sustain its use and drive credibility.

2.3 Mobile Banking

Mobile commerce has been evolving rapidly in the world, mobile banking as a transaction service has only been embraced by a minority of consumers, and this raises the need to implement effective measures to enable user adoption and the habit of mobile banking (Zhou, 2012). According to Baptista and Oliveira (2015), the fast development of communications, mobile expertise, and the explosion of smart devices has amplified the importance of mobile banking facilities for banks and consumers. In emerging countries, particularly in Africa, mobile banking ought to play an important role in providing a solution to overcome financial segregation and distance by enabling a majority of the population to perform financial transactions (Baptista & Oliveira, 2015). Banking has evolved from an out-dated brick and mortar model of consumers queuing for products and services in the banks to a modernised banking where banks can be accessed anywhere for their services (Sharma. 2011). The emergence of mobile banking services epitomises an innovation where an intangible service and an innovative medium of service distribution using high technology, are contemporary (Sharma, 2011).

The rapid expansion of information technology has impacted on the banking industry globally through the introduction of mobile banking (Amin, Baba & Muhammad, 2007). With the number of mobile phone users growing, services and purchasing products using mobile phones and other smart phones are also increasing (Barati & Mohammadi. 2009). A report by McKinsey and Company (2010) state that extremely poor people in emerging countries, not only have an astounding amount of interest in

financial services but use them enthusiastically, despite a shared assumption that individuals with little money are quite uninterested in banking.

Branch based retail banking remains popular all over the world, however technology is changing the way banking is designed and delivered to consumers (Tang, Lin, Wang & Wang, 2003). There are over a billion people in the world that do not have bank accounts but have access to a mobile device, this gave rise to innovation in making basic banking available to consumers to use their mobile phones as the primary tool for banking transaction (Panjwani & Cutrell, 2010). Mobile banking co-exists with mobile devices and communication networks, without these important components mobile banking is not possible (Baptisa & Oliveira, 2015). When presented with new technology, a number of factors affect when and how consumers use it (Duada & Lee, 2015). Mobile banking has become popular amongst marketing scholars, information systems professionals and service providers, and they are taking advantage of this business opportunity to build and gain a competitive advantage in the market place (Laukkanen & Kiviniemi, 2010). Mobile banking is defined by Barnes and Corbitt (2003) as a channel that enables the consumer to engage with a bank via a mobile phone, using data. In a paper by Barati and Mohammadi (2009), mobile banking is defined as a manner in which financial services are delivered to the consumer using a mobile phone.

In South Africa, Shambare (2011) explains mobile banking as a similar channel to internet banking, whereby consumers can conduct their banking via a mobile phone, such as paying accounts, transferring money and managing bank accounts. In another paper by Petrova (2012), a similar definition of mobile banking was offered as the ability of consumers being able to conduct their banking affairs via a mobile phone. Sayid and Echchabi (2013) defined it as a channel that offers anytime and anywhere banking access to consumers. Shaikh and Karjaluoto (2015) posit that there are different terms of reference for mobile banking, such as m-payments, branchless banking and pocket banking. For the purpose of this study, mobile banking is defined as the ability to conduct traditional branch banking using a mobile phone.

Interestingly, Barnes et al (2003) concede that advanced mobile applications could offer shares trading and enable consumers to participate in the foreign exchange market. Therefore, mobile banking does not have a universal approach and differs in each country. In developing countries, mobile banking preserves currency value, converts the value into cash and also transfers value between consumer's accounts. According to Barati and Mohammadi (2009), mobile banking offers businesses the opportunity to increase productivity and profitability, as well as an endeavour by financial services providers to add value to consumers by creating more banking channels. It was found that mobile banking also increased a consumer's sense of control over their finances (Laukkanen & Lauronen, 2005). Ha, Canedoli and Baur (2012) mention that there is a lot of doubt about building a business case from it. It does however, offer the possibility to increase revenues by providing consumers products and services at all times, or decrease costs to serve consumers, by offering an alternative to traditional banking channels. On the contrary, mobile banking has many players who have vested interests (Lee, Sangjo & Kim, 2015). Ha, et al. (2012) acknowledges key advantages of mobile banking.

Table 1: A summary of the advantages of mobile banking

Advantage	**Description**
Ubiquity	Banking services are accessed from any location
Immediacy	Access to banking services at any time
Localisation	The banking service offer can be tailored to the consumer's location
Instant connectivity	A lot of mobile phones are "always on" making access to services easier

Proactive functionality	Information can be proactively sent to the consumer

Source: Ha, et al. (2012)

2.3.1 *Mobile banking in South Africa*

Mobile innovations are fueling economic and social growth in developing countries (Yong, Fang & Insu, 2012). Sub-Saharan Africa has the lowest level of infrastructure investment in the world, surprisingly there are ten times as many mobile phones compared to landline phones, thus connecting consumers with information, services and markets (Aker & Mbiti, 2010). Mobile technology is a common feature in consumers' daily lives with 60% coverage in Africa (Baptisa & Oliveira, 2015). According to Brown, et al. (2003), South Africa has two technologies to enable mobile banking: Wireless Application Protocol (WAP) and Wireless Internet Gateway (WIG). WAP, as described by Erlandson and Ocklind (2000), makes it possible for services to be provided through data to groups of people, anywhere and at any time, better than a personal computer. A WIG, as described by Takimoto (2004), relates to wireless telecommunications and wireless portals for routing messages from mobile devices to Internet destinations. Barnes et al (2003) state that South Africa also uses a WIZZIT, which is Unstructured Supplementary Service Data (USSD) as well as M-PESA. The WIZZIT enables consumers to send instructions to the bank via SMS, while M-PESA is a mobile based service that enables consumers to send and store money (Morawczynski & Pickens, 2009). Through a partnership between Vodacom and Nedbank, M-PESA was launched in 2010, to allow Vodacom subscribers to transfer money, without requiring a bank account, which also restricts the kind of banking services consumers can enjoy (Masinge, 2010).

The types of banking services that were offered via the mobile phone in 2007 were checking of account balances, transaction notification via SMS, payment of accounts, transfer of funds between accounts, sending and receiving of cash (Porteous, 2007). There are regulatory limitations such as FICA, which requires the bank to verify the account holder in order to limit financial crimes, which restrict

banks and mobile companies from providing creative products to consumers (Masinge (2010). Mobile banking users grew to 1.29 million consumers, managing their finances through this channel, with the majority banked with the four dominant banks in South Africa, First National Bank, Nedbank, Standard Bank and ABSA (Shambare, 2011). FNB reported that mobile banking was a profitable business in 2006, based on 160 000 new consumers (Porteous, 2007). According to Finscope Research (2014), mobile phone penetration is almost saturated and this will increase access to the internet. Over the past 10 years, 75% of the population has been given access to the banking sector, with 81% of this population using bank accounts to withdraw cash from Automated Teller Machines, only 24% of the banked population uses mobile banking (Finscope Research, 2014). Njenga (2012) identifies the drivers and constraint of mobile banking success within the African context.

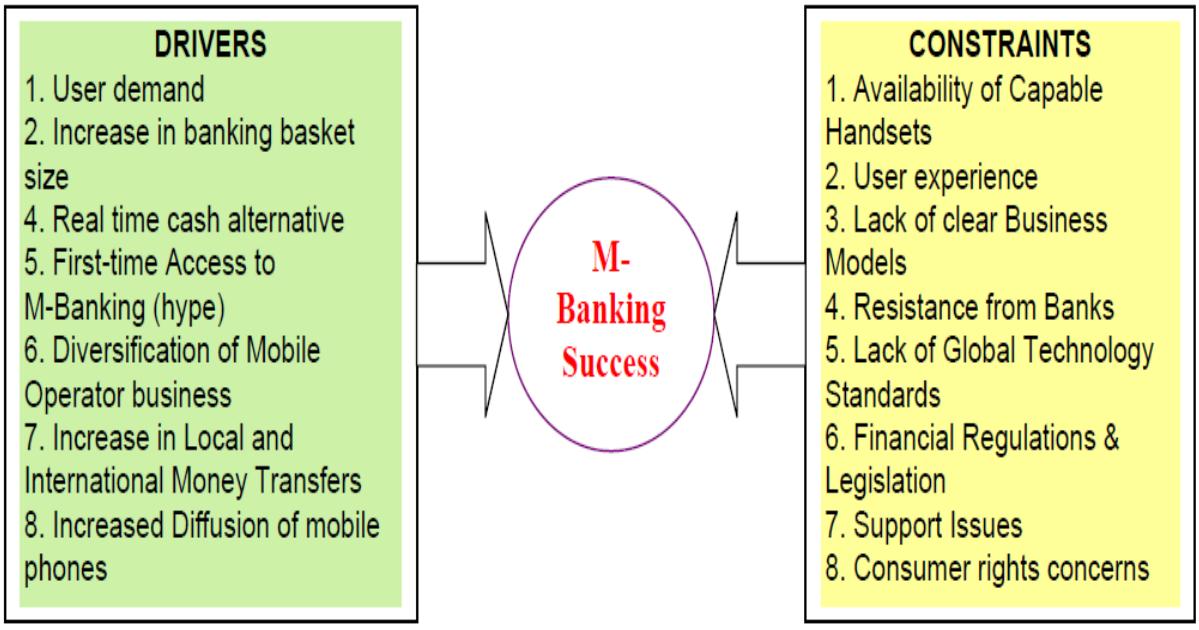


Figure 2: Mobile banking success

Source: Njenga (2012)

2.3.2 *Mobile banking adoption*

Laukkanen and Kiviniemi (2010) note image, risk, tradition, value, usage as some of the barriers of mobile banking. Oldenboom and Abratt (2000) acknowledge design,

technology, market, activity measures and commercial as the factors affecting new banking in the South African context. Tan and Teo (2000) list the factors that influence mobile banking adoption.

Table 2: Factors that influence mobile banking adoption

Factor	Description
Relative advantage	This is the perception that a person has new technology that is better than prior technology. This advantage has a positive correlation to the rate of the technology adoption, and leads to an assumption that the benefits of mobile banking would impact its adoption rate.
Compatibility	The degree to which a consumer's values are aligned with what the technology offers. Therefore, if consumers view mobile banking as compatible, they are likely to use it.
Complexity	The extent to which the technology is regarded as difficult to use. Thus the more complex a mobile phone is to use, them less likely it is to be used for banking.
Trialability	The possibility of users testing the technology before they can use it for their own benefit. Therefore, if mobile banking is demonstrated and allowed to be tried first, the more likely it is to be adopted.
Banking needs	The consumer's desire for broad banking services are likely to see the adoption of mobile banking
Risk	The extent to which consumers are concerned about disclosing certain information via mobile banking will impact their level of

	adopting it as a banking channel
Internet experience	The extent to which consumers have experience in using similar technology
Subjective norm	A view of the expectation that people of a higher status would expect a certain behaviour
Self-efficacy	The confidence that an individual has in demonstrating a behaviour, meaning that the more confident and skilled consumers are about mobile banking, the more likely they are to adopt it.

Source: Tan and Teo (2000)

2.3.3 *Mobile banking theoretical gaps*

Zhou (2012) developed a conceptual model as seen in figure 3 to understand users' initial trust in mobile banking from elaboration to likelihood perspective, the model includes central and peripheral cues, self-efficacy and initial trust. The findings suggest that organisations need to employ differentiated strategies to shape users' initial trust in mobile banking.

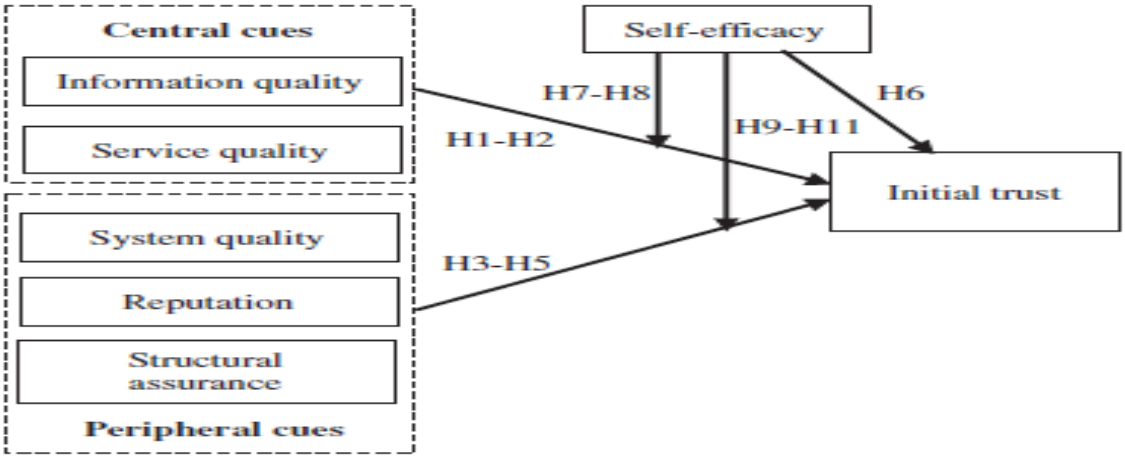


Figure 3: Zhou conceptual model

Source: Zhou (2012).

Baptista and Oliveira (2015) as seen in figure 4, combined the unified theory of acceptance and use of technology with cultural moderators. Power distance, collectivism, short term and uncertainty avoidance were found to be significant cultural moderators on mobile adoption.

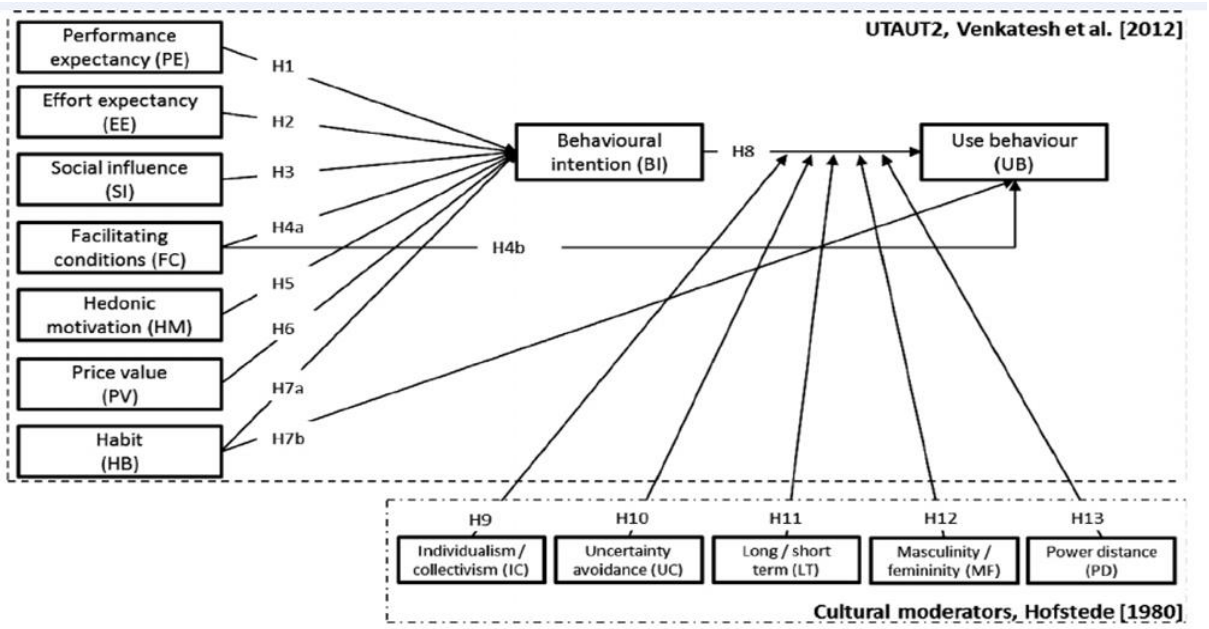


Figure 4: Baptista and Oliveira conceptual model

Source: Baptista and Oliveira (2015)

Research was conducted by Luarn and Lin (2004) to understand the factors affecting users' acceptance of mobile banking by testing perceived usefulness, perceived ease of use, perceived credibility, perceived self-efficacy and perceived financial cost on behavioural intentions, as depicted in figure 5. The findings found that these constructs support consumers' behavioural intentions to adopt mobile banking.

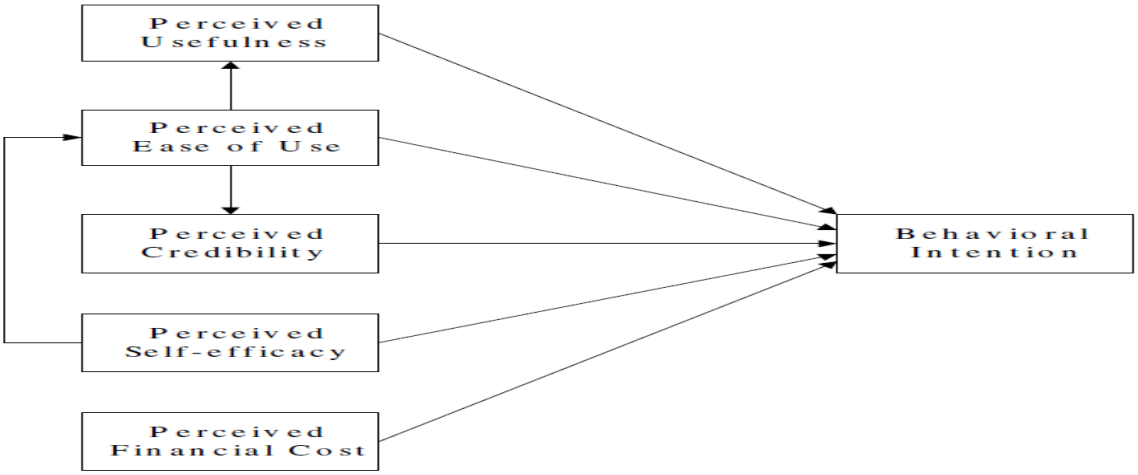


Figure 5: Luarn and Lin conceptual model

Source: Luarn and Lin (2004)

Shaw (2014) studied the influence of trust as a mediator in mobile banking, the model is extended with these constructs shown in figure 6. The results indicate that perceived usefulness is an important influencing construct and that informal learning is facilitated by trust.

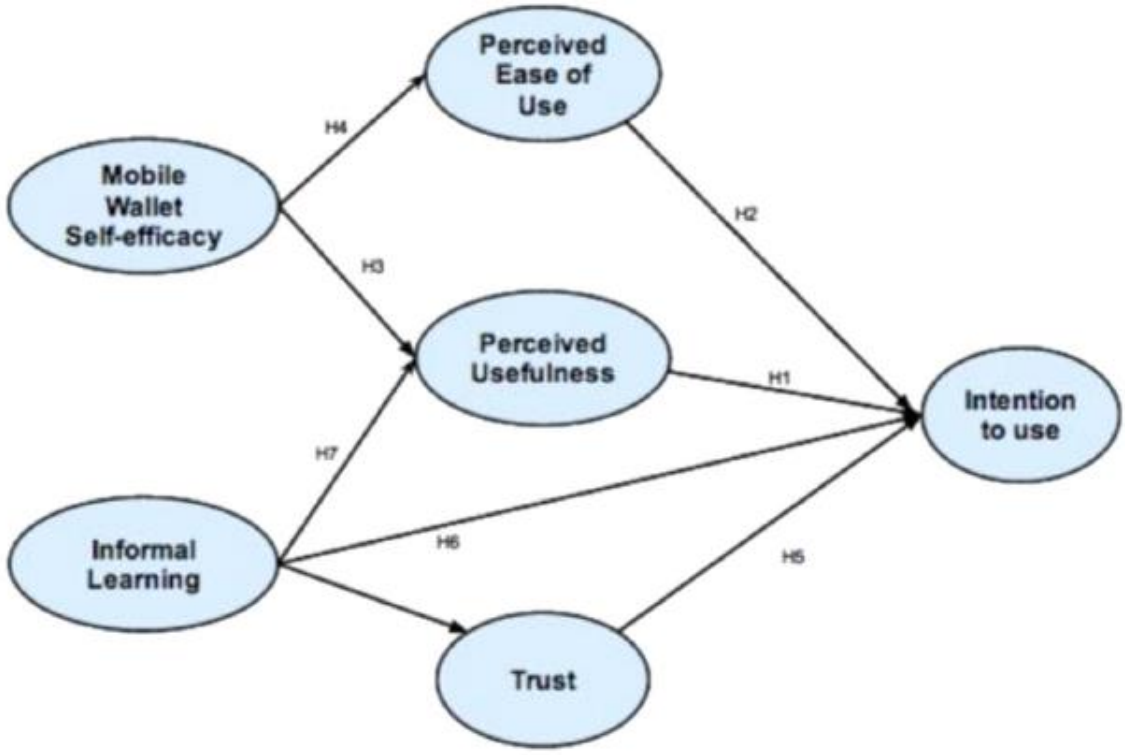


Figure 6: Shaw conceptual model

Source: Shaw (2014)

Saleem and Rashid (2001) examined mobile banking adoption in an extended model measuring these constructs in figure 7. The findings show that security and reliability of technology is very significant in adoption of mobile banking.

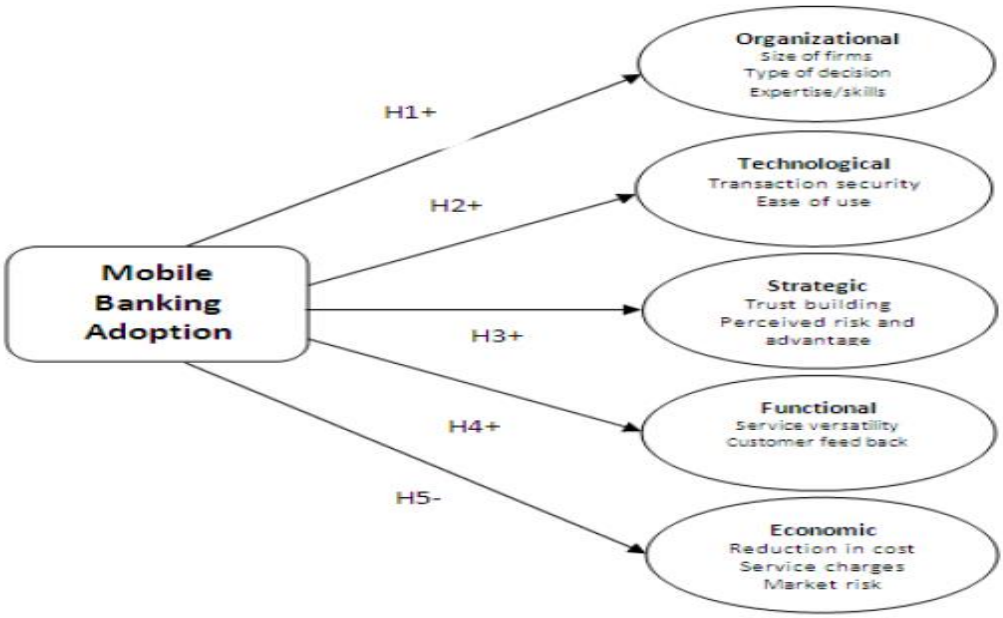


Figure 7: Saleem and Rashid conceptual model

Source: Saleem and Rashid (2011)

Laukkanen and Kiviniemi (2010) investigated the influence of information as a barrier to mobile banking by adopting five barriers as shown in figure 8. The results show that the guidance and information presented by a bank has the greatest significant effect on reducing the usage, image, value and risk barriers.

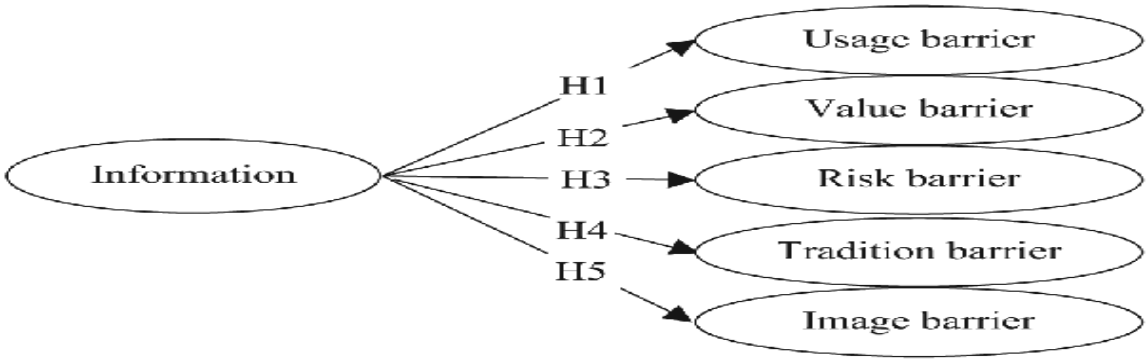


Figure 8: Laukkanen and Kiviniemi conceptual model

Source: Laukkanen and Kiviniemi (2010)

As discussed in the literature, very few studies look at financial literacy, social pressure and perceived credibility in a single study. This evidently indicates that there is a gap in the literature. The next section looks at financial literacy, social pressure and perceived credibility in depth.

2.4 Financial literacy

Financial literacy has become a topic of interest for scholars, professionals, government and educational institutions (Opletalová, 2015). There are mixed findings from scholars on the effectiveness of financial literacy (Lusardi & Mitchelli, 2007). It is also unclear as to whether financial literacy measures knowledge or capability (Van Rooij, Lusardi & Alessie, 2011). Lusardi, Michelle and Curto (2010) maintain that financial literacy impacts financial behaviour and people who are financially illiterate run the risk of being in debt. Financial literacy is diverse across social demographics and families. According to Kefela (2010), financial literacy programmes are not aimed at making people financial experts, but are meant to arm consumers with abilities and knowledge to make sound financial decisions, and better manage their finances. Russell, Brooks and Nair (2006) state that the accessibility of a variety of complicated products; the capacity for consumers to effortlessly obtain credit; including the plethora of advertising messages and the financial load that consumers are experiencing, are the drivers of financial literacy. Financial literacy can assist consumers to understand their personal financial options, make the most of these new opportunities, and to manage their financial obligations (Kefela, 2010).

According to Russell, et al. (2006), financial literacy is central in lessening financial marginalisation as there are empirical findings that support that financial literacy programmes are effective in improving the levels of financial competencies. Researchers, such as Lusardi and Mitchell (2007), acknowledge the significant relationship between financial literacy and education, if financial literacy is offered to

the less well off, the saving impact will be stronger. Financial literacy is widespread amongst women, the elderly and people with low education levels (Van Rooij, Lusardi & Alessie, 2007; Lusardi & Mitchell, 2005). Financial literacy is first and foremost, about empowering and enlightening consumers so that they are knowledgeable about finance in a way that is relevant to their lives and enables them to use this knowledge to evaluate products and make informed decisions (Kefela, 2010).

There has been growing concern over the levels of financial literacy in the world due to the high levels of debt and general financial failures and disadvantage, especially among low-income earners (Russell, et al., 2006). Financial literacy is defined by Mason and Wilson (2000) as a “meaning-making” process, whereby people use expertise, means, and circumstantial understanding to digest knowledge and make financial decisions, knowing the implications thereof. Cohen and Nelson (2011) define financial literacy as awareness, abilities and approach that a consumer needs to understand the products that he is purchasing. According to Titko, Ciemleja and Lace (2015), financial literacy is a combination of skills, attitude, awareness, knowledge, and behaviours necessary to make sound personal financial choices. Jang, Hahn and Park (2014) define financial literacy as a person’s capacity to make appropriate decisions about personal finances, which includes understanding, behaviour and approach. For this study, financial literacy is the capability to make informed decisions and to take effective decisions concerning the usage and management of money (Beal & Delpachitra, 2003).

In Africa, traditional branch-retail banking is not a feasible solution for numerous consumers living in rural and remote areas, high fees, low education, financial literacy, and the distances between banking facilities hinder simple transactions (Kefela, 2010). Furthermore, even within developed countries, such as the United States (U.S), financial literacy is low due to low levels of education and income (Lusardi & Mitchell, 2007). In the United Kingdom (UK), financial literacy is lower among younger people from lower social classes and income (Lusardi & Mitchell, 2007). Financial literacy is a significant tool to redress inequity and assist consumers to accept and utilise the products and services to which they gradually have access, as it can enable effective product use, and is central to financial inclusion (Cohen &

Nelson, 2011). According to Cohen and Nelson (2011), financial literacy has three critical roles to play:

1. At an Individual level, financial literacy assists families to utilise scarce resources more effectively, select the financial services and products that best meet their family needs and become 'hands-on' decision makers.
2. At an Institutional level, financial literacy helps knowledgeable consumers make better clients, decreasing organisational risk and contributing to a favourable bottom line.
3. In the market, financially literate consumers are a strategic element in effective consumer protection; increasing pressure on financial service providers for appropriately priced and transparent services.

People who are exposed to financial literacy in high school or the workplace tend to be more financially sophisticated and the reverse has implications as well, as people tend to plan less for retirement and therefore accumulate less wealth (Van Rooij, et al., 2007). Lusardi and Mitchell (2005) state that families that are less financially sophisticated, invest more and partake in risky asset markets. Shen, Lin, Tang and Hsiao (2015) state that government needs to educate people about finances in order to reduce financial disputes. Titko, et al. (2015) maintain financial literacy impacts on the lives of people, organisations and society at large, while financial literacy programmes help build the financial inclusion of those stakeholders. Evaluating financial literacy levels needs a clear understanding of the financial literacy theory and application of a suitable evaluation instrument (Titko, et al., 2015). Opletalová (2015) states that financial literacy should expand to incorporate financial capability, as it includes financial knowledge and understanding; financial responsibility; financial competence and skills.

2.4.1 *Financial literacy and mobile banking*

The dawn of mobile banking offers banks with a new reason to educate low income consumers to engage them online and in so doing, serve them less expensively (Servon & Kaestner, 2008). According to Njenga (2012). new mobile bank users can have low financial literacy and be exposed to loss of privacy, fraud and loss of service. The lack of experience with financial products and services may be the

cause of mobile banking adoption (Gross, Hogarth, & Schmeiser, 2012). When a person transitions from traditional banking to mobile banking, financial literacy becomes necessary due to the new change in behaviour (Cohen & Nelson, 2011). Furthermore, Cohen and Nelson (2011) state that the advent of mobile banking without financial information, education and orientation, assumes knowledge and experience to which a number of low income families cannot relate. The environment can deter or support mobile banking, therefore financial literacy should support these developments (Cracknell, 2004). In addition, Cracknell (2004) argues that mobile banking is more likely to involve financial literacy for the less privileged. Developing countries face regulatory and financial literacy issues on mobile banking, as a larger number of people still use traditional banking channels (Ha, et al., 2012). Access to information and technology can help low and moderate income earners be more financially savvy (Servon & Kaestner, 2008). In addition, Servon and Kaestner (2008) concede that inequalities, financial literacy and the digital divide separate the privileged and the under privileged. With sufficient financial literacy, consumers benefit completely from financial services and make knowledgeable choices with regards to personal financial management (Huhmann & McQuitty, 2009). Based on the argument above, the hypothesis is stated as:

H_{10}: Financial literacy influences mobile banking adoption among bottom of the pyramid consumers

H_{1A}: Financial literacy does not influences mobile banking adoption among bottom of the pyramid consumers

2.5 Social pressure

The role of social pressure is an important element of human behaviour (Pettersson-Lidbom & Priks, 2007). Social pressure is socially enforced and can be understood from three different categories; the first category is from the recognition of pressure, which is relatively known by people; the second category is internationalisation, the acceptability of a certain norm as proper and widely accepted; the last category is the enforcement of norms to recognise compliance with the norm (Gerber, Green & Larimer, 2008). According to Santee and Maslach (1982), social pressure has two

dimensions namely, conformity and non-conformity. A person is subject to social pressure to conform and have rewards to alter their behaviour (Dragone & Savorelli, 2012). Social pressure is only operative when the person is made aware of behaviour (Long, 1976). Social pressure includes social influence, prestige and acquaintances (Long, 1976). Social pressure is governed by the person's preference (Baron, 2009). The effectiveness of social pressure messages can influence a person's behaviour (Panagopoulos & Abrajano, 2013). Oo and Toth (2014) state that If a person is socially aware of their behaviour then they will be hesitant to act out anti-social behaviour. A person that is socially pressured has a sense of social obligation to perform (Lynn & Starbuck, 2014). Social norms can be agreed as the guidelines of behaviour for a given society to regulate and manage society (Panagopoulos & Abrajano, 2014). Social activists are often the mediators of social pressure (Baron, 2011). Panagopoulos (2011) posits the levels of social interaction and the capability to monitor behaviour in smaller communities, resulting in greater social pressure. Social pressure contributes to a good social public setting (Zizzo & Fleming, 2011). In their study, Edwards, Tod, Molnar and Markland (2016) note a correlation between social pressure and internalisation. Peoples' attitudes, beliefs, and behaviour can be influenced by three elements: internalisation, identification and compliance (Chaouali, Yahia & Souiden, 2016). Baron (2011) argues that in some sectors, consumers do not support social pressure.

Social pressure seems to decrease as a consequence of the flow of market-based transactions and economic development reduces the influence of social pressure (Yamamura, 2013). The impact of social pressure treatment is the result of alternative incentives from the extrinsic benefit of a behaviour (Mann, 2010). Dawson and Dobson (2009) suggest there is a level of biasness in decision making when social pressure is at play. Wallace, Paulson, Lord, and Bond (2005) state that there is a trade-off between attitudes and behaviour which is influenced by social pressure. Igbaria, Parasuraman and Baroudi (1996) state that social pressure can affect behaviour and comes from the person's beliefs and opinions that are important to them. Garicano, Palacios-Huerta and Prendergast (2005) mention that the quest for social approval, and social interdependencies has been offered as an enlightenment of consumption behaviour and social customs. Furthermore, Palacios-Huerta, et al.

(2005), argue that few empirical findings exist on social pressure. According to Mann (2010), in the context of voting, social pressure is defined as a set of guidelines for behaviour which is transferred by means of social engagement, accepted and internalised by each person, and enforced by social consent. Igbaria, et al. (1996) define social pressure as the beliefs about the appropriateness of a behaviour. Baron (2006) defines social pressure as an indicator of the inclinations of society for financial benefits and social responsibility of organisations. Social pressure has been defined by Goodman, Peterson-Badali and Henderson (2011) as an external factor that influences a person's behaviour. For the purpose of this study, social pressure is defined as the societal norms that influence mobile banking adoption.

2.5.1 *Social pressure and mobile banking*

Social pressure has been widely considered as an important element in explaining adoption (Yang, Lu, Gupta, Cao & Zhang, 2012). Amin, Hamid, Lada and Anis (2008) put forward that the motive behind a person using mobile banking is that they are influenced by people close to them who are using mobile banking. Amin (2009) states that people use mobile banking because it demonstrates personal identity. Social pressure is the most important construct in influencing mobile banking adoption by consumers (Teo, Tan, Cheah, Ooi & Yew, 2012). In line with the TPB, a persons' perceived social pressure is labeled as a subjective norm (Nasri & Charfeddine, 2012). Subjective norm is the perceived social pressure of whether to adopt a particular behaviour (Puschel, Mazzon & Hernandez, 2010). Social pressure by family, friends or people within the same social group towards mobile banking is significant (Teo et al., 2012; Puschel et al., 2010).

Mobile banking is more frequently used as a different means of traditional branch banking, where social pressure may be even more noticeable among consumers to differentiate themselves from others (Amin et al., 2008). Amran, Rahman, Yusof and Mohamed (2014) found that social value influences sustainability in the microfinance institutions in the Islamic community. The impact of others' opinions about a specific innovation adoption has an effect on intention of use of mobile banking (Pack, Yang & Lehto, 2007). Chaouali, et al. (2016) state that social pressure has a direct impact on mobile banking levels of trust in the online and offline channels of banking.

According to Puschel, et al. (2010), the higher the perception of social pressure to the use of mobile banking, the higher the intention to adopt it. Hence, this study's hypothesis is that:

H_{20}: Social pressure influences mobile banking adoption among bottom of the pyramid consumers

H_{2A}: Social pressure does not influences mobile banking adoption among bottom of the pyramid consumers

2.6 Perceived credibility

Scholars have started to examine perceived credibility as a source in the proliferation of new technology (Flanagin & Metzger, 2003). According to Yang (2007), perceived credibility expanded from the emergence of new technologies. Organisations utilise their positive impact on attitudes and behavioural intentions as a result of their perceived credibility (La Ferle & Choi, 2005). Three key concepts underpin perceived credibility, namely, abstraction, realism and accuracy (Bates-Brkljac, 2008). The traditional Technology Acceptance Model (TAM) expanded to include perceived credibility as a trust based construct (Jeong & Yoon, 2013). A more sophisticated layout, greater depth of content and personalised interactive features of technology innovation could potentially impact on perceived credibility (Flanagin & Metzger, 2007). On the contrary, Flanagin and Metzger (2007) state that perceived credibility varies per different platform. Pornpitakpan (2004) notes that trustworthiness, expertise and attractiveness of a product or service influences the consumers' perceived credibility. The credibility of the organisation influences the perceived credibility of the information (Kubiszewski, Noordewier & Costanza, 2011).

Xie, Miao, Kuo and Lee (2011) state that the presence of personal information has an effect on perceived credibility. Yung, Walsh-Childers and Kim (2016) deduce that source expertise had a core influence on perceived credibility. The more the level of perceived expertise by an organisation, the more the perceived level of value added (Liu & Leach, 2013). Newell and Goldsmith (2001) note the importance of

organisational reputation. Wang, Lin and Luarn (2006) define perceived credibility as the degree to which a person accepts as true that using mobile banking will be free of privacy and security issues. Quan, Hao and Jianxin (2010) define perceived credibility as people having the capability of mobile banking to complete their financial transactions with privacy and security of personal information maintained. Wang, Wang, Lin and Tang (2003) define perceived credibility as the degree to which one person believes that the other person has the necessary expertise to complete the job reliably.

The ethos of credibility consists of three distinct components: competence, the extent to which a person really knows what they are discussing; trustworthiness, the point at which a person perceives other people as being honest; and goodwill, the perceived compassion a person perceives in a source (Wrench & Booth-Butterfield, 2003). Bates-Brkljac (2008) argues that credibility is indistinguishably confused with perception and cognition. The credibility of an organisation builds the brand equity of their product and services (Newell & Goldsmith, 2001). Once a source is considered to be credible, the information delivered is highly persuasive and highly likely to lead to behavioural intention (Liu & Leach, 2013). Beyond the normal attitude of consumers towards a brand, perceived credibility is being examined and its relationship on believability is noted (La Ferle & Choi, 2005). Marshall and Woonbong (2003) acknowledge a relationship between trust and perceived credibility of brands. Newell and Goldsmith (2001) posits credibility as a set of perceptions towards a source and has two dimensions namely trustworthiness and expertise. Newell and Goldsmith (2001) state that credibility will also influence emotional intention. Subject to the level of deceitfulness and truthfulness, people will decode messages using different cognitive systematic or heuristic paths, different sources of message manipulation impact on perceived credibility (Yung et al., 2016).

High levels of information lead to higher perceived credibility (Yung et al., 2016). Yang (2007) acknowledges close connections between source credibility, perceived credibility, and message quality. Kim, Kiousis and Molleda (2015) state that the level of messages will affect the level of perceived credibility on the organisation. Online review induced a higher level of perceived credibility (Xie et al., 2011). In their study, Gao, et al. (2015) found no significant difference in the perceived credibility of user

and expert information selected. Negative comments demonstrated lower levels of perceived credibility of product and service information (Gao, et al., 2015).

2.6.1 *Perceived credibility and mobile banking*

Perceived credibility is typically objective and relies on the organisational reputation, economic reasoning and information (Wang, et al., 2003). Afshan and Sharif (2016) incorporated perceived credibility and perceived convenience in the context of the unified theory of acceptance and usage of technology within mobile banking. They found that perceived credibility, perceived convenience, effort expectancy, performance expectancy and social influence caused significant positive influence on people's intentions to use mobile banking. The perceived credibility that people have in the capability of the mobile banking services to complete their financial transactions securely and to preserve the privacy of their personal information, influence their intentional acceptance of mobile banking (Wang, et al., 2006). Perceived credibility can be an antecedent of mobile banking adoption (Luarn & Lin, 2005). In their study on mobile banking in the developing country context, it was found that perceived credibility was an important determinant of mobile bank usage (Amin, 2007). Safety and privacy threats of users play an important role in the usage of mobile banking (Luarn & Lin, 2005). The lack of perceived credibility reveals the concerns that the users' personal information can be exposed to hackers. The effect of social and cultural features on mobile banking adoption in Ghana, showed that social and cultural features in the form of perceived credibility can influence adoption and maintain usage (Jeong & Yoon, 2013). Wang, et al. (2003) argue that perceived credibility reflects privacy and safety measures on mobile banking acceptance. Yu (2012) notes that mobile banking adoption is influenced by perceived credibility and other factors such as perceived usefulness and perceived ease of use. Quan, et al. (2010) deduces that perceived credibility has a significant positive impact on behavioural intentions to use mobile banking. Amin (2009); Crabbe, Standing, Standing and Karjaluoto (2007); and Luarn and Lin (2005)] empirically found that perceived credibility significantly influenced people's intention to adopt mobile banking. A change in perceived credibility can cause a change in attitude (Crabbe, et al., 2007). The proposed hypothesis is:

H_{30}: Perceived credibility influences mobile banking adoption among bottom of the pyramid consumers

H_{3A}: Perceived credibility does not influences mobile banking adoption among bottom of the pyramid consumers

2.7 Conceptual model and research hypotheses

In reviewing the literature, the conceptual model is illustrated in figure 9 with a summary of hypotheses.

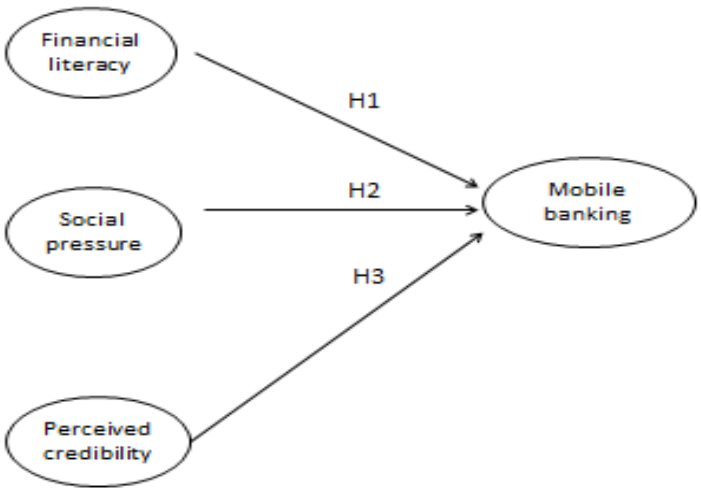


Figure 9. Conceptual model

Source: Own compilation (2015)

H_{10}: Financial literacy influences mobile banking adoption among bottom of the pyramid consumers

H_{1A}: Financial literacy does not influences mobile banking adoption among bottom of the pyramid consumers

H_{20}: Social pressure influences mobile banking adoption among bottom of the pyramid consumers

H_{2A}: Social pressure does not influences mobile banking adoption among bottom of the pyramid consumers

H_{30}: Perceived credibility influences mobile banking adoption among bottom of the pyramid consumers

H_{3A}: Perceived credibility does not influences mobile banking adoption among bottom of the pyramid consumers

2.8 Conclusion of the chapter

Within the study of mobile banking, a number of researchers use the TAM model to underpin their study, thus this study opted to use the theory of planned behaviour. This theory was discussed to ascertain where it was developed and how it has evolved since 1991 and where various studies have applied it. The chapter proceeded to discuss the key constructs of this research, namely, financial literacy, perceived credibility and social pressure and hypothesised that they indeed have an impact on mobile adoption.

CHAPTER 3. Research methodology

3.1 Introduction

This chapter discusses the research paradigm, strategy and design. In addition to outlining the population, sample size and sampling method and research instrument that was used to collect data is discussed. The data collection procedure and data analysis is also discussed. Lastly, reliability and validity measurements are discussed as well as the ethical and limitations concerning the study. The chapter ends with a conclusion.

3.2 Research paradigm

The paradigm of the research study is influenced by philosophical concepts and worldviews that are utilised to facilitate the research process (Creswell, 2009). According to Healy and Perry (2000), a research paradigm is a conceptual foundation pertaining to how researchers conduct their studies. The research paradigm forms the basis for which research strategy researchers can employ between quantitative, qualitative and mixed method (Creswell, 2009). There are four research paradigms known to social sciences research namely; positivism, constructivism, realism and pragmatism. For this study on the impact of mobile banking on the bottom of the pyramid consumers, the positivist research paradigm forms the framework of the research process. A quantitative research strategy is associated with a positivist research paradigm. The positivist philosophy's focus is to establish hypotheses to be tested in order to facilitate a valuation of any topic (Bryman & Bell, 2011). Positivist research paradigm frequently starts with a theory followed by the collection of data that either supports or rejects that theory (Creswell, 2009). A positivist research paradigm is a philosophy in acknowledgement with the researcher's observation that knowledge comes from human experience (Collins, 2010).

3.3 Research strategy

According to Wild and Diggines (2013), a research strategy is a method used to collect information in such a way that this information can be analysed. Bryman (2012) states that a research strategy is a general direction of undertaking social science research. Saunders and Lewis (2012) maintain it is the foundation and belief of the researchers, which will impact on how the research questions are answered. Three widely known research strategies are adopted; qualitative, quantitative and mixed methods. This study uses a quantitative research strategy to answer the stated research questions and hypotheses.

Bryman (2012) defines quantitative research strategy as a unique research method that necessitates the correlation between theory and research as an empirical path and adopts an objectivist notion of social reality. The collection of data involves larger samples, more representative participants of samples and the numerical analyses of findings (Wild & Diggines 2013). Saunders and Lewis (2012) defined it as employing data comprising numbers or data that have been quantified, such as tables of figures to explain an occurrence, to test theories by investigating the relationship between constructs that can be measured on a research instrument in order for the data collected to be analysed using statistical techniques (Creswell, 2009). Therefore, this study seeks to test the relationship between mobile banking and financial literacy, social pressure and perceived credibility in hopes of supporting or rejecting these relationships. Hair, Bush and Ortinau (2008) list the characteristics of a quantitative research strategy

- The research objective is to validate facts, make estimates, test relationships and predictions.
- Descriptive and causal design type of research.
- Structured research questions
- The time frame can be longer or shorter depending on the type of study undertaken.
- The representative of the sample is large for generalisability of the population.
- Data analysis is statistical and descriptive.

The advantage of this research strategy is that it enables consistency in collecting data from a number of people and provides flexibility in how the data required can be collected (Saunders & Lewis, 2012), The disadvantage of this research strategy as stated by Saunders and Lewis (2012) is that it normally takes time to organise, administer and to do the analysis, although the data required is not as meticulous as other research strategies allow. As argued above, a structured questionnaire also makes it easier for the data to be collected.

3.4 Research design

Research design is defined by Bryman (2012) as a context for data collection and analysis. Zikmund, Babin, Carr and Griffin (2010) state that a research design is a master design that identifies the methods and processes for collecting and analysing data. The research design commences with stating the purpose and objectives of the research, which can be understood as the guiding force of the research (Patton, 2002). There are five common research designs offered, namely, cross sectional, longitudinal, experiment, survey and case study.

This study uses a cross sectional research design. Bryman (2012) defines cross sectional research design as the gathering of data on more than one event at a distinct point in time in order to connect with two or more variables, which are then analysed to identify patterns of relationship. According to McNabb (2012), cross sectional research is defined as the snapshot design type of research that is bound by a specific timeframe. Babbie (2014) acknowledges that it is about observing an occurrence at a point in time. Therefore, a cross sectional research design was suitable for this study as data was collected between April and May 2016.

3.5 Sampling design

According to Bryman (2012), the sampling design starts with the Identification of the target population, the sample frame to be drown from the target population, selecting a sample size and sampling method.

3.5.1 *Target population*

Target population is defined by Bryman and Bell (2011) as the total number of people from which the sample is to be selected. Saunders and Lewis (2012) define it as the participants belonging to a group. Babbie (2014) states that a population is a pool of people about whom researchers want to make an interpretation. Burns and Bush (2012) define the target population as the total group of people concerned with a particular study. The defining of a population is important for the undertaking of any study, as it informs the researcher where the sample will be drawn and the distinct characteristics of population is well defined.

The target population for this study is participants over the age of 18, all genders and races, living or working in Johannesburg. They earn less than R5000 a month and have a transactional bank account with one of the major banks in South Africa. They also have access to a mobile device that can perform banking transactions. By and large, the population consists of the bottom of the pyramid consumers in Johannesburg based on the criteria mentioned above.

3.5.2 *Sample size*

According to Malhotra and Bricks (2006), a sample size is a smaller number of the target population carefully selected to participate in a research study. When endeavoring to draw a sample from a population, it is vital to achieve a good balance concerning the cost and suitability of the sample (Yang, Wang, & Su, 2006). 250 questionnaires were collected with 15 questionnaires being disqualified for bad data and the final sample size for this study consisted of 235 respondents.

Table 3: Profile of respondents

Description of respondent type	Sample size
Respondents over the age of 18 in Johannesburg Earn R5000 and less Have a transactional banking account Own a mobile phone that can perform banking transactions	235

Source: Own (2016)

3.5.3 *Sampling method*

Sampling is defined by Bryman (2012) as a way to produce a sample from inside an area that represents the population under consideration for a study. Zikmund (2010) described it as a process of concluding about a population, based on a small portion of the entire population. Saunders and Lewis (2012) states it is the listing of all elements in the population. Therefore, sampling facilitates research when observing large populations because individually observing the entire population is not practical or feasible. There are two types of sampling methods namely, probability sampling and non-probability sampling. Probability sampling refers to the possibility of an event occurring (Creswell, 2012). Non-probability states that some respondents have a better probability of being included in the study (Bryman & Bell, 2011). Therefore, this study employed a non-probability sampling method as the population of the bottom of the pyramid consumers in Johannesburg is unknown. For non-probability sampling, how the sample is selected depends on the preference of the researcher (Diamantopoulos & Schlegelmilch, 2000).

According to Tansey (2007), there are a number of non-probability sampling methods that researchers can use, such as convenience sampling, snowball sampling, quota sampling, dimensional sampling and purposive sampling. Probability sampling methods include simple random sampling, cluster sampling, systematic sampling, multi-stage sampling, and stratified sampling (Edmonds & Kennedy, 2012). Due to the fact that the consumers in the bottom of the pyramid in Johannesburg are unknown, convenience sampling was more suitable.

3.6 Research instrument

A research data collection instrument structure is, according to Wagner, Kawulich and Garner (2012), a guide on how the collection of data is conducted by the researcher. Babbie (2014) mentions that a research instrument is a guide that helps researchers asks relevant questions to obtain the required information from research respondents. Saunders and Lewis (2012) states that a research instrument is how the researcher asks the respondents the research questions and statements.

This study used a structured questionnaire adapted from prior studies on mobile banking. Five measurement items to test mobile banking were adapted from Sharma (2011); six measurement items to test financial literacy were adapted from Korutaro Nkundabanyanga, Kasozi, Nalukenge and Tauringana (2013); three measurement items to test social pressure were adapted from Gu, Lee and Suh (2009) and four measurement items to test perceived credibility were adapted from Yu (2012).

The questionnaire consists of section A and B. Section A aimed to collect general information from respondents pertaining to their gender, marital status, age, education, employment status, monthly income, cell phone usage, mobile banking usage and bank currently in use. Section B aimed to collect information on mobile banking, financial literacy, social pressure and perceived credibility.

Bryman and Bell (2011) lists the advantages of using a structured questionnaire

- Ease of completion by means of tick or circle on the appropriate response.
- It limits the number of possible answers that can be given by using close ended structured questions.
- Decreases the possibility of disproportion in the classification of answers

The research instrument can be found in Appendix A.

3.6.1 *Research instrument pretest*

The researcher targeted people who potentially earned less than R5000 a month, in line with the targeted profile of respondents. The pilot sample was made up of respondents employed for the first time, such as security personnel and cleaners.

Out of the 15 preselected respondents, only 10 of them met the criterion as the rest were earning above the threshold. Permission and consent was obtained from the respondents to complete the questionnaire. The respondents were briefed on the purpose of the study and their role. Upon completion of the questionnaires, it was observed that it took respondents between 3.40 and 9.35 minutes to complete the questionnaire. The final consent form stated that the questionnaire would take the respondents 10 minutes to complete. No particular restraints or challenges were encountered as respondents were advised that their personal information was not required. Furthermore, all the questions were answered, without any of the respondents asking for clarity or interpretation. Therefore, none of the measurement items were altered before actual data collection.

3.7 Procedure for data collection

To collect data, the respondents were randomly selected from the following factories in Kempton Park - 41 employees from First Garment Rental, 60 employees from Boston Launderers, 57 employees from Hotel Amenities Suppliers and 33 employees from Steiner. Other respondents include 48 WBHO construction workers at Tshwane House and 11 general workers at Witwatersrand University, east campus. To ensure that the selected sample met the criteria of the study, a number of verification questions needed to be in place such as having a transactional bank account, earning less than R5000 before tax and have access to a mobile phone that can perform banking transactions. Once the verification was completed, the researcher explained the purpose of the study and what was required from the respondents. The respondents completed the questionnaire with the researcher present in case there are some items that need to be explained or verbally translated into a specific language.

3.8 Data analysis

Data analysis is defined as the use of statistical procedures to the data collected (Bryman, 2012). Saunders and Lewis (2012) acknowledge the definition of data analysis as the interpretation of data to answer research questions using a scientific

process. Babbie (2014) describes quantitative data analysis as the usage of numbers to explain phenomena and relationships reflected in the research findings. The questionnaires were statistically analysed using the following - IBM Statistical Package for Social Sciences (SPSS) version 23 and Analysis of Moment Structures (AMOS) version 23. Structural equation modeling (SEM) was utilised to analyse the data collected.

3.8.1 *Structural Equation Modeling (SEM)*

Qureshi and Kang (2015) defined SEM as a multivariate statistical method, predominantly used when investigating relationships between latent and observed variables that constitute a conceptual model. A multivariate analysis contains the concurrent analysis of three or more variables (Bryman, 2012). Grace (2006) suggests that SEM is a statistical method by which a researcher can develop theoretical concepts and corroborate causal relationships by means of two or more structural equations. SEM is predominantly a procedure that assists researchers find solutions to linear equations that include statistical methods namely, factor analysis, regression and path analysis (Beran & Violato, 2010). According to Nusair and Hua (2010), the advantages of SEM are that it permits for the estimation of a series and multiple regression equations concurrently; is a statistical method that creates measurement models and structural models to address complex behavioural relationships and it also has the skill to integrate latent variables into the analysis, and accounts for measurement errors in the estimation process.

3.8.2 *Data processing*

Below is the procedure for SEM that was carried out in this study:

Step 1: Code and clean collected data onto an Excel spreadsheet

Step 2: Import data onto SPSS and AMOS

Step 3: Descriptive statistics analysis

Step 4: Confirmatory factor analysis (CFA)

Step 5: Path modeling

The results of each step are discussed in the next chapter.

3.9 Reliability and validity

3.9.1 *Research reliability*

Reliability, as defined by Bryman (2012), is the uniformity of a measurement of a theoretical concept. Saunders and Lewis (2012) defined reliability as a data collection procedure and analysis to establish consistent results. The reliability of this study used Cronbach's alpha value. A score of 0.6 is an acceptable measure. According to Dunn, Baguley and Brunsden (2013) a Cronbach's coefficient α is one of the widely known internal consistency approaches to test the measurement reliability of constructs. In addition to the Cronbach's alpha value, factor loading and composite reliability were used to assess the reliability of measurement items using SPSS 23. Composite Reliability (CR) index test is measured using the following formula:

$$\textbf{(CR): } CR\eta = (\Sigma\lambda yi)\ 2/\ [(\Sigma\lambda yi)\ 2+\ (\Sigma\varepsilon i)]$$

3.9.2 *Research validity*

According to Bryman (2012), validity is the extent to which an item measures that which it intends to measure. Discriminant and convergent reliability are the measures which were used to check validity. Discriminant validity is defined as the extent to which a measurement item is not connected to other items that are not meant to measure the same fundamental construct (Malhotra, Birk, Palmer & Koenig-Lewis, 2007). For discriminant validity, Inter-correlation among the research constructs, shared variance and average variance extracted (AVE) was used. Convergent validity measures the degree of significance in the relationship of the measurement item with other items measuring the same construct (Malhotra et al., 2007). The item total correlation values, item loading and average variance extracted was used to

measure convergent validity using SPSS 23. The results are discussed in the next chapter.

3.10 Confirmatory Factor Analysis (CFA)

Nusair and Hua (2010) posit that CFA is the procedure for detecting the set of relationships between constructs intended to be measured within the model. The aim of a model fit check is to establish how well the data collected fit the measurement model (Chinomona, 2013). The model fit is measured through the following eight indices: (1) Chi-squared, (2) Goodness of Fit Index (GFI), (3) Augmented Goodness of Fit Index (AGFI), (4) Normed Fit Index (NFI), (5) Incremental Fit Index (IFI), (6) Tucker-Lewis Index (TLI), (7) Composite Fit Index (CFI) and (8) the Random Measure of Standard Error Approximation (RMSEA). The measurement model was checked by means of model fit assessment using AMOS 23. The results are discussed in the next chapter.

3.11 Path modeling

Path modeling refers to the associations between theoretical constructs and observed or measured variables (Roche, Duffield & White, 2011). Path modeling comprises two mechanisms, namely the structural model, which is the path where independent and dependent variables are connected, and the measurement model (Chinomona, 2013). The study performed Path Modelling using AMOS 23. The process tested and validated the relationship between financial literacy and mobile banking, social pressure and mobile banking; and perceived credibility and mobile banking. The structural model was tested through the standardised regression coefficients and p-values (Matzler & Renzl, 2006). The results are discussed in the next chapter.

3.12 Ethical considerations

Research ethics are described by Saunders and Lewis (2012) as the suitable standard of behaviour to be demonstrated by researchers, towards the rights of

those participating in or impacted by the research study. For administrative processes, the ethics committee clearance was obtained before data collection started. The researcher ensured that no respondent was forced to participate, participation was voluntary and respondents could withdraw at any given time. Consent from respondents was adhered to by explaining the purpose of the study and the role of the respondents before the questionnaire were handed over to be completed. The questionnaires will be kept confidential, no personal and private information was requested, as the respondents completed it anonymously.

3.13 Limitations of the study

The study was based on respondents who live or work in Johannesburg and was not representative of other regions. The study was quantitative in research strategy and limited to the statements asked on the questionnaire and could not take into account personal experiences of the respondents. Due to the fact that the research design of this study was cross sectional by nature, it was limited to a specific time and sample available at the time.

3.14 Conclusion of the chapter

This chapter discussed positivism as the framework for the research paradigm. Various research strategies were presented, from which quantitative research was selected as the most suitable strategy. Furthermore, cross sectional research design was identified as the ideal design to answer research questions. The target population, and resulting 235 respondents, was outlined with a profile of the respondents. Non-probability was the sampling method selected as the means of collected data. Due to the nature of the study and relatively unknown sample, convenient sampling was presented as the ideal sampling method for this study. An overview of the research instrument and procedure of data collection was discussed. Structural equation modeling is the data analysis that was used to interpret the information. AMOS 23 and SPSS 23 was the software that was used to check validity, reality, confirmatory factor analysis and path modeling. The limitation and ethical consideration of the study were discussed.

CHAPTER 4. Presentation of results

4.1 Introduction

This chapter presents the descriptive statistics of the research participants and accompanying tables using SPSS 23. Subsequently, reliability and validity assessment, CFA results are tabled as well as path modeling results and lastly, hypothesis tests from AMOS 23.

4.2 Descriptive statistics

SPSS 23 was used to analyse the completed questionnaires by the research respondents. The results for gender, marital status, age, education, employment status, monthly income, cell phone usage, mobile banking usage and bank currently in use are tabulated in Table 4. According to Lomax and Hahs-Vaughn (2013), descriptive statistics are defined as procedures that permits the researcher to summarise and tabulate the profile of research respondents. The main goal of descriptive statistics is to allow characteristic information about the research respondents in a quantitative data analysis (Burns & Bush, 2006).

4.2.1 *Profile of research respondents*

Table 4 presents the profile of the 235 research respondents

Table 4: Profile of research respondents

Characteristic		Percent
Gender	Male	36.6
	Female	63.4
	Total	**100**
Marital Status	Married	30.6
	Single	69.4
	Total	**100**
Age	Under 20 years old	1.7
	20 - 29 years old	32.8
	30 - 39 years old	34.5
	40 - 49 years old	23.4
	Over 50 years old	7.7
	Total	**100**
Education	Less than matric	37
	Matric	43.4
	Diploma	13.6
	Degree	3
	Postgraduate qualification	3
	Total	**100**
Employment status	Student	6.4
	Unemployed	6.4
	Employed	83.8
	Other	3.4
	Total	**100**
Monthly income	R1 000-R1 999	16.6
	R2 000-R2 999	30.2
	R3 000-R3 999	23.8
	R4 000-R5 000	29.4
	Total	**100**

Table 4 shows the gender profile of research respondents. As presented in Table 4, females accounted for 63.4% (n=149) of the respondents and males accounted for

36.6% of the respondents (n=86), which represents a total of 235 research respondents. As presented in Table 4, respondents that are single accounted for the largest percentage at 69.4% (n=163), while married respondents accounted for 30.6% (n=72). This measurement item was primarily interested in understanding how many of the respondents are single or married. The respondents were categorised into five groups as presented in Table 4. Most of the respondents were in the 30-39 year old category, which accounted for 34.5% (n=81) of the respondents. This was closely followed by the 20-29 year old category which accounted for 32.8% (n=77) of the respondents, 30-39 year old category accounted for 23.4% (n=55) of the respondents, while over 50 years old and under 20 years old accounted for the lowest representation of respondents at 7.7% (n-18) and 1.7% (n=4) respectively. This measurement item sought to understand into which category each of the respondents fall. The respondents had to select between the five available options and the results in Table 4 show that a large majority of the respondents had a matric, this was represented by 43.4% (n=102) of the total sample. At a very close second are the respondents that had less than matric, which accounted for 37% (n=87). These findings indicate that 80.4% of the respondents have not studied further than a matric or lower qualification. This is supported by the literature that states that bottom of the pyramid consumers are not highly educated. The remaining number of respondents have a diploma, degree or postgraduate qualification which accounted for 13.6% (n=32), 3% (n=7) and 3% (n=7) respectively. As presented in Table 4, there are four categories that were available for the respondents to select from. As shown by the results, a large majority of respondents were employed, which accounted for 83.8% (n=197). Student and unemployed each accounted for 6.4% (n=15) of the respondents respectively and other accounted for 3.4% of the respondents. As shown in Table 4, once the employment status of the respondents was established, their monthly income activity had to be established. As per table 4, the respondents had a threshold of R5000 as part of the criterion of the study. The results indicated that 30.2% (n=71) of the respondents earned between R2 000-R2 999. Respondents that earned between R4 000-R5 000 accounted for 29.4% (n=69) of the respondents. R3 000-R3 999 and R1 000-R1 999 accounted for 23.8% (n=56) and 16.6% (n=39) of the respondents respectively. This measurement item was

critical for this study as respondents had to earn less than R5000 in order for the results of the study to be valid.

Table 5: Profile of mobile usage

Characteristic		Percent
Cell phone usage	Under 1 year	18.7
	2-3 years	22.1
	4-5 years	17.4
	6 years and more	41.7
	Total	**100**
Mobile banking usage	Never	37.4
	Under 1 year	19.1
	2 years	12.3
	3 years	8.1
	4 years and above	23.0
	Total	**100**
Bank currently in use	Standard Bank	20.0
	FNB	16.6
	Capitec	38.7
	ABSA	9.4
	Nedbank	14.9
	Other	0.4
	Total	**100**

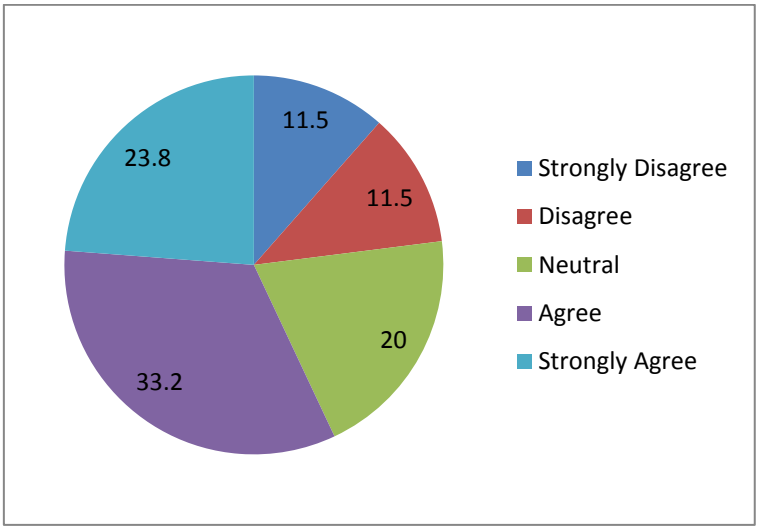
Cell phone usage is an important tool for mobile banking usage. This measurement item seeks to establish how many years the respondents have been using their cell phone. As shown in Table 5, respondents who have been using their cell phone for six years and more accounted for 41.7% (n=98), while 22.1% (n=52) of the respondents have been using their cell phone between 2-3 years. The least number of respondents have been using their cell phone just under one year and between 4-5 years indicating 18.7% (n=44) and 17.4% (n=41) of the respondents respectively. As indicated in Table 5, the results show that a large number of the respondents have never used mobile banking before, this accounted for 37.4% (n=88) of the total

sample. Interestingly enough, 23% (n=54) of the respondents have been using mobile banking for four years and above. Around 39.5% of the respondents have been using mobile banking between under one year, two years and three years, which represented 19.1% (n=45), 12.3 (n=29) and 8.1% (n=19) of the respondents respectively. Table 5 shows that 38.7% (n=91) of the respondents use Capitec, while 20% (n=47) of the respondents use Standard Bank. The results also indicated that FNB had 16.6 (n=39) of the respondents and Nedbank had 14.9% (n=35). ABSA had the least number of respondents at 9.4% (n=22) and other at 0.4% (n=1). The other respondent indicated that they use Capacity to receive their monthly income, which is not a traditional financial service institution.

4.2.2 *Questionnaire descriptive statistic*

The section tabulates the descriptive statistic results from the main constructs of this study, namely mobile baking, financial literacy, social pressure and perceived credibility. The following figures shoe each measurement item.

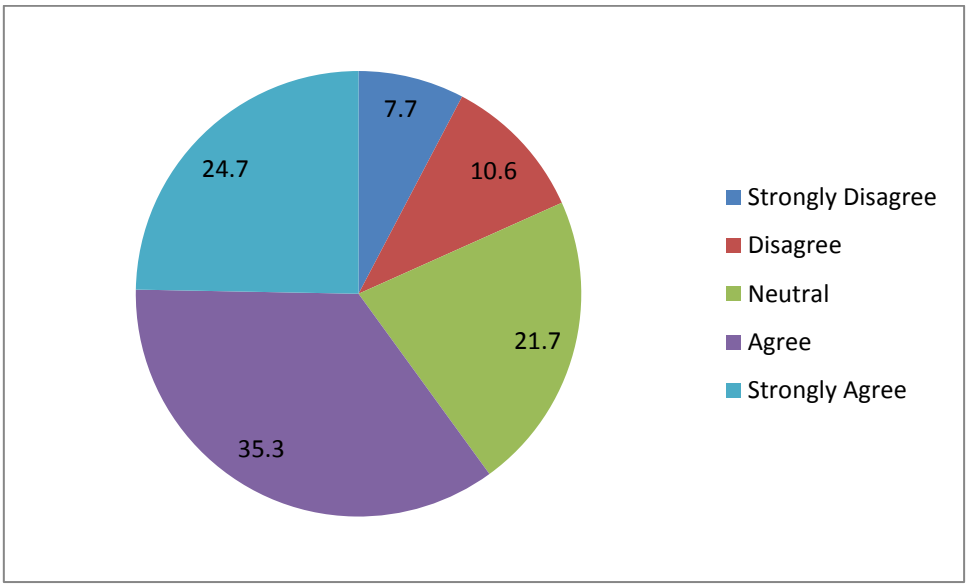
Mobile banking



"I would use mobile banking if I could use it on a trial basis first to see what it can offer"

Figure 9: Mobile banking Q1

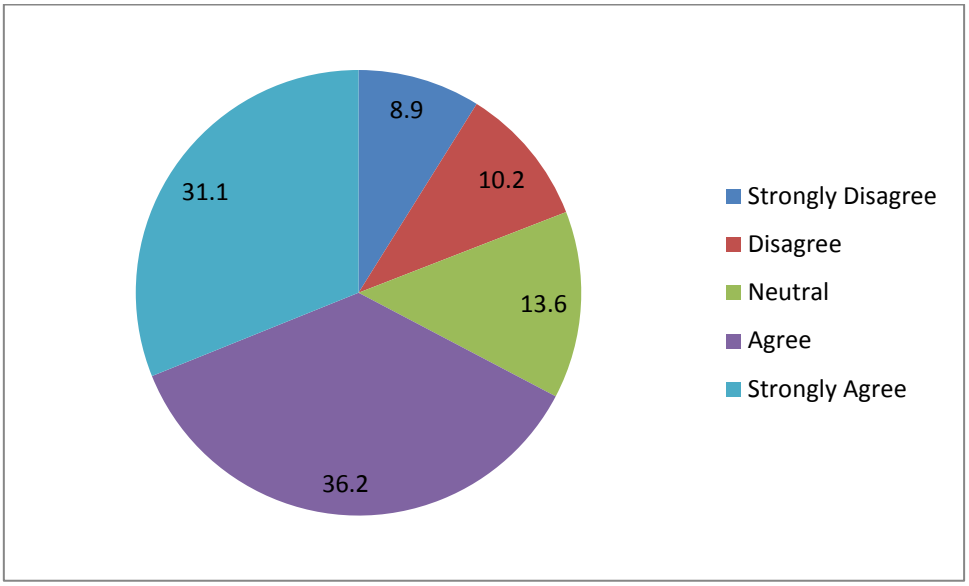
As shown in Figure 9, there are 57% (n=134) respondents that agree and strongly agree that they would use mobile banking if they could use it on a trial basis first to see what it can offer. This indicates a need by the respondents to trial mobile banking. Consequently, 23% (n=54) of the respondents indicated that they strongly disagree and disagree with the statement. Only 20% (n=47) of the respondents were neutral to the statement.



"I would use mobile banking if I could see a trial demo first"

Figure 10: Mobile banking Q2

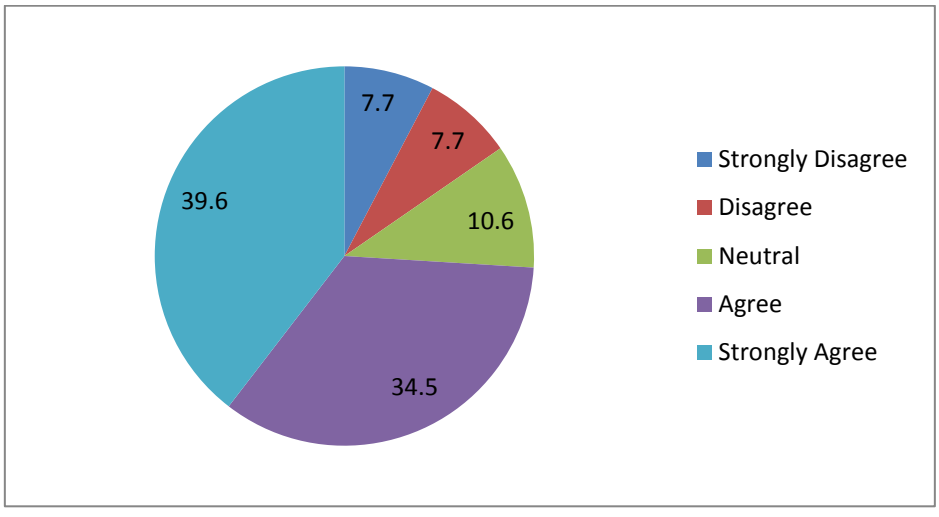
A large number of respondents agree and strongly agree that they would use mobile banking if they could see a trial demo first, which accounted for 60% (n=141) of the total sample, as shown in Figure 10. This confirms that a large number the respondents could use mobile banking if there was a trial demo first. While 21.7% (n=51) of the respondents were neutral to the statement. The least number of respondents indicated that they disagree and strongly disagree with the statement, which accounted for 18.3% (n=43) of the total sample.



"I would use mobile banking if I could test mobile banking first"

Figure 11: Mobile banking Q3

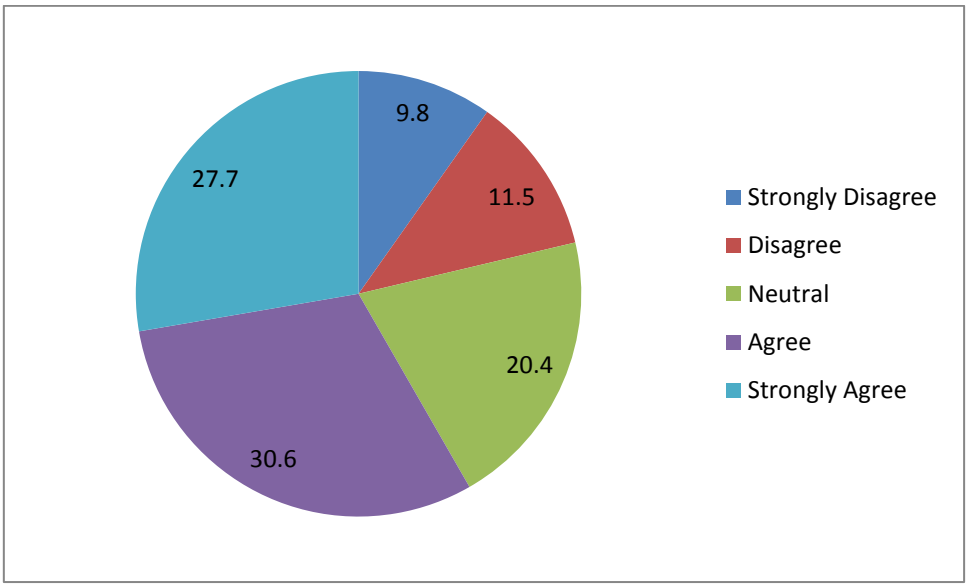
67.3% (n=158) of respondents agree and strongly agree that they would use mobile banking if they could test mobile banking first, as indicated in Figure 11. This indicated that a large number of respondents want to test mobile banking first. 19.1% (n=45) of the respondents disagree and strongly disagree with the statement. 13.6% (n=32) of the respondents were neutral with the statement.



"Mobile banking would allow me to manage my finances better"

Figure 12: Mobile banking Q4

Figure 12 indicated that 74.1% (n=174) of the respondents strongly agree and agree that mobile banking would allow them to manage their finances better. This shows a strong indication that the respondents believe mobile banking would help them with managing their personal finances better. 15.5% (n=36) of the respondents strongly disagree and disagree with the statements. 10.6% (n=25) of the respondents are neutral to the statement.

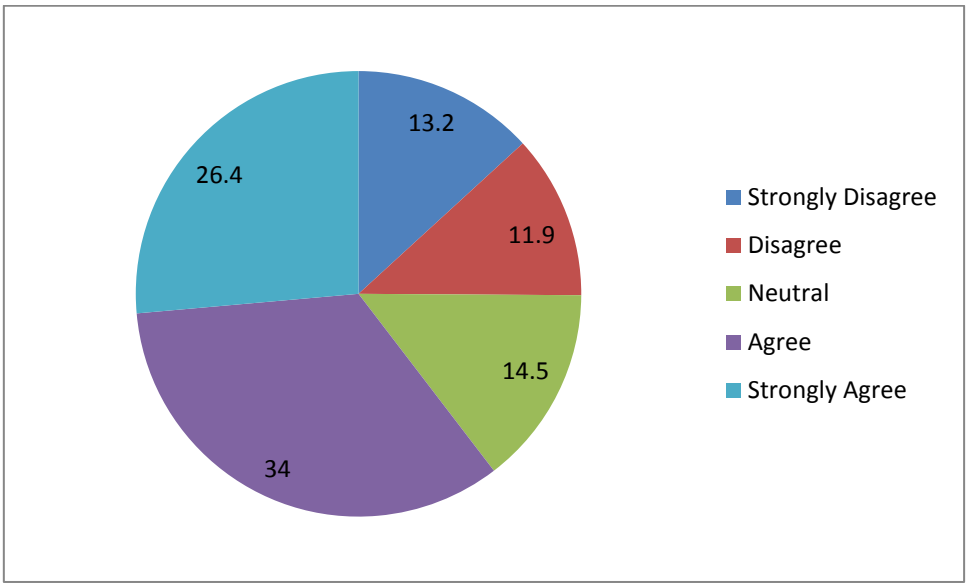


“Mobile banking would be complex to use”

Figure 13: Mobile banking Q5

58.3% (n=137) of the respondents indicated that mobile banking would be complex to use. This confirms that respondents believe mobile is a complex solution for them. 21.3% (n=50) of the respondents disagree and strongly disagree with the statement. 20.4% (n=48) of the respondents are neutral to the statement.

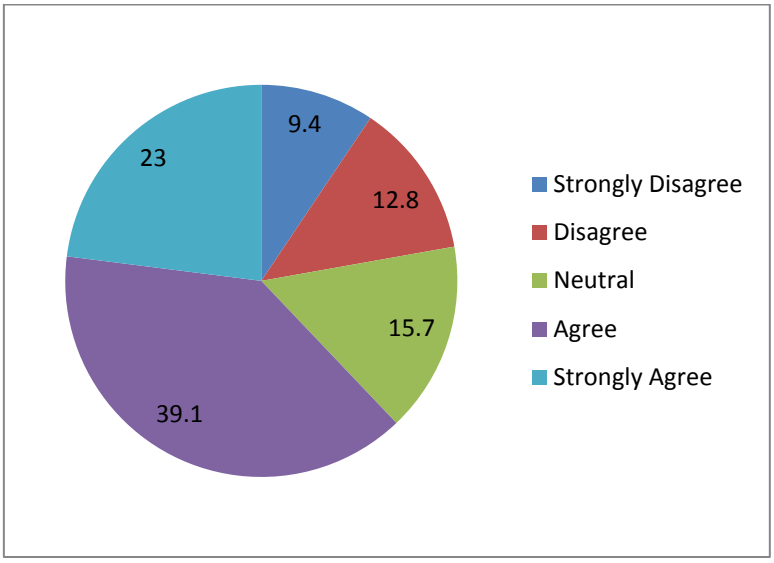
Financial literacy



“I know about managing personal finance”

Figure 14: Financial literacy Q1

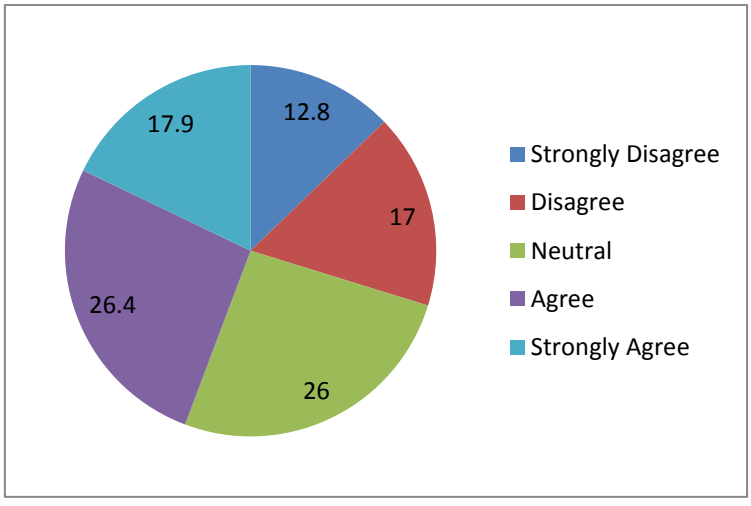
As shown in Figure 14, a large number of respondents agree and strongly agree that they know about managing personal finance, this accounted for 60.4% (n=142) of the total sample. This indicated that a majority of the respondents know about managing personal finances. On the contrary, 25.1% (n=59) of the respondents state that they do not know about managing personal finance. Lastly, 14.5% (n=34) of the respondents are neutral about the statement.



"I am aware of financial products and services provided by commercial banks"

Figure 15: Financial literacy Q2

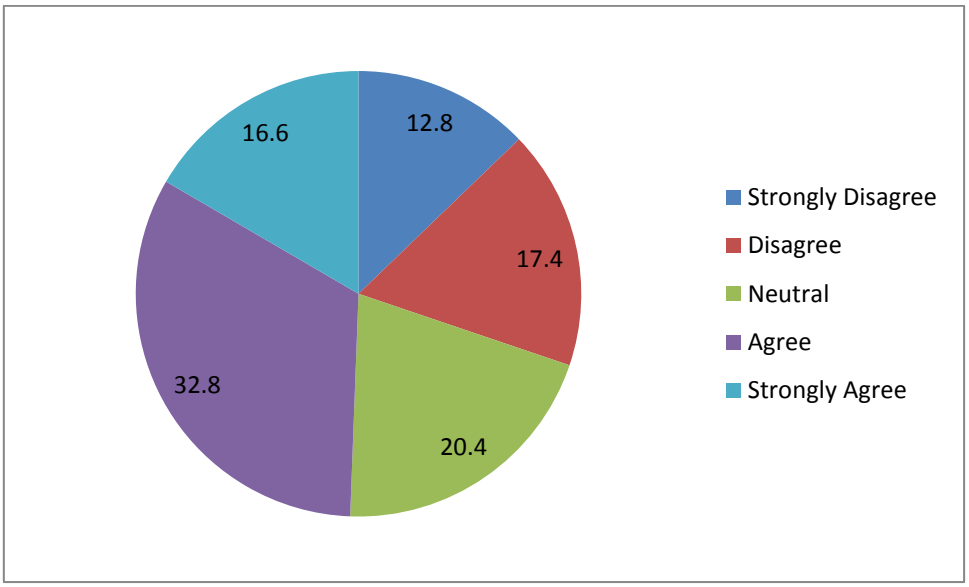
62.1% (n=146) of the respondents agree and strongly agree that they are aware of financial products and services provided by commercial banks, as indicated in Figure 15. This indicated that most of the respondents are aware of the various products and services offered by banks. 22.2% (n=52) of the respondents disagree and strongly disagree with the statement. 15.7% (n=37) of the respondents are neutral about the statement.



I have a working knowledge of financial institutions

Figure 16: Financial literacy Q3

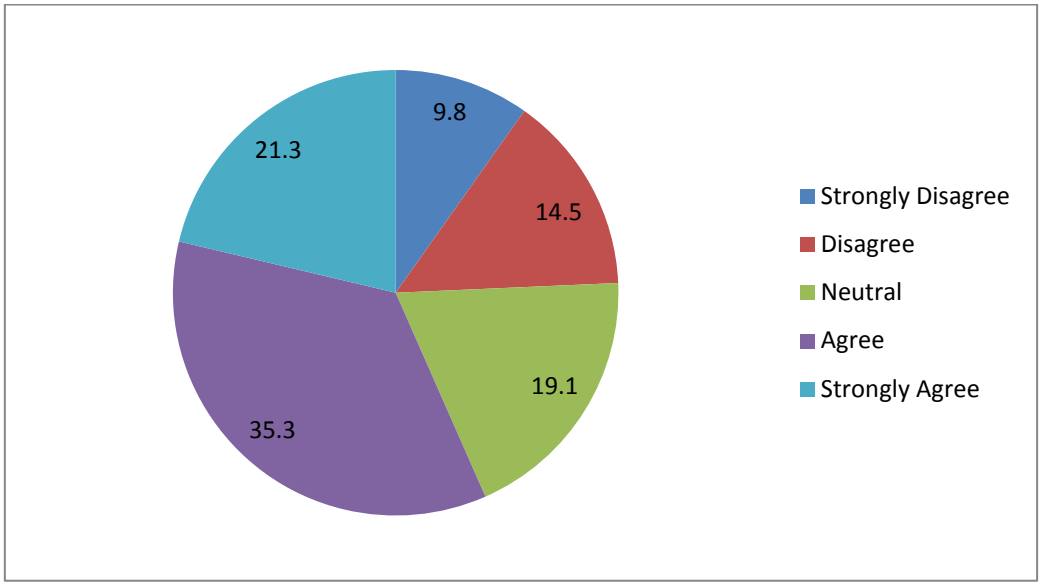
As shown in Figure 16, a majority of the respondents indicated that they have a working knowledge of financial institutions, as depicted in 44.3% (n=104) of the total sample. This confirms that the respondents are knowledgeable of financial institutions. 29.8% (n=70) of the respondents disagree and strongly disagree that they have a working knowledge of financial institutions. 26% (n=61) of the respondents are neutral about the statement.



"I have adequate skills in financial management"

Figure 17: Financial literacy Q4

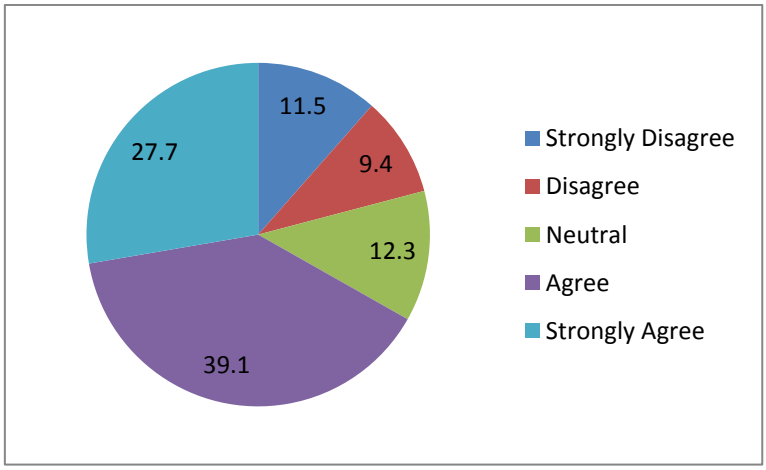
49.4% (n=116) of the respondents agree and strongly agree that they have adequate skills in financial management, as depicted in Figure 17. This indicated that almost half of the respondents are skilled in financial management. 30.2% (n=71) of the respondents disagree and strongly disagree that they have adequate skills in financial management. 20.4% (n=48) of the respondents are neutral about the statement.



"I am capable of discussing money and financial issues with comfort"

Figure 18: Financial literacy Q5

A large number of respondents agree and strongly agree that they are capable of discussing money and financial issues with comfort, which indicated 56.6% (n=133) of the total sample as shown in Figure 18. This indicated that more than half of the respondents can comfortably discuss money and financial issues with others. 24.3% (n=57) of the respondents disagree and strongly disagree with the statement. Furthermore, 19.1% (n=45) of the respondents are neutral about the statement.

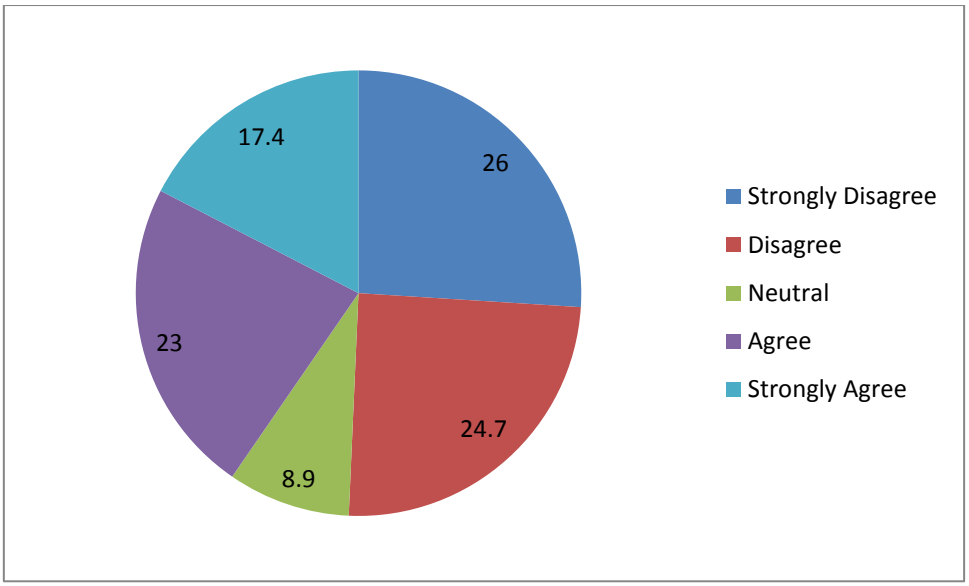


"I am very confident when making financing decisions"

Figure 19: Financial literacy Q6

As shown in Figure 19, a large number of the respondents agree and strongly agree that they are very confident when making financing decisions, as indicated by 66.8% (n=157). This confirms that respondents are confident in their financial decision making. 20.9% (n=49) of the respondents strongly disagree and disagree that they are very confident when making financing decisions. 12.3% (n=29) of the respondents are neutral about the statement.

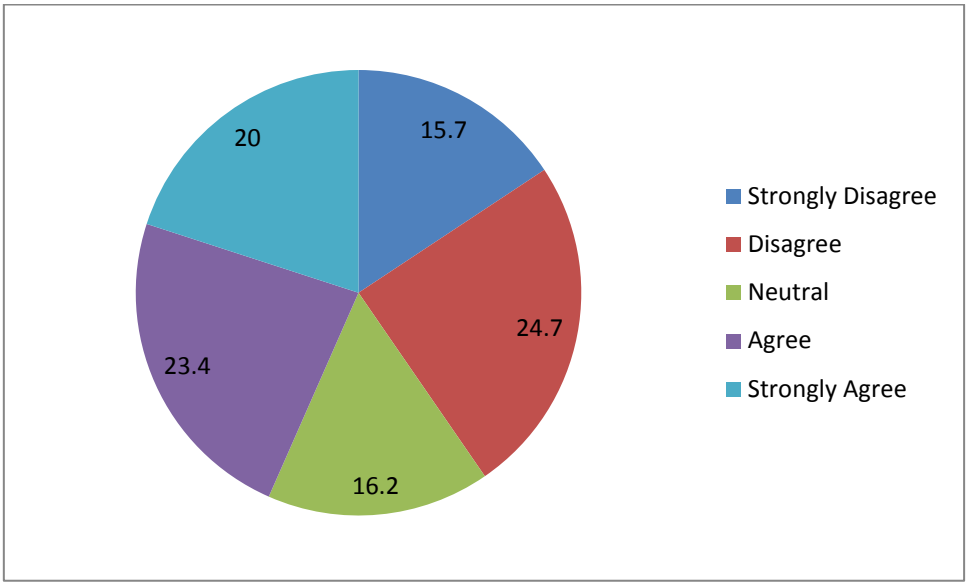
Social pressure



"I would use mobile banking because people think I should use mobile banking"

Figure 20: Social pressure Q1

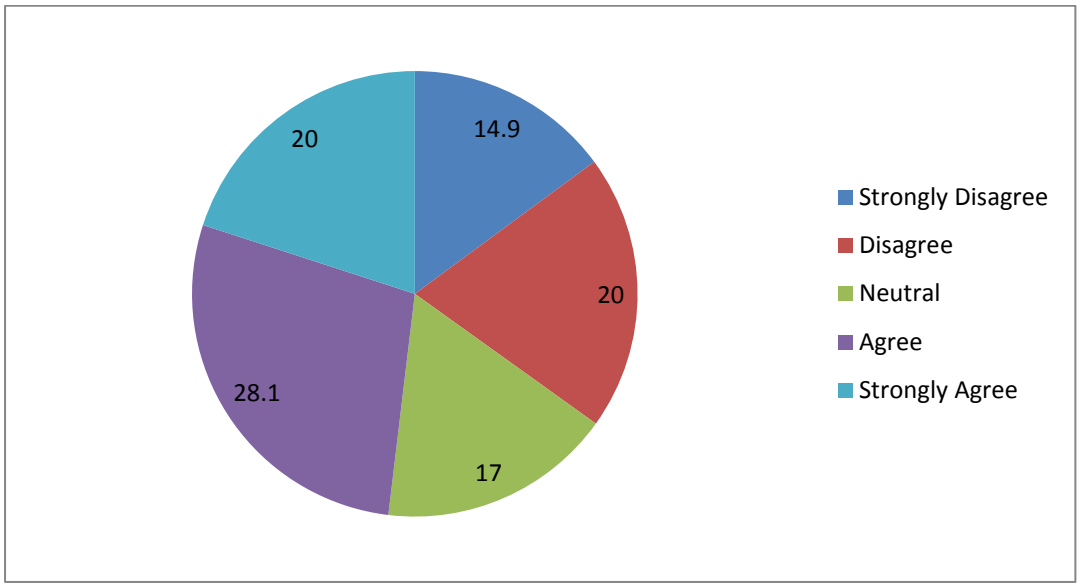
Just over half of the respondents strongly disagree and disagree that they would use mobile banking because people think they should use mobile banking, as depicted by 50.7% (n=118) of total sample in Figure 20. This indicated that respondents are not likely to use mobile banking just because others think they should use mobile banking. Therefore, they are not influenced by other people in making mobile banking decisions. On the contrary, 40.4% (n=95) of the respondents agree and strongly agree that they would use mobile banking because people think they should use mobile banking, while 8.9% (n=21) of the respondents are neutral about the statement.



“I would use mobile banking because it is very famous”

Figure 21: Social pressure Q2

As shown in Figure 21, more than 43.4% (n=102) of the respondents agree and strongly agree that they would use mobile banking because it is very famous. This indicated that the popularity of mobile banking would influence their intention to use mobile banking. 40.4% (n=95) of the respondents disagree and strongly disagree that the popularity of mobile banking would influence their intention to use it. 16.2% (n=38) of the respondents are neutral about the statement.

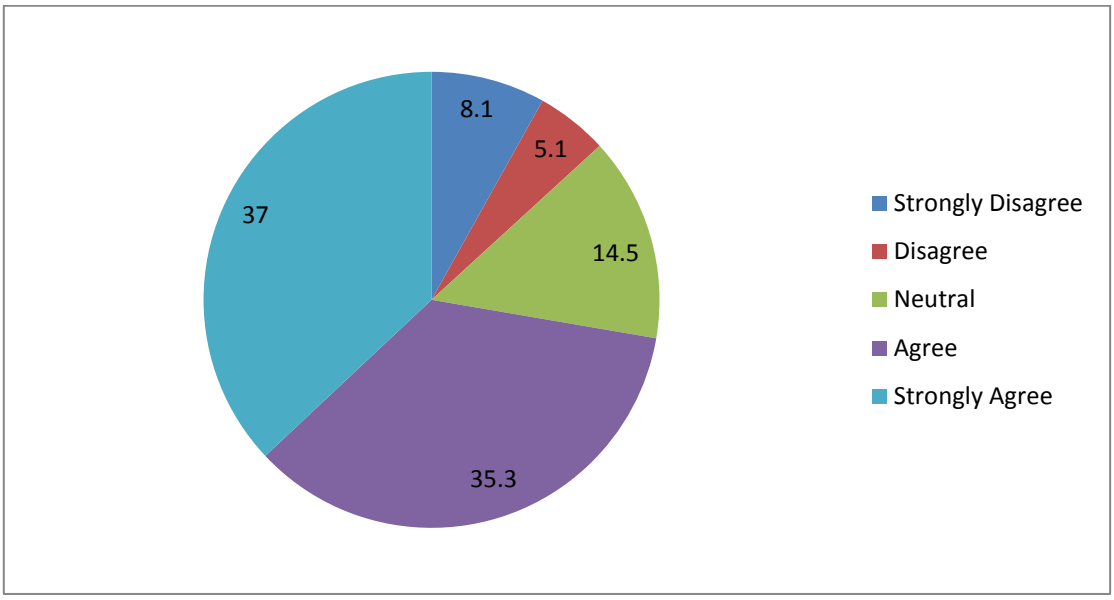


“I would use mobile banking because many people use mobile banking”

Figure 22: Social pressure Q3

48.1% (n=113) of the respondents agree and disagree that they would use mobile banking because many people use mobile banking, as indicated in Figure 22. This confirms that the respondents would use mobile banking because many people use mobile banking. This would indicate that the respondents’ intention to use mobile banking is likely to be influenced by people who already use mobile banking. 34.9% (n=82) of the respondents disagree and strongly disagree with the statement. 17% (n=40) of the respondents are neutral about the statement.

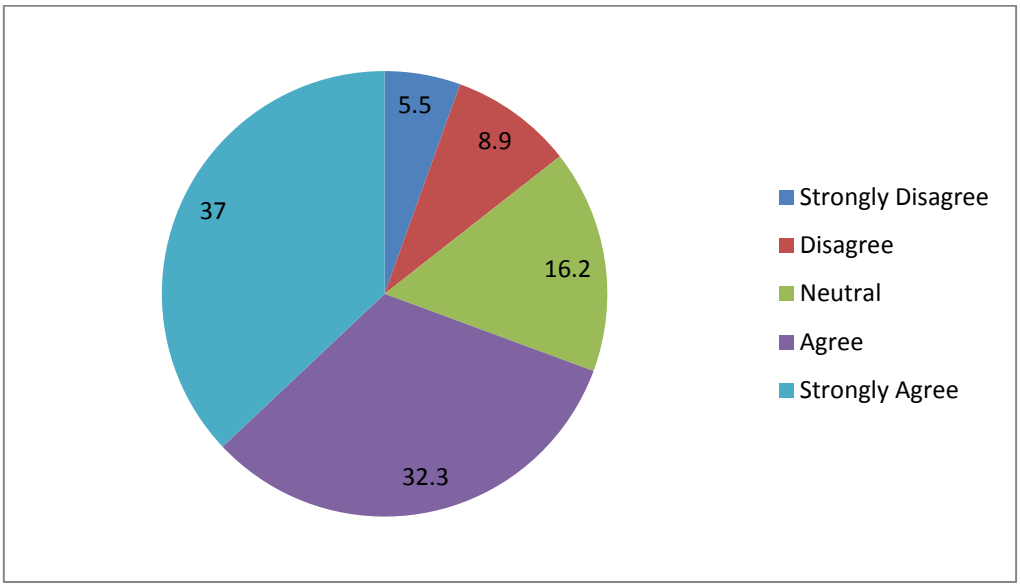
Perceived credibility



"When using mobile banking, I believe my information is kept confidential"

Figure 23: Perceived credibility Q1

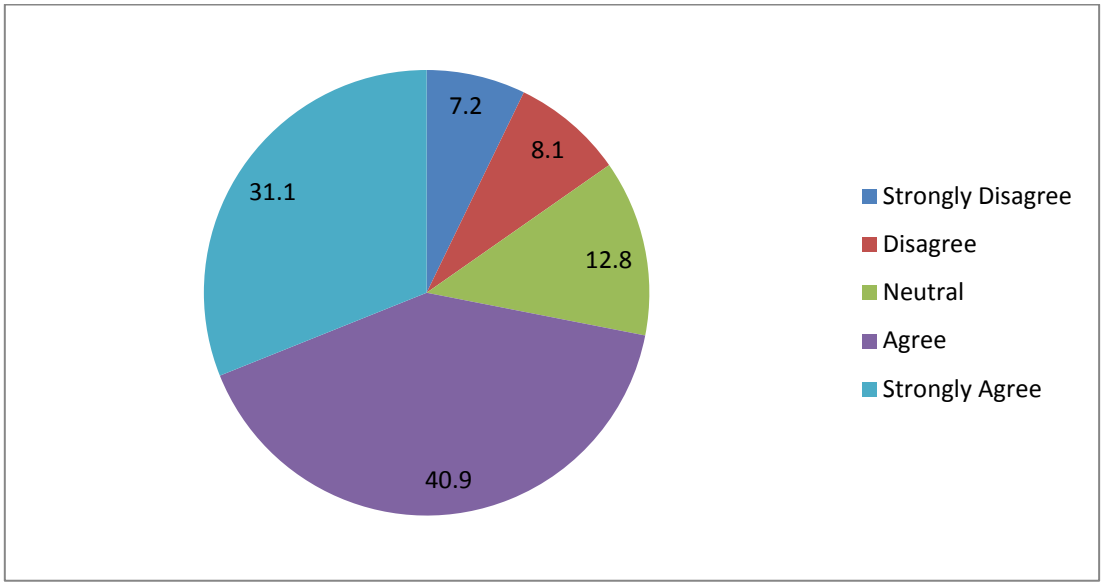
A large number of respondents strongly agree and agree that when using mobile banking, they believe their information is kept confidential, as shown by 72.3% (n=170) of the total sample in Figure 23. This indicated that the respondents believe that their information will be kept confidential when using mobile banking. 14.5% (n=34) of the respondents are neutral about the statement, while 13.2% (n=31) of the respondents strongly disagree and disagree that their information will be kept confidentially when using mobile banking.



“When using mobile banking, I believe my transactions are secured”

Figure 24: Perceived credibility Q2

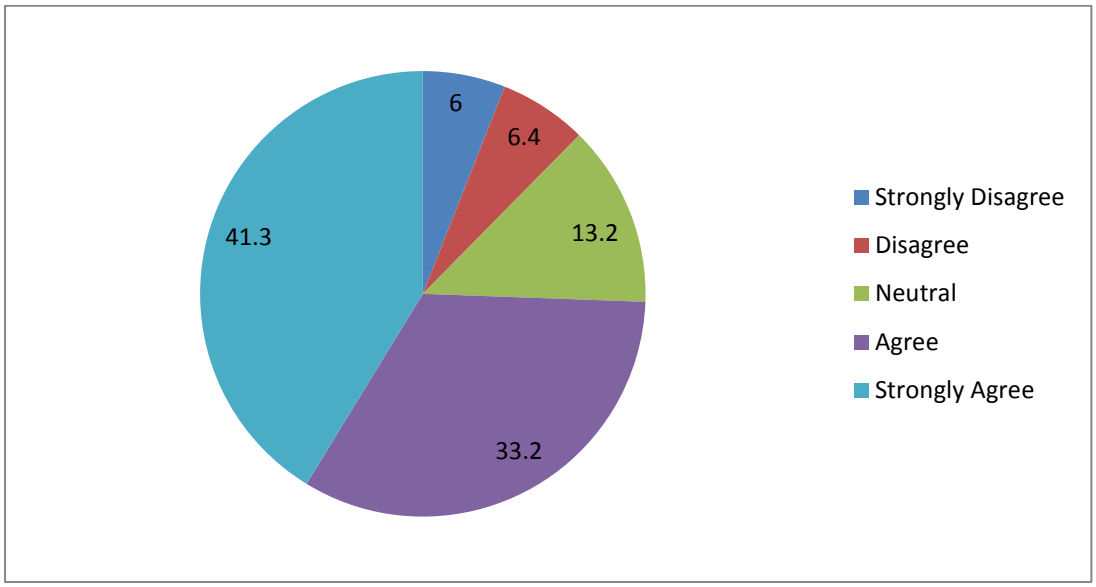
As shown in Figure 24, a large majority of respondents strongly agree and agree that when using mobile banking, they believe their transactions are secured, as depicted in 69.3% (n=163) of the total sample. This indicated that a large majority of respondents believe that all transactions made through mobile banking are secured. 16.2% (n=38) of the respondents are neutral about the statement. 14.4% (n=34) of the respondents disagree and strongly disagree with the statement.



“When using mobile banking, I believe my privacy would not be divulged”

Figure 25: Perceived credibility Q3

72% (n=169) of the respondents agree and strongly agree that when using mobile banking, they believe their privacy would not be divulged, as depicted in Figure 25. This indicated that the respondents believe that their privacy would not be divulged when using mobile banking. 13.3% (n=36) of the respondents disagree and strongly disagree that their privacy would not be divulged, when using mobile banking. 12.8% (n=30) of the respondents are neutral about the statement.



"When using mobile banking, I believe the banking environment is safe"

Figure 26: Perceived credibility Q4

A large number of respondents strongly agree and agree that when using mobile banking, they believe the banking environment is safe, as indicated by Figure 26 that shows 74.5% (n=175) of the total sample. This confirms that respondents believe the banking environment is safe when using mobile banking. This further indicates that the respondents would use mobile banking as it is a safe environment. 13.2% (n=31) of the respondents are neutral about the statement. 12.4% (n=29) of the respondents disagree and strongly disagree that they believe the banking environment is safe when using mobile banking.

4.3 Structural Equation Modelling Results

Two statistical approaches were utilised to assess the empirical data. The process commences with the Cronbach's alpha and composite reliability, as well as convergent and discriminant validity using IBM SPSS 23. For the assessment of empirical data, confirmatory factor analysis (CFA) was performed using the IBM AMOS 23. The results are presented in Table 6.

4.4 Reliability and validity assessment

4.4.1 *Measurement accuracy statistics*

Table 6: Measurement accuracy statistics

Research constructs		Descriptive statistics*		Cronbach's test		C.R.	AVE	Factor Loadings
		Mean	SD	Item to total	α Value			
Mobile Banking	MB1	3.46	1.285	0.671	0.845	0.854	0.446	0.854
	MB2	3.59	1.189	0.591				0.750
	MB3	3.70	1.256	0.645				0.799
	MB4	3.91	1.223	0.646				0.720
	MB5	3.55	1.275	0.493				0.520
Financial Literacy	FL1	3.49	1.347	0.572	0.871	0.872	0.428	0.715
	FL2	3.54	1.238	0.608				0.772
	FL3	3.20	1.276	0.649				0.805
	FL4	3.23	1.277	0.546				0.672
	FL5	3.44	1.247	0.585				0.708
	FL6	3.62	1.293	0.559				0.699
Social Pressure	SP1	2.81	1.479	0.464	0.851	0.855	0.544	0.777
	SP2	3.07	1.383	0.447				0.870
	SP3	3.18	1.361	0.465				0.793
Perceived Credibility	PC1	3.88	1.199	0.605	0.814	0.903	0.58	0.859
	PC2	3.86	1.172	0.629				0.865
	PC3	3.80	1.175	0.664				0.852
	PC4	3.97	1.158	0.603				0.764

4.4.2 *Cronbach's Alpha*

A higher Cronbach's Alpha coefficient α is desired as an indictor of internal consistency. Cronbach's Alpha coefficient α is a widely used internal consistency assessment (Dunn, et al, 2013). As presented in Table 6, the Cronbach Alpha values range from 0.814 – 0.871. The values exceed the recommended threshold of 0.6 by Zikmund and Babin (2012). Thus, this confirms the reliability of measurements used in this study.

4.4.3 *Composite reliability*

Another common internal consistency measure of reliability is composite reliability. Fornell and Larcker (1981) developed the composite reliability measure. The formula used to compute the CR is as follows.

$$CR\eta = (\Sigma\lambda yi)^2 / [(\Sigma\lambda yi)^2 + (\Sigma\varepsilon i)]$$

Where ***CRη*** = Composite reliability,

(Σλyi) ^{2} = Square the sum of the factor loadings;

(Σεi) = Sum of error variances.

Table 7: Composite reliability calculation

Constructs			Estimate	(∑λYi)²	éi	∑éi	(∑λyi)² /[(∑λyi)² +(∑ėi)]
MB5	<---	MB	0.520	13.30061	0.7296	2.274135	0.853985722
MB4	<---	MB	0.720		0.4816		
MB3	<---	MB	0.799		0.361599		
MB2	<---	MB	0.750		0.4375		
MB1	<---	MB	0.858		0.263836		
FL6	<---	FL	0.699	19.10564	0.511399	2.803317	0.872046996
FL5	<---	FL	0.708		0.498736		
FL4	<---	FL	0.672		0.548416		
FL3	<---	FL	0.805		0.351975		
FL2	<---	FL	0.772		0.404016		
FL1	<---	FL	0.715		0.488775		
PC4	<---	PC	0.764	11.15560	0.416304	1.204294	0.902564375
PC3	<---	PC	0.852		0.274096		
PC2	<---	PC	0.865		0.251775		
PC1	<---	PC	0.859		0.262119		
SP3	<---	SP	0.793	5.95360	0.371151	1.010522	0.854895994
SP2	<---	SP	0.870		0.2431		
SP1	<---	SP	0.777		0.396271		

The results as indicated in Table 7 shows the CR ranges from 0.854 – 0.902. According to Hair, et al. (2008), the recommended threshold is 0.6. This indicates that the measures in this study meet the internal consistency for reliability.

4.4.4 *Convergent Validity*

The convergent validity was assessed using the item to total correlations and factor loading items. The item to total correlation indicated values ranging from 0.447-0.671 as presented in Table 6. These values exceed the 0.3 recommended threshold. The factor loading values ranged from 0.520 – 0.870 as seen in table 6. The results indicated that the measures exceed the recommended 0.5 threshold by Fornell and Larcker (1981). Therefore, this confirms that the study meets the requirements for convergent validity.

4.4.5 *Discriminant validity*

Discriminant validly was examined using inter-construct correlation matrix and average variance extracted (AVE). Inter-construct correlation is measured to check if the latent variables are less than 1.0. Correlation states the strength of a relationship among two latent variables (Bagozzi & Yi, 2012). According to Fraering and Minor (2006), the recommended threshold for inter-construct correlation is less than 0.8. As seen in Table 8 below the values range from 0.292 – 0.619.

Table 8: Inter-construct correlation matrix

	MB	**FL**	**SP**	**PC**
MB	1			
FL	0.605	1		
SP	0.499	0.351	1	
PC	0.619	0.581	0.292	1

According to Fraering and Minor (2006), AVE values disclose the total amount of variance in the indicators accounted for by the latent variables. AVE scores that are higher than 0.4 are acceptable (Nunnally & Bernstein, 1994). Fornell and Larcker (1981) state that if AVE is less than 0.5, composite reliability is higher than 0.6, therefore the convergent validity of the construct is deemed adequate.

AVE is calculated using the following formulae:

$$V\eta = \Sigma\lambda yi2/(\Sigma\lambda yi2+\Sigma\varepsilon i)$$

AVE = summation of the squared of factor loadings/ {(summation of the squared of factor loadings) + (summation of error variances)}

Table 9 shows the results after taking the formulae into account. As seen in the table, the values range from 0.428 – 0.579. These findings indicate that the values meet the recommended threshold discussed above. Therefore, this study meets the requirements of discriminant validity as the satisfactory representation of the latent variables by the measurement items is evident.

Table 9: AVE calculation

Constructs			Estimate	λyi^2	$\sum\lambda yi^2$	$\dot{e}i$	$\sum\dot{e}i$	$\sum\lambda yi^2 / (\sum\lambda yi^2 + \sum\dot{e}i)$
MB5	<---	MB	0.520	0.2704	2.725865	0.926884	3.39224576	0.445540316
MB4	<---	MB	0.720	0.5184		0.731261		
MB3	<---	MB	0.799	0.638401		0.592444		
MB2	<---	MB	0.750	0.5625		0.683594		
MB1	<---	MB	0.858	0.736164		0.458063		
FL6	<---	FL	0.699	0.488601	3.196683	0.761269	4.26959103	0.428149702
FL5	<---	FL	0.708	0.501264		0.748734		
FL4	<---	FL	0.672	0.451584		0.796072		
FL3	<---	FL	0.805	0.648025		0.580064		
FL2	<---	FL	0.772	0.595984		0.644803		
FL1	<---	FL	0.715	0.511225		0.738649		
PC4	<---	PC	0.764	0.583696	2.795706	0.659299	2.02805334	0.579569958
PC3	<---	PC	0.852	0.725904		0.473063		
PC2	<---	PC	0.865	0.748225		0.440159		
PC1	<---	PC	0.859	0.737881		0.455532		
SP3	<---	SP	0.793	0.628849	1.989478	0.604549	1.66716262	0.544072608
SP2	<---	SP	0.870	0.7569		0.427102		
SP1	<---	SP	0.777	0.603729		0.635511		

4.5 Confirmatory Factor Analysis (CFA)

4.5.1 *CFA model*

Confirmatory factor analysis (CFA) was mainly done to inspect scale accuracy of the multiple-item variable measures using AMOS 23 (Anderson & Gerbing, 1988). Figure 27 is the CFA model relating to the study. As indicated in Figure 28, the oval shapes represent the latent variables and the rectangular shapes represent the observed variables. The circles pointing to the observed variables represent the measurement errors. The bidirectional arrows represent the relationship between latent variables.

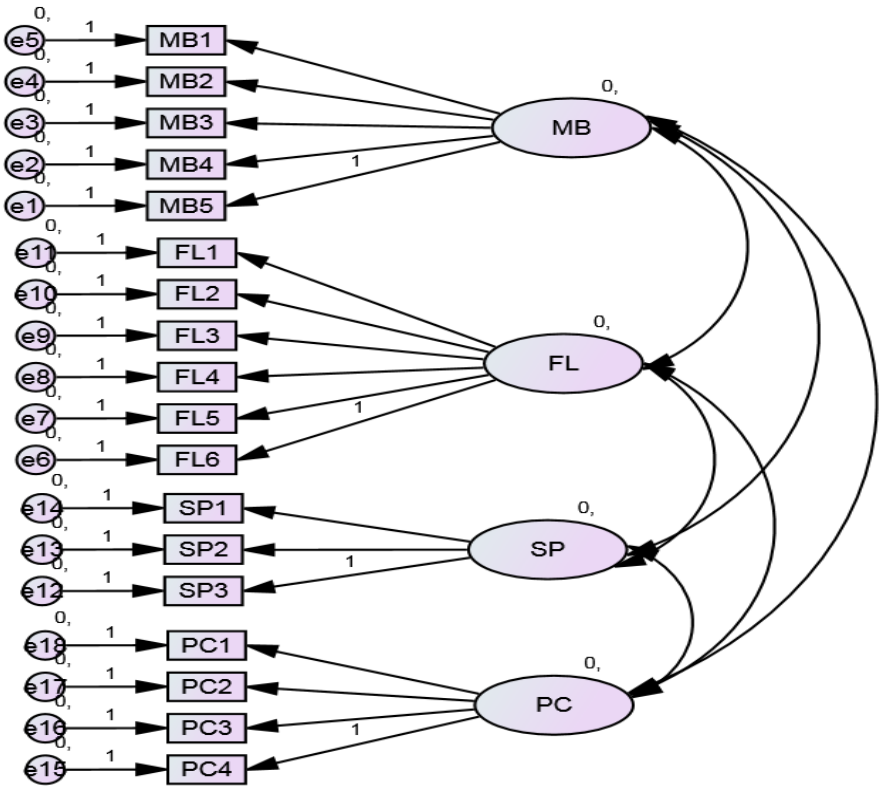


Figure 27: Confirmatory Factor Analysis model

4.5.2 *Model fit indices*

The model fit was assessed using fit indices that included the chi-square value over degree of freedom (χ2/df), Normed Fit Index (NFI), Goodness-of-Fit Index (GFI), Comparative Fit Index (CFI), Tucker-Lewis Index (TLI), Incremental Fit Index (IFI) and Root Mean Square Error of Approximation (RMSEA). The model fit indices scores are presented below in Table 10.

Table 10: Model fit results

Model fit criteria	**Chi-square (χ2 /DF)**	**NFI**	**GFI**	**CFI**	**TLI**	**IFI**	**RMSEA**
Results	2.494	.874	.832	.919	.892	.920	.080

As seen above in Table 10, Chi-square (χ2 /DF) was 2.494 which is acceptable as the recommended threshold is below 0.3, as per Chinomona (2014). NFI, GFI, CFI, TLI and IFI represented .874, .832, .919, .892 and .920 respectively. It is deemed acceptable by literature to have scores that are above 0.8 with 0.9 being the ideal threshold. Lastly, RMSEA was 0.08 which meets the acceptable threshold of equal or below 0.8 (Chinomona, 2014). Thus, the results indicate an acceptable model fit and can proceed to do the hypothesis test.

4.6 Path modelling

Path modelling refers to the relationships between latent variables concerning a particular study (Roche, Duffield & White, 2014). Much like CFA model, the oval shapes represent the latent variables and the rectangular shape represents the observed variables. The circles pointing to the observed variables represent the measurement errors. The bidirectional arrows represent the relationship between latent variables.

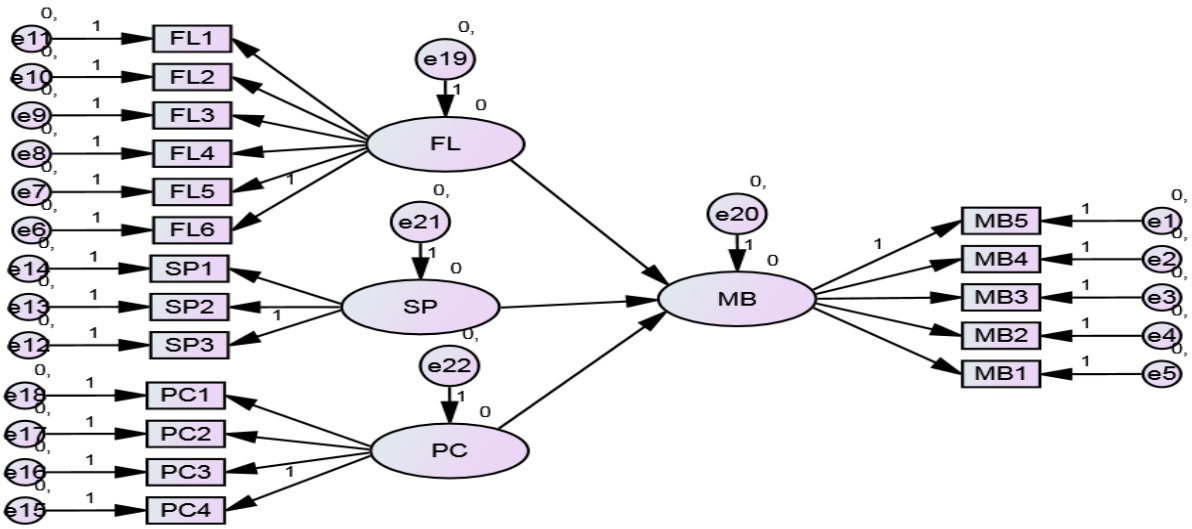


Figure 28: Path modelling

4.7 Hypothesis testing

The hypotheses were tested to examine the relationships between latent variables using AMOS 23 as per the conceptual model presented in Chapter 2. The results are presented below.

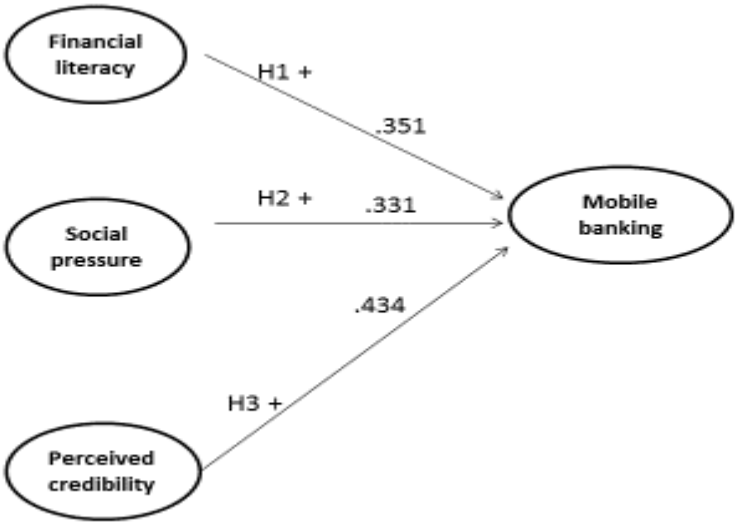


Figure 29: Results of hypothesis testing

4.7.1 *Financial literacy and mobile banking relationship*

Table 11: Financial literacy and mobile banking hypothesis testing

Relationship hypothesis	Hypothesis	Path Coefficients	P value	Results
FL → MB	H1	.351	***	Supported and significant

As seen in Table 11, the path coefficient of H1 was 0.351, this proposes a significant relationship between FL and MB. The P value shows a 0,01(***) level of confidence, thus indicating that the hypothesis is supported and significant.

4.7.2 *Social pressure and mobile banking relationship*

Table 12: Social pressure and mobile banking hypothesis testing

Relationship hypothesis	Hypothesis	Path Coefficients	P value	Results
SP → MB	H2	.331	***	Supported and significant

The path coefficient of H2 was 0.331, this proposes a significant relationship between SP and MB as presented in Table 12. The results revealed H2 as the weakest significant relationship among the three hypotheses. The P value shows a 0,01 level of confidence, thus indicating that the hypothesis is supported and significant.

4.7.4 *Perceived credibility and mobile banking relationship*

Table 13: Perceived credibility and mobile banking hypothesis testing

Relationship hypothesis	Hypothesis	Path Coefficients	P value	Results
PC → MB	H3	.434	***	Supported and significant

As seen in Table 13, the path coefficient of H3 was 0.434, this proposes a significant relationship between PC and MB. It is noted from Table 13 that H3 has the strongest significant relationship among the three hypotheses. The P value shows a 0,01 level of confidence, thus indicating that the hypothesis is supported and significant. The next chapter discusses the hypotheses results in more detail.

4.8 Conclusion of the chapter

This chapter discussed the results from the questionnaires completed by the sample. The chapter proceeded with an introduction, descriptive statistics from demographic profiling of the respondents and measurement items using SPSS 23. Furthermore, reliability and validity assessment were discussed and as mentioned, the study meets the requirements and threshold for Cronbach Alpha, composite reliability, convergent validity (item to total correlation and factor loadings) and discriminant validity (inter-construct correlation and average variance extracted). Confirmatory factor analysis from AMOS 23 was presented with all the relevant model fit indices. In addition, path modelling and hypothesis testing was presented. The results indicated that all three hypotheses are significant and supported, with H2 being highlighted as the weakest significant relationship and H3 as the strongest significant relationship.

CHAPTER 5. Discussion of results

5.1 Introduction

This chapter discusses the results pertaining to the hypotheses testing performed using AMOS 23. The discussion takes into account supporting literature from prior studies.

5.2 Financial literacy and mobile banking

According to Cracknell (2004), mobile banking is more likely to take into account financial literacy for the underprivileged. There are some regulatory and financial literacy issues on mobile banking within emerging countries, due to the fact that a large number of people still use traditional banking channels (Ha, et al., 2012). With sufficient financial literacy programmes, consumers benefit from financial services and make knowledgeable choices with regards to personal financial management (Huhmann & McQuitty, 2009). Financial literacy impacts on financial behaviour (Lusardi, et al., 2010). When consumers transition from traditional banking channels to mobile bank, financial literacy programmes becomes necessary, due to the new change in behaviour (Cohen & Nelson, 2011). As presented in Chapter 2 the hypothesis was stated as follows:

H_{10}: Financial literacy influences mobile banking adoption among bottom of the pyramid consumers

H_{1A}: Financial literacy does not influences mobile banking adoption among bottom of the pyramid consumers

The path coefficient of H1 was 0.351, this proposes a significant relationship between FL and MB. The P value shows a 0,01 level of confidence, thus indicating that the hypothesis is supported and significant. The results agree with the literature that states financial literacy has an impact on mobile banking adoption. This is supported by a prior study by Cracknell (2004) who argues that mobile banking is more likely to involve financial literacy. The findings are consistent with findings by

Huhmann and McQuitty (2009) which indicated that financial literacy from financial services enables consumers to make knowledgeable choices with regards to mobile banking. When a consumer transitions from traditional retail banking to mobile banking, financial literacy is critical (Cohen & Nelson, 2011). The lack of financial literacy may be the cause of mobile banking adoption (Gross, et al., 2012). Therefore, the findings indicate that banks should focus their efforts in teaching bottom of the pyramid consumers on understanding mobile banking and its benefits. The more knowledgeable the consumers are on mobile banking the more likely they are to use it. Based on this argument above, it evident that the findings agree with literature on financial literacy and mobile banking.

5.3 Social pressure and mobile banking

Panagopoulos and Abrajano (2013) state that the effectiveness of social pressure messages can influence a person's behaviour. The motive behind a person using mobile banking is that they are influenced by people close to them who are using mobile banking (Amin, et al., 2008). Teo, et al. (2012) acknowledge that social pressure is the most significant factor in influencing mobile banking adoption by consumers. Puschel, et al. (2010) notes that social pressure from family, friends or other people within the same social group tends to significantly influence mobile banking adoption. The influence of other people's opinions has an effect on the intention to use mobile banking (Pack, et al., 2007). As presented in Chapter 2 the hypothesis was stated as follows:

H_{20}: Social pressure influences mobile banking adoption among bottom of the pyramid consumers

H_{2A}: Social pressure does not influences mobile banking adoption among bottom of the pyramid consumers

The path coefficient of H2 was 0.331, this proposes a significant relationship between social pressure and mobile banking. The P value shows a 0, 01 level of confidence, thus indicating that the hypothesis is supported and significant. The results revealed H2 as the weakest significant relationship among the three

hypotheses. This is consistent with a study by Yang, et al. (2012) which states that social pressure is considered as an important element in explaining mobile banking adoption. Similarly, Teo, et al. (2012) found that social pressure is the most important construct in influencing mobile banking adoption by consumers. Social pressure towards mobile banking is significant (Puschel et al., 2010). The impact of others' opinions on adoption has an effect on intentions to use mobile banking (Pack, Yang & Lehto, 2007). The finding is similar to a study by Chaouali, et al. (2016) that found social pressure has a direct impact on mobile banking. As the weakest significant relationship, it indicates consumers' intention to use mobile banking may or may not be influenced by other people or its perceived popularity. It needs to be noted that consumers would make their own decision if they would like to use mobile banking and it somewhat has a bearing on other peoples' opinion who already use it. Based on the literature discussed above, the results confirm that social pressure has an impact on mobile banking.

5.4 Perceived credibility and mobile banking

Scholars such as Crabbe, et al. (2007) and Luarn and Lin (2005) have conducted research to understand the relationship between perceived credibility and mobile banking, they found that perceived credibility significantly influenced people's intention to adopt mobile banking. According to Yang (2007), perceived credibility expanded from the emergence of new technologies. Trustworthiness, expertise and attractiveness of a product or services influences the consumers' perceived credibility (Pornpitakpan, 2004). Perceived credibility relies on information communicated by the organisation (Wang, et al., 2003). Afshan and Sharif (2016) found that perceived credibility caused significant influence on people's intentions to use mobile banking. Wang, et al. (2006) argue that transactions done securely and that preserve the privacy of their personal information, influence their intentional acceptance of mobile banking. Safety and privacy issues from consumers play a key role in mobile banking adoption (Luarn & Lin, 2005). As presented in Chapter 2 the hypothesis was stated as follows:

H_{30}: Perceived credibility influences mobile banking adoption among bottom of the pyramid consumers

H_{3A}: Perceived credibility does not influences mobile banking adoption among bottom of the pyramid consumers

The path coefficient of H3 was 0.434, this proposes a significant relationship between perceived credibility and mobile banking. The P value shows a 0,01 level of confidence, thus indicating that the hypothesis is supported and significant. It is noted from Table 13 that H3 has the strongest significant relationship among the three hypotheses. In a prior study, Afshan and Sharif (2016) found that perceived credibility caused significant positive influence on consumer's intentions to use mobile banking. Similarly, Wang, et al. (2006) note that the perceived credibility that consumers have in the capability of the mobile banking services to complete their financial transactions securely and to preserve the privacy of their personal information, influence their intentional acceptance of mobile banking. The findings are consistent with a study by Luarn and Lin (2005) who found perceived credibility can be an antecedent of mobile banking adoption. Quan, et al. (2010) deduce that perceived credibility has a significant positive impact on intentions to use mobile banking. This confirms that the hypothesis is true and agrees with the literature that states that perceived credibility has an impact on mobile banking. Consumers need to be confident that mobile banking is safe and secure before using it. Therefore, as the strongest relationship, it indicates that banks should focus their efforts in informing consumers about the safety of the services and reinforce that the privacy is taken into high regard.

5.5 Conclusion of the chapter

This chapter presented the hypothesis testing results; based on the results, it is evident that financial literacy, social pressure and perceived credibility are important for the use of mobile banking. The results highlight that hypothesis two has the weakest relationship and hypothesis three has the strongest relationship. Results confirm that all three hypotheses are true and supported by numerous studies. The next chapter discusses the conclusion, implications, recommendations, limitations and future research.

CHAPTER 6. Conclusion and recommendation

6.1 Introduction

This chapter discusses the conclusion pertaining to the study, theoretical managerial implications, recommendations, limitations and future research, as well as the conclusion of the chapter.

6.2 Conclusion

As stated in Chapter 1, the purpose of this study is to investigate the influence of financial literacy, social pressure and perceived credibility on the adoption of mobile banking among the bottom of the pyramid consumers in South Africa. As such, the hypothesis that the study tested are:

H_{10}: Financial literacy influences mobile banking adoption among bottom of the pyramid consumers

H_{1A}: Financial literacy does not influences mobile banking adoption among bottom of the pyramid consumers

H_{20}: Social pressure influences mobile banking adoption among bottom of the pyramid consumers

H_{2A}: Social pressure does not influences mobile banking adoption among bottom of the pyramid consumers

H_{30}: Perceived credibility influences mobile banking adoption among bottom of the pyramid consumers

H_{3A}: Perceived credibility does not influences mobile banking adoption among bottom of the pyramid consumers

6.2.1 *Financial literacy and mobile banking*

The study proves that financial literacy has a significant influence on mobile banking. This was expected as prior studies have shown similar results. Therefore, the study adds to the current knowledge of the relationship between financial literacy and mobile banking. This provides empirical support to managers to look at how they can best optimise financial literacy programmes in order to increase mobile banking adoption. The findings are valuable as mobile banking in the developing country context is still in its growth phase and there is definitely a need to engage more with low income earners who largely use traditional banking channels.

6.2.2 *Social pressure and mobile banking*

The results presented in Chapter 4 show that there is a significant influence of social pressure on the adoption of mobile banking. Previous literature has yielded similar findings. Although the hypothesis is significant and supported, the study revealed social pressure and mobile banking as having the weakest relationship. In other words, consumers are likely to be influenced by other people before using mobile banking. Therefore, it gives managers the factual basis to look into strategies that can utilise other people's influence to drive mobile banking adoption. However, this is contextually relevant to low income earners. The findings support previous literature on social pressure and mobile banking, and therefore contribute to the existing knowledge.

6.2.3 *Perceived credibility and mobile banking*

From the results, it is evident that perceived credibility and mobile banking has the strongest relationship. This indicates that the hypothesis outlined above is true and agrees with previous literature on the relationship between perceived credibility and mobile banking. Managers should pay attention to creating the correct strategy to reinforce how safe and reliable mobile banking is for consumers. By creating such strategies, mobile banking adoption will likely increase among low income earners. Banks are likely to benefit from such strategies in the long term. Therefore, the study makes a significant contribution to developing countries' context and adds to the

current knowledge of the relationship between perceived credibility and mobile banking.

6.3 Implications

This study has both theoretical and managerial implication for scholars and managers respectively.

6.3.1 *Theoretical*

Theoretically, the study contributes to the limited and existing research on mobile banking adoption among bottom of the pyramid consumers in emerging countries. The results indicated that financial literacy, social pressure and perceived credibility do influence and impact on mobile banking adoption. When investigating the hypotheses closely, this study contributes to the relationship between financial literacy and mobile banking, which indicates that financial literacy strategies by organisations do impact on mobile banking. In addition, the study also contributes to the social pressure and mobile banking relationship. However, the results presented a weak relationship and can definitely assist scholars to conduct more studies on this relationship in various settings. Lastly, the study contributes to existing research on the relationship between perceived credibility and mobile banking. As the strongest relationship in this study, it shows that when organisations reinforce safety of mobile banking, they will increase its use among consumers.

6.3.2 *Managerial*

The implication for marketers in the financial services sector in South Africa and other emerging countries is that, in order to increase mobile adoption amongst low income earners, efforts must be placed on developing financial literacy programmes pertaining to the “5W’s”. Meaning consumers must have sufficient knowledge on what or who mobile banking is, where and when to use it and also highlight why it benefits them. The findings also show that managers need to look at strategies to increase social pressure through word of mouth (WOM) or electronic word of mouth (eWOM). Perceived credibility is an important driver of mobile banking and

managers need to invest in strategies that make the environment secure and safe for consumers to decrease any perceptions on the safety concerns of using mobile banking.

It is evident that this study has theoretical and managerial implication, as such recommendations are proposed for each hypothesised relationship in the next section.

6.4 Recommendations

Based on the hypothesis testing results, recommendations concerning each hypothesis are discussed in this section.

6.4.1 *Financial literacy and mobile banking*

Financial services providers should build mobile banking specific financial literacy campaigns that speak to the needs and lives of the consumers, particularly low income earners. The key messaging must address how mobile banking works and should be used. Furthermore, it should highlight what services are available on mobile banking. In addition, communication about mobile banking needs to be translated into all 11 official languages in South Africa. It is also recommended that all internal retail branch employees focus on teaching consumers about mobile banking. This will ensure consumers see how quick and easy it is to use. Also, financial literacy should focus on responsibility and accountability, meaning all consumers should guard their mobiles and personal information as they do their bank cards. Lastly, all communication about mobile banking must focus on the benefits, such as the convenience of banking anywhere and anytime, as well as its cost saving benefits by not going to the branch.

6.4.2 *Social pressure and mobile banking*

The opinion of family members, colleagues, friends and community at large has an influence on people's behavioural intentions. As indicated in the results, this relationship was the weakest among the three hypotheses. This means that

organisations may not necessarily need to focus on driving social pressure, but it means that consumers are capable of making their own decisions when they are well informed and may not necessarily take other people's opinions into account. However, it is still recommended that a "each one, teach one" approach is adopted, which means for every consumer that is taught about mobile banking through all the various touch points, they need to teach someone else. This will improve mobile banking penetration. In addition, various activations can be done at taxi ranks, malls, institutions or soccer matches at stadiums. Social media platforms, such as Facebook, can also be used to drive content around mobile banking and encourage people to talk about what they like about using mobile banking or what barriers are prohibiting them from using mobile banking.

6.4.3 *Perceived credibility and mobile banking*

This study shows that this relationship is the strongest among the three hypotheses tested. It is recommended that financial services providers focus their campaigns and communications on explaining the safety measures of mobile banking. Key messaging should reinforce that all transactions are secure and safe, as well as that the bank will make sure that their confidential information will not be divulged to anyone. During the data collection process, some the respondents had concerns about what happens when they lose their mobile phones. Such concerns can be addressed through the financial literacy strategies. It is evident that safety is a major concern for consumers.

6.5 Limitations and future research

One of the key limitations of this study was that only financial literacy, social pressure and perceived credibility were investigated. Other scholars can look at other constructs such as perceived self-efficacy, product innovation and perceived convenience. The study was also concerned about bottom of the pyramid consumers. The youth or senior citizens are segments that should be addressed in the future. Furthermore, this study can be adapted to emerging countries to see if the results will be similar or different. The study used the theory of planned behaviour as

its theoretical grounding; it is encouraged that other scholars use social identity theory.

The study was limited to Johannesburg, South Africa; other studies can investigate other provinces in South Africa. It is strongly recommended that other studies are done in more emerging countries in Africa. The study was quantitative by nature and a qualitative or mixed approach can be investigated in the future. Since the study was cross sectional in research design, scholars can look at a longitudinal design to observe if new users of mobile banking continue to use it over time or quit along the way.

6.6 Conclusion of the chapter

The study set out to investigate the impact of financial literacy, social pressure and perceived credibility on the adoption of mobile banking among bottom of the pyramid consumers. The results show that it is evident that financial literacy, social pressure and perceived credibility have a significant impact on mobile banking. These findings confirmed the proposed hypothesis presented in Chapter 2. The results also prove that the research questions and objectives have been accomplished. Therefore, the conclusion was provided and accompanying implications were discussed from theoretical and managerial perspectives. Furthermore, recommendations pertaining to each hypothesis were discussed. Lastly, limitations and future research were discussed to warrant further research on mobile banking be conducted to contribute to the current knowledge.

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APPENDIX A





February 2016

Questionnaire

Thank you for taking part in this academic questionnaire. The purpose of this study is to investigate the influence of perceived credibility, financial literacy and social pressure has on the adoption of mobile banking among the bottom of the pyramid consumers in South Africa.

I am kindly requesting your assistance in completing the questionnaire below. The research is purely for academic purposes and the information obtained will be kept confidential.

It will take you approximately 10 minutes to complete the questionnaire.

Student

Thobile Tshabalala

Supervisor

Dr Yvonne Saini

SECTION A: GENERAL INFORMATION

Please indicate your answer by mark (X) on the appropriate item.

A1 Please indicate your gender

Male	1
Female	2

A2 Please indicate your martial status

Married	1
Single	2

A3 Please indicate your age group

Under 20 years old	1
20 - 29 years old	2
30 - 39 years old	3
40 – 49 years old	4
Over 50 years old	5

A4 Please indicate your highest education

Less than matric	1
Matric	2
Diploma	3
Degree	4
Postgraduate qualification	5

A5 Please indicate your employment status

Student	1
Unemployed	2
Employed	3
Other	4

A6 Please indicate your monthly income

R1 000-R1 999	1
R2 000-R2 999	2
R3 000-R3 999	3
R4 000-R5 000	4

A7 Please indicate your period of cell phone usage

Under 1 year	1

2-3 years	2
4-5 years	3
6 years and more	4

Please indicate your period of mobile banking usage

Never	1
Under 1 year	2
2 years	3
3 years	4
4 years and above	5

Please indicate which bank you currently use

Standard Bank	1
FNB	2
Capitec	3
ABSA	4
Nedbank	5
Other (please specify)	6

SECTION B

Mobile banking

Please indicate the extent to which you agree or disagree with the statement by marking (X) on the respective number in the 5 point scale below:

1	2	3	4	5
Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree

MB1	I would use Mobile banking if I could use it on a trial basis first to see what it can offer	Strongly Disagree	1	2	3	4	5	Strongly Agree
MB2	I would use Mobile banking if I could see a trial demo first?	Strongly Disagree	1	2	3	4	5	Strongly Agree
MB3	I would use Mobile banking if I could test Mobile banking first?	Strongly Disagree	1	2	3	4	5	Strongly Agree
MB4	Mobile banking would allow me to manage my finances more efficiently?	Strongly Disagree	1	2	3	4	5	Strongly Agree
MB5	Mobile banking would be complex to use?	Strongly Disagree	1	2	3	4	5	Strongly Agree

Source: Sharma (2011)

Financial literacy

Please indicate the extent to which you agree or disagree with the statement by marking (X) on the respective number in the 5 point scale below:

1	2	3	4	5
Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree

FL1	I know about managing personal finance	Strongly Disagree	1	2	3	4	5	Strongly Agree
FL2	Am aware of financial products and services provided by commercial banks	Strongly Disagree	1	2	3	4	5	Strongly Agree
FL3	I have a working knowledge of financial institutions	Strongly Disagree	1	2	3	4	5	Strongly Agree
FL4	I have adequate skills in financial management	Strongly Disagree	1	2	3	4	5	Strongly Agree
FL5	Am capable of discussing money and financial issues with comfort	Strongly Disagree	1	2	3	4	5	Strongly Agree
FL6	Am very confident when making financing decisions	Strongly Disagree	1	2	3	4	5	Strongly Agree

Source: Nkundabanyanga, Kasozi, Nalukenge and Tauringana (2013)

Social pressure

Please indicate the extent to which you agree or disagree with the statement by marking (X) on the respective number in the 5 point scale below:

1	2	3	4	5
Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree

SP1	I would use mobile banking because people think I should use mobile banking	Strongly Disagree	1	2	3	4	5	Strongly Agree
SP2	I would use mobile banking because it is very famous	Strongly Disagree	1	2	3	4	5	Strongly Agree
SP3	I would use mobile banking because many people use mobile banking	Strongly Disagree	1	2	3	4	5	Strongly Agree

Source: Gu, Lee and Suh (2009)

Perceived credibility

Please indicate the extent to which you agree or disagree with the statement by marking (X) on the respective number in the 5 point scale below:

1	2	3	4	5
Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree

PC1	When using mobile banking, I believe my information is kept confidential	Strongly Disagree	1	2	3	4	5	Strongly Agree
PC2	When using mobile banking, I believe my transactions are secured	Strongly Disagree	1	2	3	4	5	Strongly Agree
PC3	When using mobile banking, I believe my privacy would not be divulged	Strongly Disagree	1	2	3	4	5	Strongly Agree
PC4	When using mobile banking, I believe the banking environment is safe	Strongly Disagree	1	2	3	4	5	Strongly Agree

Source: Yu (2012)