

# THE IMPACT OF MOBILE BANKING CUSTOMER EXPERIENCE ON LOYALTY AMONG MILLENNIALS IN SOUTH AFRICA

A DISSERTATION PRESENTED TO THE

DEPARTMENT OF INFORMATION SYSTEMS



UNIVERSITY OF CAPE TOWN

BY

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*In partial fulfilment of the requirements for the Masters in Information Systems*

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## ABSTRACT

The modern environment of pervasive interconnectedness via mobile devices and services makes it important to understand the nature of customer-bank interactions and relationships. Businesses that offer mobile banking are trying to provide their customers with improved customer service and experiences. The objective of this study is to examine how customer experience of mobile banking influences loyalty towards the bank. This study focuses on the millennials in South Africa.

Banks need to remain competitive in the ever-changing business environment. Millennials are one of the largest customer segments with a large digital and mobile appetite; as a result, they form a natural target for banks. To increase their customer base, banks need to ensure that their customer experience strategy caters for these young customers in accordance with their expectations. However, customer experience within mobile banking is under researched. Previous studies in this research area have focused on customer experience in traditional banking context. This study tries to fill the gap by exploring the factors that influence customer experience in mobile banking and also understand how this experience influences customer loyalty to their bank. Considering this, a broad literature review was done that revealed the factors that influence mobile customer experience. Based on literature a conceptual model was developed and this model was used a framework for investigating the research problem.

This study used a mixed methods strategy and collected data from 344 mobile banking users via an online survey questionnaire and further, 10 semi-structured interviews were also conducted. The research hypotheses were tested through regression analysis and this resulted in 4 out of 8 research hypotheses being supported. Thematic analysis was used for both the open-ended questions in the survey and the 10 interviews. The results showed that convenience, ease of use and customization are the most significant factors that influence customer experience in mobile banking, whereas the customer experience was in turn found to have a significant influence on customer loyalty.

Through conducting this research on millennials in South Africa, this study has expanded the knowledge of mobile banking research in the country. A valuable contribution was made by this study, as this study gave better insight into the factors that significantly influence the customer's experience of millennials in mobile banking. This study recommends that, it is important that banks as well as other firms that offer mobile banking offer a mobile app that is convenient and lets customers to perform their activities in a flexible way in their own time, easily and in a customizable manner. Therefore, should banks implement this study's

recommendations it will be beneficial for them as this will result in increased loyalty of their millennial mobile banking customers.

**Keywords:** Mobile Banking, Customer Experience, Loyalty, Millennials, South Africa, Mixed Methods

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## DEDICATION

This dissertation is dedicated to my late mother Tracy Ncube.

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## LIST OF COMMON ACRONYMS

CE .....	Customer Experience
ICT .....	Information and Communication Technology
IS.....	Information Systems
KMO.....	Kaiser-Meyer-Olkin
MB.....	Mobile Banking
MMR.....	Mixed Methods Research
OCE.....	Online Customer Experience
OFE.....	Online Functional Elements
PCA.....	Principal Components Analysis
PV.....	Perceived Value
SPSS.....	Statistical Package for the Social Sciences
SRT.....	Smart Retail Technology
UK.....	United Kingdom
USA.....	United States of America
USD.....	United States Dollar

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# CHAPTER 1: INTRODUCTION

## 1.1 Introduction

Over the last few decades, banks have embraced a growing number of technology-based service innovations over and above the traditional brick and mortar branches, for example ATMs or Cash dispensers, automated phone banking, Internet banking and, lately, mobile banking (Illia, Ngniatedema & Huang, 2015; Silva, Samuel, Francisco & Francisco, 2013). Worldwide the number of mobile banking users was 590 million in 2013 and, by the end of 2017 more than one billion users of mobile phones were projected to have utilised mobile devices for the purposes of banking (Juniper Research, 2013). Mobile Banking is a part of “mobile commerce” and can be defined as any banking transaction, for example, making deposits, sending and withdrawing money, that is done via a portable device such as a mobile phone handset or a digital assistant (Koksal, 2016). With these benefits, mobile banking is seen to be a transformative innovation for most people in developing countries where the majority of the unbanked reside (Mostafa, Reza & Tanvir, 2010). Through mobile banking, the unbanked individuals are now able to partake in the formal financial sector, although the adoption is low (Illia et al., 2015). The estimated mobile payment transaction value in South Africa in 2018 was expected to reach US\$ 304 million with an anticipated yearly growth of 44.6 (Statista, 2017). According to Deloitte (2010) mobile banking users will exceed the online banking user by 2020 and this is partly made possible by the rapid increase of smartphones (Alavi & Ahuja 2016).

This increase in the popularity of mobile banking services among customers specifically the millennials, has led to increased competitiveness in the banking sector. In order to seize and keep mobile customers, and to entice new users, particularly millennials who see value in mobile services (Chuah, Marimuthu & Ramayah, 2014) and who eagerly embrace mobile services (Lella & Lipsman, 2014); banks must craft mobile strategies that are effective, emphasizing and supporting the benefits and worth of the mobile offerings (Laukkanen, 2016). Globally, the millennial cohort represent a lucrative current and future market segment because they are relatively young, make up greater than 25 percent of the global population (Nusair, Bilgihan, Okumus, & Cobanoglu, 2013), are very sociable, technology literate, and media /tech savvy (Nusair et al., 2013). The millennials are also perceived to be unpredictable and less loyal to a brand compared to their predecessors, the Gen X and Baby Boomers. This makes it challenging for marketers to keep them as customers (Lazarevic, 2012; Kim & Kandampully, 2012). Millennials are the most value-conscious and emotionally driven cohorts (Blighan, 2016) who see value in an offer in a different way than other

generations (Parment, 2013). Firms and their brands must be adaptable and responsive to these significant changes by learning to make use of new digital ICT platforms to target millennial customers effectively (Bevan-Dye & Dondolo, 2014). Owing to their significance as a customer group, emerging studies tend to focus on the millennial customer consumption patterns (Spielmann, Babin & Verghote, 2016) so as to, among other issues, manage the high expectations of these digitally empowered customers and provide them with a great experience (Alavi & Ahuja 2016).

Lately, firms have tried to attract young generations with technology and social media; however, millennials are considered the least loyal generation to date (Bilgihan, 2016; Wojcik, 2018). Loyal customers have a positive influence on a firm's revenue streams and profitability (Malhotra, Sahadev & Purani, 2017). In today's competitive environment loyalty efforts are critical; therefore, it is essential for businesses to understand where loyalty is created and how it is created (Reichheld, 2003). Loyal customers on average spend 67% greater than new customers (Abramovich, 2017). According to Haemmelmann (2018) millennials have approximately \$600 billion in spending power as of March 2018. Therefore, businesses cannot lose the chance to seize this market. One to one marketing theory Peppers & Rogers (1993) indicate that customers are individuals who will switch to competitors that meet their individual needs and preferences especially if their current firm doesn't fully satisfy them, this is particularly true of millennials (Paharia, 2013). The loyalty landscape has been changed by millennials; findings also show that millennials are intolerant of bad brand experiences, which can immediately lead to loss of trust and patronage (Parris, 2010). Therefore, this study investigates how customer experience of mobile banking influences their loyalty towards the bank.

## 1.2 Research Problem

The arrival of new disruptive technology innovation such as mobile banking and with the banking sector becoming more competitive, the need for an excellent customer experience and for banks to become more relevant to the millennial customer has turned out to be significantly important for the banking industry. Millennials are of great importance to banks since they consist of the largest customer segments and potentially financially active future customer (Lazarevic, 2012). Globally it was projected that millennials will possess a collective buying power of \$2.45 trillion by 2015 (Duffet, 2015). In South Africa millennials spend greater than R100 billion annually (Levin, 2013).

Millennials are presently South Africa's biggest economically empowered customer segment that dominates every industry (VinIntell, 2013). This makes them a profitable target market for mobile banking and this creates a need for banks to ensure that their customer experience strategy caters for young customers in a desired manner (Kyguolienė & Makutėnas, 2017). To increase their customer base, mobile banks need to offer a unique customer experience that is targeted at millennials. Millennials now exceed baby boomers and represent the largest population for banks. However, while millennials form a natural target for mobile banking because of their digital and mobile appetite, the customer experience and mobile experience is vital since poor apps double the likelihood of millennials switching than the overall population (Efma, 2017). Extant literature suggest that the establishment of loyalty lies in successful customer experience management, yet there is little existing research that incorporates this variable into the explanation of customer loyalty in mobile therefore indicating a gap in existing knowledge. There is little understanding of how a customer's experience of mobile banking impacts their loyalty towards the brand or business within the millennial cohort. On this basis, this study investigates how customer experience of mobile banking influences their loyalty towards the bank.

### **1.3 Research Aim**

The purpose of this study is to investigate how customer experience of mobile banking influences loyalty towards the bank.

### **1.4 Research Objectives**

The objectives of the research are:

- i. To explore the factors which influence a customer's experience of mobile banking.
- ii. To understand to what extent this experience influences a customer's loyalty towards mobile banking.

### **1.5 Research Questions**

This research seeks to answer the following research questions:

- i. What factors influence a customer's experience of mobile banking?
- ii. To what extent does customer experience influence loyalty towards mobile banking?

## 1.6 Importance of this Study

The key contribution of this research study relates to the focus on the millennial customers value experience and the provision of a thorough comprehension of it in the context of mobile banking. Hence this study contributes to both marketing and IS research by extending past research on customer centred mobile banking service. This is achieved through the provision of a framework that identifies variables related to customer experience in a mobile banking service context and how these influence loyalty. The present study therefore tries to verify factors of customer experience in the context of mobile banking in South Africa and investigates their impact on customer loyalty. The goal is to give insight to banks on crucial customer experience factors and also empirically test their influence on customer loyalty. These findings will assist banks and other financial institutions to improve their strategies and operations in a customer centric manner in order to best serve millennial customers. This will in turn help them to build enduring, profitable customer interactions and improve future viability. A number of studies have been done to investigate the impact of customer experience in the context of service organizations; however less attention is given to measure and conduct research on the factors of customer experience in South African mobile banking industry. This necessitated the need of this present study.

## 1.7 Structure of Dissertation

This dissertation contains six chapters. This chapter is a general introduction to the study and the rest of this dissertation is structured as follows.

The next chapter in this study continues with a literature review on the phenomenon of mobile banking customer experience in general, zooming in on how it impacts customer loyalty. This chapter first examines customer experience within a mobile context and then defines millennials and their characteristics. This is then followed by a discussion of the factors influencing customer experience. The chapter is then concluded by presenting a conceptual model that relates to this study.

Chapter three presents the research design which focuses on the research methods used in this study. The research design of this study is discussed from the philosophical assumptions, purpose, and approach, research methodology and ethics and confidentiality.

Chapter four presents the detailed results/findings of the experiences of mobile banking millennial customers used in this study.

Chapter five discusses and analyses the findings in relation to existing literature.

Chapter 6 concludes the study by revisiting and answering the research questions and also providing the contributions and recommendation from the study as well as noting the limitations and suggesting avenues for potential future research work related to this study.

## CHAPTER 2: LITERATURE REVIEW

### 2.1 Introduction

This chapter presents a literature review of mobile banking and customer experience concepts. It is organised as follows: Firstly, a discussion of mobile banking is presented (section 2.2). Thereafter, a discussion of customer experience in a mobile context is presented (section 2.3). A discussion of millennials and their characteristics follows (section 2.4). The next section presents the factors that influence the customer experience as well as the hypothesized relationships (section 2.5). Loyalty is also discussed next as an outcome of a customer's experience of mobile banking (section 2.6). Lastly the literature review is summarized including the key concepts of the literature review in a derived conceptual model are presented (section 2.7).

### 2.2 Mobile banking

The mobile banking concept dates back to the late 1990s when it was first introduced in Germany in collaboration with Deutsche Bank (Shaikh & Karjaluo, 2015). The mobile money market was expected to reach 1.3 billion USD at the end of 2019 from around 655.8-million in 2014 (Caulderwood 2015; Asongu & Nwachukwu 2017). M-Pesa was the first text based mobile banking service to be introduced in Kenya in 2007 among developing countries. By the close of 2012 the sum of M-Pesa registered users in Kenya exceeded seven million (Shaikh & Karjaluo, 2015). Traditional banks that have embraced mobile banking; have decreased their operating costs, while providing more suitable services, resulting in meaningfully improved banking engagement with the "unbanked" people mostly in developing countries (Lin, 2013; Shaikh & Karjaluo, 2015).

The usage penetration of mobile banking services by traditional banking institutions in many countries is still very minimal despite its impressive benefits (Alalwan, Dwivedi, Rana & Simintiras, 2016; Malaquias & Hwang, 2016). If embraced, mobile banking could yield important results in developing countries where scores of consumers lack access to traditional banking services or are prohibited by the cost of such services (Gutierrez & Singh, 2013). More than 2.7 billion people in developing countries do not own traditional banking accounts (Anong & Kunovskaya, 2013). In developing countries, the sum of consumers who possess cellular phones, far outnumber those that possess traditional banking accounts

(Porteus, 2006; Koech, 2012). Therefore, mobile banking presents opportunities for considerable financial inclusion for the betterment of livelihoods and business development, particularly for individuals that have been excluded from the formal banking institutions. Mobile banking has been found at a macro-level to positively influence “inclusive development” in developing countries (Asongu & Nwachukwu, 2018). Similarly, in a South African context mobile banking serves as an important interface between banking institutions and the low-income population through the provision of convenient transfer, investment and saving opportunities.

### **2.3 Customer Experience in a Mobile Context**

A customer’s individual responses that result from interacting with a firm are referred to as customer experience (Lemke, Clark & Wilson, 2011; Martin, 2017; Scherpena, Draghicib & Niemann, 2018; Scheidt & Chung, 2018). The creation of an exclusive customer experience is quickly becoming the key goal for differentiation (Srivastava & Kaul 2016) and comes ready with the guarantee of strong competitive edge and profitability (Martin, Mortimer & Andrews, 2015). Morrison and Crane (2007) demonstrated that for services, the design and provision of an emotion-rich experience delivers a differentiated brand and impacts sales, customer loyalty and brand promotion. Customers desire a personal customer experience from their bank, and mobile provides a distinctive, personalized experience better than other technology. Customer experience results from the interaction that occurs between the business and the customer; this is inclusive of interactions with self-service technologies, service environment, customers and service firms (Sirapracha & Tocquer, 2012). The newest method of mobile banking, which is through mobile apps, has grown vastly popular throughout the world because of the surge in the usage of smartphones. Modern mobile banking applications present a number of widespread features for example a better-off user interface and a user interface specific to mobile devices, improving customer experience.

Nowadays customers have great expectations of the mobile channel performance of their businesses’. It is evident that banks are service providers whose financial success is dependent on the perceived service quality and experience of customers’ (Andaleeb, Rashid & Rahman, 2016). The overall customer relationship can be affected by a poor mobile experience. Hence it is important for businesses to have visibility into the mobile experience of their customers. Millennials are by far more eager to use mobile banking in comparison to other age groups, putting added significance on the improvement of this channel (Capgemini

& Efma, 2016). In South Africa, banks are continually refining their strategy to meet the needs of millennial customers by means of cost effective and simple banking methods (KPMG, 2016). Customers nowadays demand a distinguished experience from banks, which, if satisfied might lead to a meaningfully enhanced customer satisfaction, and possible retention levels (Putnam, 2012). Customer experience is a developing opportunity in the experience economy since it is anticipated that customers with good experiences can have a three to five times likelihood to purchase more products (Capgemini & Efma, 2015). However, the consequence of provision of a poor online customer experience results in a 24 percent yearly online revenue loss. According to Econsultancy (2011) this is equivalent to greater than \$50billion lost in the USA and £14billion annual loss in UK.

Although there have been several studies examining customer experience (CE), these have not been situated within the context of mobile commerce (Chen, Hsu & Lu, 2018). The current study focuses on customer experience in relation to the mobile channel – hereby defined as ‘a psychological state, manifested as a subjective response to mobile services provided by e-retailers’ (Rose, Clark, Samouel & Hair, 2012: 309). Given that one of the factors influencing banks success is the number of customers it has (Garg, Rahman & Qureshi, 2014), it is imperative that financial institutions become aware of the factors influencing a positive customer experience, since this leads to retention or loyalty. Most importantly, financial institution needs to understand one of the new types of customer – the millennials or sometimes referred to as the Generation-Y, Net Generation and Generation C (the connected), (Bruwer, Saliba & Miller, 2011; Nielsen, 2012; Nusair et al., 2013).

## 2.4 The millennials

Although there are several contesting views as to who is a millennial, this study regards millennials as those born between 1980 and 2000 as this will be inclusive of most of the time intervals that are available in literature (Miller, 2011; Goi and Ng, Lyons & Schweitzer, 2012; Valentine & Powers , 2013). Millennials constitute more than a quarter of the population in the world (Nusair et al., 2013), are very sociable, technology literate, and tech/media savvy (Bilgihan, 2016) and most notably, they grew up with technology at their fingertips (Palmer, 2009). The millennial generation was said to be representing a third of the world’s population in 2016 (He, Goodkind & Kowal, 2016; U.S. Census Bureau, 2016). Close (2015) submits that millennials are the most technologically innovative generation to date, because they have been raised with mobile phones and the internet. This is the first generation grow up in a world where they could easily access technology and the internet, because of the rapid-

changing technology such as the internet and mobile devices, this generation has adopted technology as a part of their way of life. Millennial generation is unique, as it consists of tech-savvy and mostly young persons who are eager to accept new technology (Goi & Ng, 2011).

Millennials are usually the first to adopt and intensely use modern mobile technologies (Spaid & Flint, 2014). Further, according to Duffet (2015), millennials possess a great influence on other cohorts and have a significant buying power, believed to contribute 2.45 trillion dollars worldwide in 2015. In recent years millennial generation has attracted the interest of researchers, as this is undoubtedly the biggest generation in the world population size to date (Stein, 2013). This generation differs remarkably from preceding generations, typically showing the values of people in the current era (Martins, 2014). With all these characteristics, it is therefore not unexpected that millennials form a generational cohort that has the greatest level of mobile internet penetration, with a figure of 74% in the initial quarter of the year 2014 (Statista, 2016). Millennials are an important market segment for firms to consider (Pomarici & Vecchio, 2014). Reports recently show that millennials are projected to spend greater than other generations (Fleming, 2016) due to their size, superior spending power, and their socialization in the process of consumption. Millennials have turned out to be an important and attractive consumer segment. It is important that businesses need to learn to manage the high expectations of the digitally empowered customers and provide great experiences (Alavi & Ahuja 2016). Given the importance of this generation especially in a mobile context, this study investigates how customer experience of mobile banking influences their loyalty towards the bank in South Africa.

## **2.5 Factors influencing customer experience**

A broad review of recent literature finds several key dimensions that have the capability of influencing customer experience within a mobile environment. These are discussed in the subsequent sections. Table 1 identifies authors that investigated customer experience factors in previous studies (research summarized in Table 1). These studies that appear in the table nevertheless offer a theoretical framework for the study at hand.

### **2.5.1 Convenience**

Convenience from a mobile banking perspective may be defined as the ability to receive round the clock banking services in a way which is believed to be superior in comparison to

the other alternative banking channels (Chawla & Joshi, 2017). The ability of customers to finish tasks efficiently in a manner that is suitable and satisfactory to them is referred to as convenience. Research done previously shows that consumers can access mobile applications anytime and anywhere (Andrews, Luo, Fang & Ghose, 2015; Shankar, Kleijnen, Ramanathan, Rizley, Holland & Morrissey, 2016) this leads to a convenient way to do their shopping and a key service quality of mobile banking (Jun & Palacios, 2016). Earlier studies have shown that convenience exerts a positive influence on customer experience (Garg et al., 2014; Klaus & Maklan, 2013). Hence, this study hypothesises that:

*H1: Convenience of mobile banking applications positively influences customer experience.*

### **2.5.2 Ease of Use**

The ability to easily navigate through an app and finish intended tasks in a hassle-free fashion is referred to as ease of use. Davis (1989) refers to ease of use as the easiness with which a customer learns how to utilise a system particularly its elementary functions. Originating from the technology acceptance model, ease of use is outlined as a key variable which has the capability to influence customer emotions within the online retail environment. Looking at ease of use from a technological system perspective, it is centred on how the system permits a user/customer to do tasks, increase efficiency, output and performance (Chau & Lai, 2003) and is perceived to be a sign that a company understands, cares and respects its customers (Egger, 2001). A closely related dimension to ease of use is perceived usability – the ease of use, flexibility, simplicity and user-friendliness (Alalwan et al., 2016). Usability is identified as one of the important factors determining the adoption of mobile banking (Gu, Lee & Suh, 2009) and leads to a positive experience online because phones and mobile banking apps have friendly user interfaces (Cheung, Chan & Limayem, 2005; Lin, 2011). Similar findings are also reported by Mbama and Ezepeue (2018) including Deb and David (2014). Thus, this study hypothesizes that:

*H2: Ease of use (usability) of mobile banking applications positively influences customer experience.*

### **2.5.3 Customization**

The capability to screen content, filter preferred content and create an experience that is unique to the needs of the client is known as customisation. Customization enables customers to adapt products and services in accordance to what they prefer, while at the

same also allowing service providers to suggest products or services that suit customers' choices (Xu, Thong & Venkatesh, 2014). Although some previous research distinguishes between customization and personalization, they both fulfil the goal of changing services to meet customer's needs (Ho & Bodoff, 2014). This research includes these two mechanisms as the element of a single construct of customization. Within the context of smart customer experience personalisation is explained as the ability of Smart Retail Technology (SRT) to provide personalised (customised) services to customers (Neuhofer, Buhalis & Ladkin, 2015). According to Truel and Connelly (2013), the increasing role of technology has led to a surge in the usage of technology for the provision of customized services. Although customization is not perceived to be as influential on the customer experience as compared to ease of use within the online web setting (Martin et al., 2015); researchers agree that customisation has the ability to influence customer experience (Bilgihan, Nusair, Okumus & Cobanoglu, 2015). Therefore, the study hypothesizes that:

*H3: Customization of mobile banking applications influences customer experience*

#### **2.5.4 Enjoyment**

The act of using a certain system that is enjoyable not withstanding any performance concerns emanating from the usage of the system is referred to as enjoyment (Venkatesh, 2000). Customers are likely to be unsatisfied when they don't derive the hedonic aspect of enjoyment from the usage of mobile applications (Hsiao, Chang, & Tang, 2016). Research that was previously done within an online web context highlights that consumers who don't experience enjoyment during an online shopping will endeavour to finish the task at another provider (Faiola, Newlon, Pfaff & Smyslova, 2013).

Enjoyment is associated with the intrinsic value which a customer experiences from their association with an online product or service. Similarly, within the context of smart retailing technology (SRT) the perception of enjoyment is an aspect which relates to the degree to which enjoyment is perceived by customers who use SRT (Choi & Park, 2014). Further, as argued by researchers, customers anticipate the mobile shopping services to serve their enjoyment and self-expression requirements (Shankar et al., 2016). Making an experience that is fun, enjoyable and produces feelings of being in control for the customer results in a positive online customer experience (Wolfenbarger & Gilly, 2001). The study therefore hypothesizes that:

*H4: Enjoyment of mobile banking applications positively influences customer experience*

### 2.5.5 Brand Trust

According to literature of mobile banking trust has been highly accepted as a vital aspect that determines customer perception and inclination to take up mobile technology (Alalwan, Dwivedi, Rana, Lal, & Williams, 2015; Hanafizadeh, Behboudi, Khoshksaray & Shirkhani Tabar, 2014). Trust comes into existence when single party stands confident in another partner's dependability and integrity (Morgan & Hunt 1994). Trust and credibility conceptually overlap with each other (Adams, Highhouse & Michael, 2010). Therefore, in this study the trust and credibility are used interchangeably. Literature lacks a standard definition of trust and credibility. This research uses a common theme cutting across various definitions of trust and credibility to define these in a retail banking context as, dependability and belief placed by banking customers in the fulfilment of obligations towards them in a manner that protects their interests and culminates in positive outcomes (Chaudhuri & Holbrook, 2002; Newell & Goldsmith, 2001; Simons, 2002). The willingness of customers to remain invested with the bank reflects their trust in their banks. Such willingness in the customer emanates from the conviction that develops from their previous experiences with the bank's products and services. Research done previously has revealed that trust is important for building long-lasting relations between organizations and customers, more so in the risk susceptible mobile and online banking channels (Berraies, Ben Yahia, & Hannachi, 2017).

The approaches that involve loyalty to either a brand or service provider that is known and trusted are normally used. Lack of trust can affect how customers view banks particularly their attitude to the latest methods of service delivery through the internet (Sekhon, Zhao, Koenig-Lewis, Hanmer-Lloyd & Ward, 2010). Trust is a significant antecedent in the majority of models which deal with associations which include either loyalty or satisfaction as their dependent variables (Verhagen, Meents & Yao-Hua, 2006). Brand integrity is the extent to which a service is regarded to be credible (Keisidou, Sarigiannidis, Maditinos & Thalassinou, 2013). Previous research on brand, image and trustworthiness has found these to influence the choice of a bank for customers (Fathollahzadeh, Hashemi & Kahreh, 2011; Akhter, Abbasi, Ali & Afzal, 2011). According to Kim, Shin and Lee (2009) mobile banking is considered to be linked with higher risk in comparison to normal banking; therefore, the customers' trust in services is an essential factor for using m-banking. According to Ramaseshan and Stein (2014) the method by which consumers develop trust to a brand is reliant on their experience with that brand. Therefore, this study proposes that there is a positive relationship between brand trust and customer experience.

*H5: Trust in the brand of mobile banking applications positively influences customer experience.*

### **2.5.6 Functional Quality**

The functionality of online systems which includes its activities and features with an effect on customer experience is referred to as functional quality (Garg et al., 2014). Research conducted by Monferrer-Tirado et al. (2016) showed the importance of functional quality of service offerings for bank customers. They maintained that functional characteristics determine both the satisfaction and trust perceptions of the bank customers that are projected to be extremely results focused. The adoption of mobile form of banking is influenced by functional quality (Lee & Chung, 2009); other studies indicate that functional quality influences customer satisfaction, trust and loyalty (Monferrer-Tirado, Estrada-Guillén, Fandos-Roig, Moliner-Tena, & Sanchez Garcia, 2016). However, for the context of this study we need to test this in a South African mobile banking context. In a research aimed at evaluating customer experience in Indian banks Garg et al. (2014) uses a factor called online functional elements (OFE) to measure customer experience. OFE is defined as the features that essentially relate to the functionality aspect of a website which include its usability and interactivity tend to have a major effect on the users web-experience. Therefore, the study proposes that:

*H6: Functional quality of mobile banking applications positively influences the customer experience.*

### **2.5.7 Satisfaction**

Satisfaction refers to a consumer's emotional state of happiness or regret that results from a comparison of the product performance results in relation to their expectations (Kotler, 2000). The conceptualisation of satisfaction is in two forms namely transaction specific and cumulative satisfaction, the earlier satisfaction relates to a particular service encounter while cumulative satisfaction relates to complete overall encounter to date (Kaura, Durga Prasad, & Sharma, 2015). In loyalty research, satisfaction is usually conceptualised as cumulative satisfaction (Harris & Good, 2004). The overall satisfaction is comparatively much more stable than transaction specific satisfaction (Parasuraman, Zeithaml & Berry, 1994), it is therefore on this basis that this particular research makes use of cumulative rather than

transaction-specific satisfaction. According to Liang, Wang and Farquhar (2009), customer satisfaction is the overall customer experience. According to Rowley (1999), customer experience and satisfaction are intricately connected. Even though customer experience and satisfaction are distinct constructs (Garbarino & Johnson 1999) they are linked through a contributory relationship (Fornell, 1992). Empirical evidence proves that the usage continuance of mobile banking for financial transactions is determined by the satisfaction derived from the previous experience encounters of consumers (Lassala et al., 2010). Therefore, in this study, we hypothesize that:

*H7: Customer satisfaction in mobile banking applications positively influences the customer experience.*

### **2.5.8 Perceived Risk**

When customers perform transactions online there exist some forms of financial, product, social, psychological, performance and physical risks which are referred to as perceived risks (Wu & Wang, 2005). The major factor that affects service quality in a mobile banking environment is security (Jun & Palacios, 2016). In some countries, perceived risk influences mobile adoption (Martins et al., 2014; Hanafizadeh et al., 2014). Security is one of the areas that banks continuously invest in so as to mitigate risks. In a study by Mbama and Ezepe (2018), the findings show that the main dimensions that determine customer experience in digital banking include perceived risk.

This dimension is applicable in a mobile banking context. There is increased risk in mobile banking than other fixed devices mainly because of the remote connection (Hanafizadeh et al., 2014). In the mobile banking adoption study done in Iran, the provision of secure personal transactions was identified as a factor that would ensure mobile banking success. This means that the more the risk in mobile banking the greater negative the perception towards it. Perceived risk has a negative effect on repeat purchase behaviour and the potential to discourage transactions. Kim and Lennon (2013) agree with these results and have revealed that perceived risk exerts a substantial negative influence on emotions. According to Mitchell (1999) perceived risk is more influential in explaining customer behaviour because consumers wish to prevent mistakes than to make the most of utility in purchasing. Therefore, in this study, we hypothesize that:

*H8: Perceived risk of mobile banking applications has a negative influence on customer experience.*

### 2.5.9 Social Influence

According to Chou and Katelin (2016), social influence is the extent that an individual believes that it is important for others to believe that she/he uses new technology or conform to the expectations of others. Lemon and Verhoef (2016) suggest that customer experiences are increasingly social than previously therefore; the social element cannot be overlooked. Previous research conducted in a mobile-service environment reports on the significance of social value in terms of pursuit of membership of a social class (Gummerus & Pihlström 2011). Consequently, the behaviour of individuals is influenced by the manner that family members or peers value the use of mobile banking. Individuals may experience a sense of professionalism or trendiness from using a new service technology such as mobile banking (Oliveira, Faria, Thomas & Popovič, 2014).

In e-services context social presence boosts customer perceptions of both website and the online relationship (Cyr, Hassanein, Head & Ivaniv, 2007). Customer interactions have an influence on customer experience (Baron, Harris & Davies, 1996). McColl-Kennedy, Cheung and Ferrier (2015) suggest that customers can influence each other via smartphones, social networks and other ways. Previous research also suggests that social density may influence customer experience (Tombs & McColl-Kennedy, 2013). This means that in high social density settings, interactions among numerous actors are frequent, for example in crowded cafes or active social media chat rooms. This effect can either be negative or positive to the customer experience. In retail context customers usually visit a retail space with friends and family members. This may also influence the customers own experiences and that of other customers. The social environment influences customers experience (Verhoef et al., 2009). Therefore, social influence is one element of customer experience that is important to consider especially when looking at mobile banking. In this study we hypothesize that:

*H9: Social influence has a positive influence on customer experience in mobile banking.*

### 2.5.10 Personal Innovativeness

The degree that a person is willing to try out new functionality and other aspects of new technologies is called Personal Innovativeness (Chen & Dai, 2014; Yi, Fiedler & Park, 2016). Personal innovativeness as a personal characteristic differs among persons and is likely to influence their customer experience. According to a study by Amoroso and Ogawa (2013) innovativeness has been shown to be a strong psychological and cognitive force that plays an important role in the determination of customer experience. In information systems

personal innovativeness is defined as the desire of a person to explore new technology (Agarwal & Prasad, 1998). Therefore, in this research, we define personal innovativeness as a person's willingness to explore mobile banking.

Mobile banking apps are relatively modern technologies with constant innovations and changes. In this research we insist that users that are innovative are more likely to enjoy the immediate satisfaction and convenience offered by mobile banking apps. An individual's beliefs regarding new information technology is significantly influenced by the person's innovativeness in technology (Srivardhana & Pawlowski, 2007). This means that individuals who are innovative technically will positively respond to innovations (Agarwal & Prasad, 1998). Research by Lian, Chen and Wang (2012) showed that personal innovativeness in information technology usage was greatly linked to a positive perception towards online shopping, and fundamentally to the increased behavioural intention to make use of an online store. According to previous research from Liu and Zhang (2014), customer innovativeness is linked to the use of new retail channels particularly those that use technologies like on the internet or mobile devices. Chen and Dai (2014) in the context of m-commerce unsurprisingly found a relationship between personal innovativeness and continuance intention. Earlier studies have revealed that greater innovativeness in individuals is linked to positive attitudes and beliefs about technology (Ali, Nair & Hussain, 2016). This is because these individuals want to continue to use the app and show loyalty to extend their experience of instant satisfaction and convenience. We therefore propose the hypothesis below:

*H10: Personal innovativeness has a positive influence on the customer experience in mobile banking.*

### **2.5.11 Demographic factors**

These hypotheses tests if the demographic factors ages, gender, race, level of education and occupation have an effect on customer experience in mobile banking. The study of human population statistics is known as demography, this includes size, age, sex, race, location, occupation, income, education and other characteristics (Wu, 2009). There is a wide recognition that demographic factors have a great influence on customer attitudes and behaviour to internet banking (Karjaluoto, 2002). Previous studies indicate that social, economic and demographic factors influence consumer behaviour in e-commerce (Chauhan & Rambabu, 2017). Customer demographics are broadly used to differentiate how a segment of customers varies from one another (Ndung'u, 2013).

This study includes five demographic variables in order to account for any potential influence of these individual differences on the customer experience in mobile banking. These variables are age, gender, education, occupation and race. The control of these demographic and behavioural variables will boost the generalizability of the findings of the study (Zhu, Nakata, Sivakumar & Grewal, 2007). According to Garg et al. (2014) there are significant differences among age groups on customer experience dimensions in the Indian banking context. It has also been broadly generally accepted that men and women experience customer experiences differently (McGovern, 2013). Other related studies suggest that the differences in thinking and conduct of men and women are centred on the role they play in society (Hidayetoglu, Yildirim & Akalin, 2012; Yildirim, Hidayetoğlu & Capanoğlu, 2011). Another important factor in the adoption of mobile banking is education because higher education can result in improved understanding and better ability to make use of mobile banking technologies. According to Alafeef, Singh and Ahmad (2011), there is an important relationship between education level and mobile banking adaptation. In an online shopping context empirical findings reveal that better educated persons have a greater likelihood to favour online shopping (Kim & Kim, 2004). However, research which examines education as an independent variable in investigating customer service experience quality components is scarce (Yildirim, Cagatay & Hidayetoğlu, 2015). In this study we thus propose that:

***H11a: Differences in age will influence how customers experience mobile banking.***

***H11b: Differences in gender amongst millennials will influence how customers experience mobile banking.***

***H11c: Differences in race amongst millennials will influence how customers experience mobile banking.***

***H11d: Differences in education level amongst millennials will influence how customers experience mobile banking.***

***H11e: Differences in occupation amongst millennials will influence how customers experience mobile banking.***

## 2.6 Loyalty

The leading goal for all businesses which has always been the major focus of marketing is customer loyalty (Toufaily, Ricard & Perrien, 2013). Jang and Ha (2014) propose two elements of customer loyalty, that is, attitudinal loyalty and behavioural loyalty. The customers desire to re-purchase or recommend is reflected by attitudinal loyalty, while the actual behaviour like how many times a customer has repurchased is measured by behavioural loyalty. Customer loyalty is therefore seen as an individual's internalized commitment to always utilize an institution in the future regardless of external or situational influences (Oliver, 2010). In banking environment, when internet banking users consistently revisit their banking website in order to perform a financial transaction or request financial information this is referred to as loyalty (Rahi & Ghan, 2016). On the other hand, Keller (1993) conceives loyalty as a customer's positive attitude towards brands. The establishment and maintenance of customer loyalty help organisations to develop enduring relations with their consumers (Pan, Sheng & Xie, 2012). According to Suhartanto, Chen, Mohi and Sosianika (2018) loyal consumers are inclined to purchase more than freshly acquired customers, refer new customers to the company, pay the best prices and lower operating costs.

Loyal customers demonstrate affection and obligation to the business and are not easily lured by competitor offerings (So, King, Sparks, & Wang, 2013). The success of a business relies on customer loyalty (Kim, Vogt & Knutson, 2015). According to Lewis and Soureli, (2006) the firm's price is a lesser concern to loyal customers. It is cheaper to keep existing customers in comparison to acquiring new customers (Kim et al., 2015). Loyal customers are less likely to switch to competitor offerings (Santouridis & Trivellas, 2010) and notably, there is a common consensus in academic literature that shows that customer loyalty is the foundation of a sustainable competitive edge (Makanyeza, 2015; Tarus & Rabach, 2013). Technology, and more recent method of mobile banking has allowed banks to have a strong capacity to maintain the existing customer base as well as attracting new clients (Bidarra et al., 2013). In the tourism and hospitality industry existing literature has supported a positive relationship between customer experience and loyalty (Cetin & Dincer, 2014; Loureiro, 2014). For example, Cetin and Dincer (2014) highlight that customer experiences in the hospitality sector are closely linked to customer's loyalty and recommendation behaviours. According to Moon and Han (2018) in their investigation of the relationship between tourist experience and destination loyalty, they found tourist experiences to be the important predictors of destination loyalty. Other studies have also shown that customer experience influences customer satisfaction, attitudinal and behavioural loyalty and word of mouth

(Klaus & Maklan, 2013; Srivastava & Kaul, 2016; Brun, Rajaobelina, Ricard & Berthiaume, 2017). Therefore, effective management of customer experience (CE) is an essential recipe for the establishment of customer loyalty (Crosby & Johnson, 2007) since a positive indelible experience is strongly associated to loyalty predictor. With this understanding, the study hypothesizes that:

*H12: Customer experience of mobile banking applications positively influences customer loyalty.*

**Table 1: Customer Experience Studies**

<b>Authors</b>	<b>Sector/Context</b>	<b>Objective</b>	<b>Dimension of Experience</b>	<b>Findings</b>
McLean et al. (2018)	Retail Mobile Applications	This study explores the association of customer experience and retailers' m-commerce mobile applications	Ease of Use, Convenience Customization, Enjoyment, Timeliness, Satisfaction with Experience, Positive Emotions	These research findings show the significance of utilitarian factors in propelling an effective customer experience.
Mbama & Ezepue (2018)	Banking	This research aims to examine customers' views of customer experience, digital banking, satisfaction, loyalty and financial performance in the UK banks	Perceived value, Convenience Functional quality, Digital banking service quality, Brand (Trust), Employees Customer Engagement, Perceived risk, Perceived usability, Digital banking Innovation	The key determinants of customer experience in digital banking are service quality, functional quality, perceived value (PV), employee-customer engagement, perceived usability and perceived risk.
Brun et al. (2017)	Banking - Multichannel	This study investigates the association between five customer experience dimensions backed by (Schmitt, 1999) (cognitive, affective, sensory, behavioural and social) and service provider loyalty.	Cognitive, Affective (-), Affective (+), Sensory Behavioural, Social.	The finding show that affective dimension negative is the main dimension that influences loyalty, this contributes significantly to marketing literature.
Sorooshian et al. (2013)	Online Environment	This study seeks to develop a framework that explains the link between service quality and customer experience in Iran online environments	Pragmatic, Hedonic, Sociability, Usability.	The findings demonstrate that both the Hedonic and Pragmatic Experience in this model have the most and lowest impact respectively.

Roy et al. (2017)	Smart Retail Technologies	The goal of this study is to explore the dimensions of customer experience within the smart retail technologies environment.	Relative advantage, Perceived enjoyment, Perceived control, Personalization, Interactivity	The results of this study show that smart customer experience immediately increases satisfaction and decreases perceived risk with regards to smart retail technologies.
Chahal & Dutta. (2015)	Banking	The study objective is the measurement of customer experience and how it affects satisfaction, brand equity and word of mouth in banking industry	Sensory, Cognitive Behavioural, Affective, Relational	The research findings suggest that consumers render the greatest significance to CAB (cognitive, affective and behavioural) dimension subsequently followed by relational experience and sensory experience which significantly impact the creation of customer experience.
Garg et al. (2014)	Banking	This study is done in Indian banks with the aim of examining 14 customer experience factors and how they impact satisfaction.	Servicescape, core service, customization, value addition, convenience, marketing-mix, employees, speed, service process, customer interaction, presence of other customers, Online aesthetics, online hedonic elements, online functional elements.	This study findings suggest that “convenience” seems to be the most significant among all dimensions.
Rose et al. (2011)	Online	This research seeks to review literature on the online consumer in order to comprehend the antecedents and results of customer experience within an online purchasing context.	Information Processing, Perceived Ease-of-Use, Perceived Usefulness, Perceived Benefits, Perceived control, Skill, Trust Propensity, Perceived Risk, Enjoyment	These findings contribute to understanding Online customer experience (OCE). There is also acknowledgment of antecedents of OCE by exploration of literature that relates to customer experience in a buying context. Lastly this study proposes the

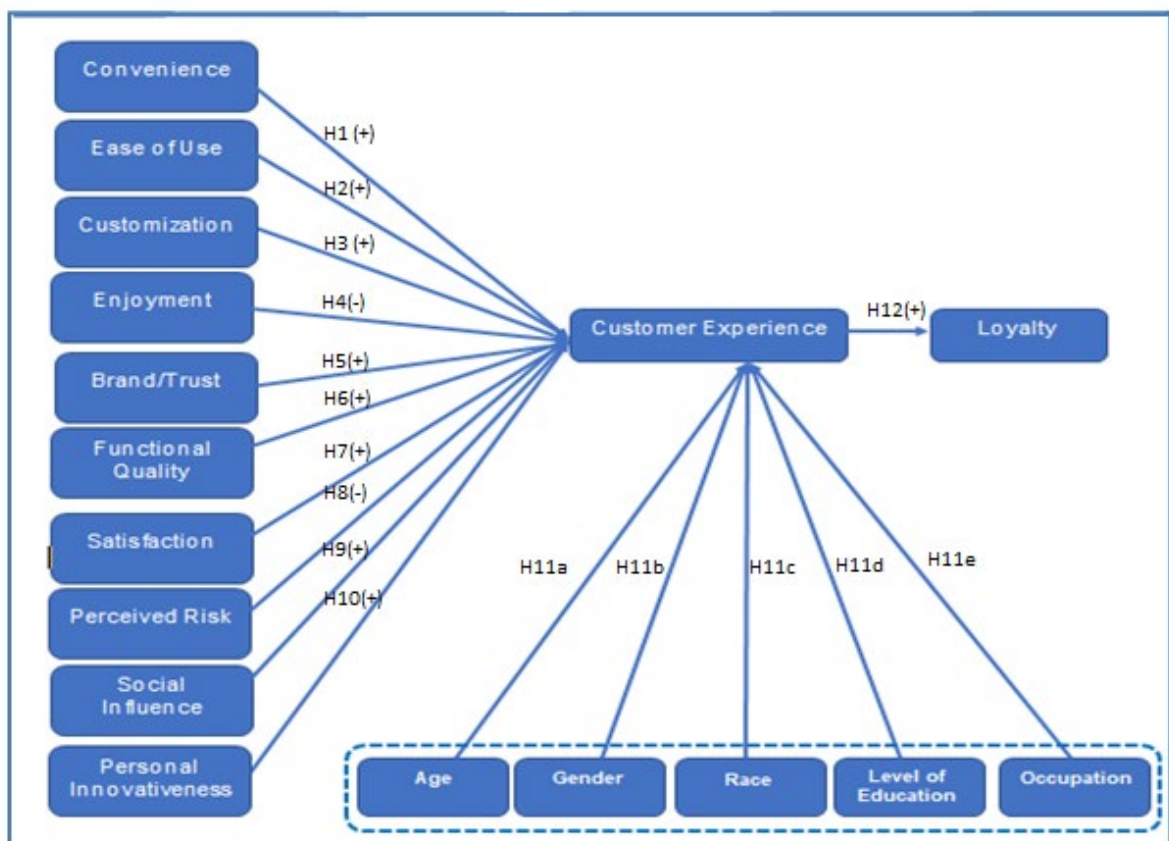
				results of OCE with the provision of a framework.
Ali et al. (2014)	Tourism	This research explores the effect of 4 factors of customer experience on both their memories and loyalty.	Entertainment, education, esthetic, escapism	All the 4 elements of customer experience were found to impact memories and loyalty.
Bilgihan et al. (2016)	Online	The goal of this study is to examine existing literature so as to create a theoretical model on customer behavior for an integrated customer experience online.	Easiness to locate, ease of use, hedonic features, Utilitarian features, usability, perceived usefulness, perceived ease of use, perceived enjoyment, social Interactions	The results of the research study show that the ease of locating the web site or app, ease of use, perceived usefulness, both hedonic and utilitarian features, perceived enjoyment, personalization, social interactions and multi-device compatibility are the antecedents of the unified online customer experience.
Srivastava & Kaul. (2014).	Retail	This study is an attempt to examine the influence of both convenience and social interaction on customer satisfaction and the moderating role of customer experience	Convenience, Social Interaction	Findings show that convenience and social interaction influence customer experience and customer satisfaction.

Mahrous & Hassan (2017).	Tourism	This research provides an exploration of the integrated customer experience journey based on an understanding of multichannel behavior.	Consumer Innovativeness, Convenience seeking, Shopping Enjoyment, need to confirm, Price Conciseness, Perceived Risk, Channel Experience, frequency of travel	The findings show that psychographic factors (shopping enjoyment, convenience seeking, customer innovativeness, perceived risk, Internet experience, frequency of travel, and channel experience) and some demographic variables (i.e., age and income) distinguish among the groupings of multichannel shoppers, multichannel searchers, and store-prone shoppers.
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## 2.7 Summary

Based on the discussion above, this research study presents a research model that aims to explore the factors that influence customer experience. The model indicates that convenience, ease of use, customization, enjoyment, brand trust, functional quality, satisfaction, perceived risk, social influence and personal innovativeness influence customer experience which in turn influences customer loyalty in mobile banking. This research makes an effort to understand the impact of individual differences on how customers experience mobile banking. Demographic factors such as gender, age, educational level, occupation and race are expected to play a significant role in determining how customers experience mobile banking. The model is summarized in Figure 1 below and it shows the relationship between the factors under study.

**Figure 1** : Conceptual Model



## CHAPTER 3: RESEARCH DESIGN AND METHODOLOGY

### 3.1 Introduction

This chapter lays out the research methods and the overall research design that was used in this study. A research design outlines a strategy of investigation that falls within the qualitative, quantitative or mixed methods approaches. According to Creswell (2013) a research design provides direction for actions during the process of research. It is also considered to be a roadmap that needs to be followed by the researcher in order to assist in answering the research questions posed (Yin, 1994).

This chapter is presented in the following manner: Firstly, a discussion of the research philosophies that were adopted is presented in (Section 3.2). Then this is followed by a description of the research methodology which includes the research strategy, the purpose of the research, research approach, population and sampling, research instrument, data collection (Section 3.3). This is followed by a discussion of the data analysis procedures (Section 3.4) and the research timeframe (Section 3.5). The ethics and confidentiality issues are then discussed and how these were addressed (Section 3.6). Lastly a summary of the chapter is presented (Section 3.7).

### 3.2 Research philosophy

The basis for all research is some underlying philosophical assumptions around what is considered a 'valid' research together with which research method is suitable for knowledge creation. The proposed philosophical stance for this study is pragmatism; this is one philosophy that underpins both qualitative and quantitative data collection. According to pragmatism, concepts are only relevant when they back action. Pragmatism is centred on practical experiences instead of focusing on theory alone, (McCartan, 2016). The reason this research uses pragmatism is due to the complex and rich ontological and epistemological view that focuses on problem resolution and its practical meaning of knowledge.

By pragmatism, the researcher's ontological position lies in between the two extreme paradigms combining the ontological and epistemological stances of both the post-positivist and the constructivist paradigms. Pragmatism provides a pluralistic view of the phenomenon under study by mixing these approaches in order to better understand the research problem (Creswel, 2003). This study takes the pragmatism paradigm to understand the mobile

banking customer experience factors that influence the millennial customers' loyalty. A pragmatist suggests that the most important determinant of the research philosophy adopted is the research question (Creswell & Plano Clark, 2011). One approach may be better than the other for answering particular questions. The researcher places value on the interactions between the researchers, research object and in this case the mobile banking perceptions having an influence on the findings.

Ontology is a branch of philosophy that concerns the overall nature of reality. Ontology consists of two major stances; which are objectivism and subjectivism (Saunders, Lewis & Thornhill, 2009). Objectivism suggests that, reality exists independently of the social actors under investigation. On the other hand, subjectivism holds an opposite view, were it assumes that reality is produced through the experience of the social actors and not independent of human interaction and understanding (Dazeley, Stone & Images, 2015). The ontological stance taken for this study is pragmatism. Pragmatism views the problem under research as the most important, value is placed on both subjective and objective as means of getting the answers (Creswell & Plano Clark, 2011, Feilzer, 2010). Basically, a pragmatic approach will typically involve a researcher making use of "what works" in a bid to get answers to the question being researched (Creswell & Plano Clark, 2011). A pragmatic study approach offers a basis for real world research in combining varied perspectives which assists in the interpretation of data in the research.

The assumption about knowledge and how it can be attained is referred to as epistemology (Hirschheim, 1992). The epistemological stance for this study is pragmatism. Pragmatism has a very robust philosophical association intended for a mixed methods approach; it allows for both quantitative and qualitative answers to research questions to be included in the study findings. Pragmatism fits in well with the objective of the study which is to investigate/understand the impact of customer's experience of mobile banking on loyalty among millennials in South African banking sector. Pragmatism also suggests that knowledge is created out of actions, situations and consequences. This stance is suitable for the current study in order to obtain understanding of how a customer's experience of mobile banking influences their loyalty. This study makes use of a sequential explanatory mixed methods research approach (MMR). This explanatory sequential mixed methods approach is characterised by the collection & analysis of quantitative data in the first instance of the research, this is then followed by the collection and analysis of qualitative data in the second instance that builds on the results of the initial quantitative results obtained. Normally this type of study gives the weight to the quantitative data with the initial quantitative results informing the secondary qualitative data collection (Creswell, 2017).

### 3.3 Research Method

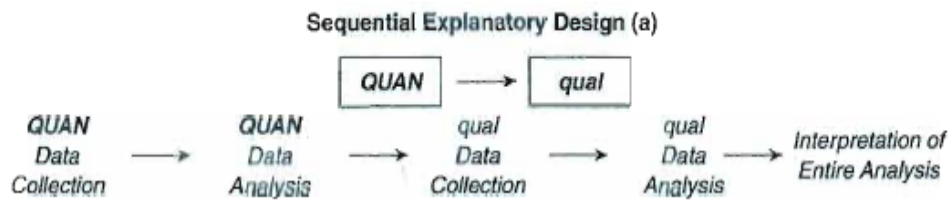
The research method is a strategy of enquiry, which moves from the underlying assumptions to research design, and data collection (Myers, 2009). A mixed methods research is proposed bearing in mind the nature of this research. This study uses both qualitative and quantitative research methods to answer research questions within a single study. This research bases its investigation on the assumption that collecting diverse types of data best provides a better understanding of the research problem.

#### 3.3.1 Research Strategy

This study follows a sequential explanatory design strategy. In this type of design, a researcher begins by collecting and analysing quantitative data. In the second phase qualitative data is collected and analysed to elaborate or build upon the quantitative results in the first phase (Ivankova, Creswell & Stick, 2006). The justification for taking this approach is that in the first phase the collection and analysis of quantitative data provides a more general understanding of the problem under research. The subsequent second phase of qualitative data collection and analysis enhances and explains the quantitative findings by performing a deeper exploration of the participants' views. Therefore, to answer research question 1, quantitative method will be used, but to answer research question 2 both quantitative and qualitative means will be used. This is because many research questions and combinations of questions are usually best and most fully answered through the use of mixed research solutions (Johnson & Onwuegbuzie, 2004).

In a sequential explanatory design, the integration of both quantitative and qualitative results happens in the intermediate stage when the initial quantitative result informs the secondary qualitative data collection. One of the main advantages of this strategy is that it is easy to follow, and it allows for thorough analysis of quantitative results. The diagram in Figure 2 below summarises the two-phased sequential explanatory design.

**Figure 2 : Sequential Explanatory Design: Adapted from Creswell, (2017)**



### 3.3.2 Purpose of research and approach

The four common purposes of research design are exploratory, descriptive, explanatory and evaluative research (Saunders, Lewis & Thornhill, 2016). This research employs an explanatory research design. The aim of explanatory research is to understand the causal relationships between variables and tries to offer meaningful and truthful conclusion from an extensive amount of available information (Glicken, 2003).

The study is deductive in nature and uses both quantitative and qualitative approach. Qualitative research entails the non-numerical investigation and explanation of observations to discover the underlying meanings and relationship patterns. Qualitative data collection discloses information about a phenomenon from the interviewee's perspective, such actions and attitudes tend to reside in someone mind and are therefore not directly observable (Aaker,2010).

Quantitative research on the other hand entails the statistical manipulation and illustration of observations to describe and explain a phenomenon which the observations reveal. In quantitative research there is an emphasis on the measurement and analysis of fundamental relationships between variables (Zikmund, 2010). According to Neuman (2007) in quantitative research the central idea is variables and relationships. Neuman further highlights that quantitative research uses a deductive model in testing the variable relationships and supplying the evidence that allows the researcher to accept or reject a hypothesis that was initially stated.

### 3.3.3 Population and Sampling

According to Saunders et al. (2016), it is essential to clearly define the research population. According to Polit and Hungler (1999) a research population is the entirety of all the subjects that meet a set of conditions that consists of the total group of people that interests the researcher and whose results are generalizable. A sample is a subset of the population

chosen to partake in the study as a representation of the entire population (LoBiondo-Wood & Haber, 1998). This section discusses in detail the target population, sampling method, sampling frame and sample size.

The population for this study is mobile banking customers of the major retail banks operating in South Africa. The reason for choosing these banks is that they have been offering mobile banking services to their customers for a long period and they are the leading banks in South Africa who are aggressively promoting mobile banking services to their customers.

### **3.3.3.1 Sampling frame and Sample Size**

A sampling frame is defined by De Vaus (2004) as a finite part of a statistical population whose properties are studied to gain insight about the whole population. When dealing with people, as will be the case in this study, a sample can be defined as a set of respondents selected from a larger population for the survey. The sample frame was drawn from millennials between the ages of 18 to 39 years old who are customers of mobile banks in South Africa. According to Speziale and Carpenter (2007) sample size of a quantitative research is expected to be no less than 30. Reviewing previous literature on mobile banking/applications demonstrates that for most studies the sample size that ranges from 200-600 respondents is used (Mo Kwon, Bae & Blum, 2013; Van Deventer et al., 2017; Van Deventer, De Klerk & Bevan-Dye, 2017; Chawla & Joshi, 2017). The quantitative sample for this particular study consisted of more than 200 customers of mobile banks in South Africa (Western Cape and Gauteng province). The sample size for the qualitative semi-structured interviews consisted of 10 participants selected using purposeful sampling. These respondents were selected from those who participated in the quantitative study.

### **3.3.3.2 Sampling Technique**

Quantitative sampling technique - This study uses simple random sampling (Creswell, 2017) targeting 200 respondents for quantitative data collection. In this chosen sampling technique, everyone has an equal chance of selection and this sample is representative of the whole population therefore conclusions made from the sample is generalizable to the entire population. The reason for choosing this sampling technique is largely because it eliminates issues of bias and ensures that the sample represents the whole population.

Qualitative sampling technique - This study uses purposeful sampling for qualitative data collection targeting 10. This is a commonly used technique in qualitative studies for the identification and selection of cases that are information-rich to effectively make use of limited resources (Patton, 2002). Creswell and Plano Clark (2011) on the other hand state that purposeful sampling involves the identification and selection of individual that are particularly knowledgeable with a concept of interest. Therefore, a criterion that is used for interviewee selection in this study is people who have specifically engaged with mobile banking frequently.

### 3.3.4 Data collection

Data was collected using a survey and administered as an online survey questionnaire; and the second part of the data collection was via semi-structured interviews which were recorded and transcribed. The subsequent sections below present the research instrument development and data collection.

#### 3.3.4.1 Quantitative instrument design

A standard self-administered questionnaire/survey was established from a thorough literature review (see **Appendix C**). All the variables used in this study were informed by previous studies. A self-administered survey is advantageous because it permits respondents to complete the survey instrument by themselves thereby eliminating interviewer bias; it can reach enormous research populations and achieve a satisfactory response rate (Burns & Bush, 2012; Haydamand & Mostert, 2013).

The questionnaire involved the use of close-ended questions that moulded the items measured for each dimension/construct in the conceptual model. The questionnaire responses options are based on a five-point likert scale that ranges from strongly disagree to strongly agree. A likert scale is a commonly used rating scale that allows the research participants to choose their level of agreement or disagreement with a number of statements about the stimulus items; the response ranges from strongly disagree to strongly agree (Malhotra, 2007). Effort to increase the response rate was made (Rowley, 2014). The rationale for choice of a 5-point likert scale is mainly because previous research on likert scales shows that the 5-point likert scale are quicker to complete and do not impact the factorial validity.

The first section of the questionnaire was intended to collect demographic data, the questions collected data about the participants age, gender, occupation, education level,

race, name of bank they use and frequency of usage of mobile banking. The ethnic orientation analysis is of interest to the researcher because of the well-known injustices of the past that took place in South Africa, which resulted in a substantial economic divide. Therefore, because of these historical injustices there may be differences in how different races experience mobile banking. A study by Wang and Sun (2010) showed that ethnic factors had an impact on behavioural responses. In this study the collection of race information will help to understand how the difference in races will impact the mobile banking experience. The second part of the questionnaire was intended to collect data of the conceptual model constructs; these consisted of three items each for the construct of convenience, ease of use, customization, enjoyment, brand/trust, functional quality, satisfaction, perceived risk, social influence, personal innovativeness and loyalty. The final part of the questionnaire measured customer experience and loyalty with open-ended questions.

For reliability and validity purposes, pre-testing and pilot studies of the survey was conducted with a small part of the population (Bhattacharjee, 2012). The questionnaire was pretested amongst 20 participants in order to examine the scales reliability, the phrasing and order of the questions, and the easiness of which the respondents comprehend the meaning of the questions. As a result, some questions were rephrased while some likert scale questions were rephrased. After pilot testing using four masters students who have been making use of mobile banking the questionnaire was distributed to the main sample.

#### **3.3.4.2 Qualitative instrument design**

The same instrument that was used to conduct the quantitative study (see **Appendix C**) was used as a guide to conduct the qualitative semi-structured interviews. The use of interviews affords the interviewee an opportunity to freely express their feeling about the question posed and provide information that is relevant that would have been difficult to obtain from just using questionnaires. The instrument sought questions on customer perceptions of convenience, ease of use, customisation, enjoyment, brand trust, functional quality, satisfaction, perceived risk, social influence, personal innovativeness and loyalty. For validity purposes, the semi-structured interview questionnaire was pretested with four master's students who have been making use of mobile banking for the past 5 years to make sure that both the content and criteria related validity of the interview instrument is established. The questions that were difficult to understand were reworded and clearly defined in a manner that the respondents will easily comprehend.

### 3.4 Data analysis techniques

Quantitative data analysis - Data was captured and analysed via a statistical software package known as SPSS. The following statistical data analyses were performed:

#### 3.4.1 Reliability Testing

Reliability data analysis was done using Cronbach's Alpha. Reliability estimated at 0.7 and higher is acceptable (Maree, 2007; Hair, Black, Babin & Anderson, 2009). Before commencing the data analysis, the study started by testing the research instrument for reliability. Reliability is the degree to which the performance of a particular test, procedure or tool, will produce identical results in different circumstances (Robila, 2006). A research instrument is deemed reliable if its reliability lies above 0.7, while a value below 0.7 means the instrument is not reliable (Pallant, 2013). Table 2 below presents the results of the Cronbach's Alpha extracted from SPSS, and the results show that, the instrument for this study was reliable as its Cronbach's Alpha based on standardized items was found to be 0.888 for 43 questions a value which is above the minimum threshold suggested by (Pallant, 2013).

**Table 2:** Research Instrument Reliability Statistics

Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
.874	.888	43

#### 3.4.2 Descriptive statistics

Descriptive statistical analysis to measure the mean, standard deviation, variance, skewness and frequency of each of the variables presented in the conceptual model was performed. This is done to give a basic picture of the results. The discussion of these results will be presented in the next chapter.

#### 3.4.3 Factor analysis

Factor analysis was done to prove the relationship patterns that exist among the independent variable of customer experience and the dependent variable of loyalty. Factor analysis was used as a validity criterion and in the identification of the strongest essential

factor of the dependent factor of loyalty. All the variables that show factor loadings of more than 0.4 demonstrate satisfactory level of correlation between the variables as per the conceptual model and their corresponding factors. According to Bandalos and Finney (2018) factor analysis is a method of modelling the co-variation among a set of observed variables as a function of one or more latent constructs. Factor analysis assists researchers in identifying the nature of the latent constructs underlying the variables of interest (Bandalos & Finney, 2018). According to Mukherjee, Sinha and Chattopadhyay (2018) factor analysis attempts to identify underlying variables, or factors, that explain the pattern of correlations within a set of observed variables or construct items.

One common objective of factor analysis is to provide a relatively small number of factors constructs that will serve as satisfactory substitutes for a much larger number of variables (Comrey & Lee, 2013; Mukherjee, Sinha & Chattopadhyay, 2018). This means that at the end of factor analysis the researcher will be left with variables that explain most of the variance while those that explain the least variance are discarded. The study used the principal components analysis (PCA) method to extract factors. The goal of PCA is to find a sequence of orthogonal factors that represent the directions of the largest variance (Liu, Zhang, Tao, Wang & Lu, 2016). PCA was used because it has the capability to form uncorrelated linear combinations of the observed variables; it is also used to obtain the initial factor solution and can be used when a correlation matrix is singular.

A direct Oblimin method was used as a factor rotation method because during theory development literature suggested some theoretical grounds that suppose that the factors in this study are related or correlated. The study opted to display the coefficients sorted by size and suppress coefficients with absolute values that are less than an absolute value of 0.4. The output extracted and explained in this study included; correlation matrix, Kaiser-Meyer-Olkin and Bartlett's test, Factor Extraction, Scree plot and Rotated Pattern Matrix.

#### **3.4.3.1 Correlation matrix**

The first output to be interpreted was the correlation matrix. Due to many factors considered in this study, the questionnaire had 36 total questions (factors), therefore the correlation matrix tables extracted were too large to display them, therefore the study opted to only observe the correlations and mention the determinant statistic. The correlation matrix showed that, the highest correlation coefficient was 0.732 which was found between Convenience2 and Convenience3. The rest of the coefficients were below 0.732. Looking at the significant levels, majority of the relationships were significant at either level 0.01 or 0.05.

The determinant of the correlation matrix was found to be 7.474 E -009 (which is 0.000000007474) which is smaller than the required value of 0.00001. This means that there might be a problem with multicollinearity with the data used in this study.

### 3.4.3.2 Kaiser-Meyer-Olkin and Bartlett's test

The second output from the PCA factor analysis was the Kaiser-Meyer-Olkin and Bartlett's test. The KMO statistic varies between 0 and 1. For factor analysis to be appropriate the value of KMO should be closer to 1 than it is to 0. A value close to 1 indicates that patterns of correlations are relatively compact and so factor analysis should yield distinct and reliable factors. Kaiser recommends accepting values greater than 0.5 (Kaiser, 1974). Further it is understood values between 0.5 and 0.7 are considered as mediocre, values between 0.7 and 0.8 as good, values between 0.8 and 0.9 are good and values greater than 0.9 are superb (Kaiser, 1974; Hutcheson & Sofroniou, 1999).

For this data the value is 0.899 as shown in Table 3, this value falls in the range of superb, so we should be confident that factor analysis is appropriate for this data.

**Table 3: KMO and Bartlett's Test**

Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.899
Bartlett's Test of Sphericity	Approx. Chi-Square	6178.005
	df	630
	Sig.	.000

Table 3 also shows that Bartlett's Test is 0.000 a value which is less than 0.05. This again means that factor analysis is appropriate for this study.

### 3.4.3.3 Factor Extraction

The third output from SPSS is the total variance explained output. This output lists the Eigenvalues associated with each linear component (factor) before extraction, after extraction and after rotation. Before extraction SPSS identified 36 linear components within the data set. The Eigenvalues associated with each factor represent the variance explained by that linear component. Table 4 also indicates the Eigenvalues in terms of the percentage of variance explained. This means that factor 1 explains 29.208% of the total variance. The cumulative percentage column indicates the combined percentage of variance explained by the current factor and the rest of the factors before it. Table 4 shows that factors 1 to 8

explain a combined 64.102% of the total variance. The rest of the factors will collectively explain the 35.9% variance; individually these factors insignificantly explain the variance. Hence, we will settle for an 8 factor (component) study.

**Table 4: Total Variance Explained**

Component	Initial Eigenvalues			Extraction Sums of Squared Loadings			Rotation Sums of Squared Loadings <sup>a</sup>
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %	Total
1	10.515	29.208	29.208	10.515	29.208	29.208	8.038
2	3.087	8.576	37.784	3.087	8.576	37.784	3.014
3	2.315	6.432	44.216	2.315	6.432	44.216	4.547
4	1.757	4.879	49.095	1.757	4.879	49.095	3.372
5	1.588	4.410	53.505	1.588	4.410	53.505	4.400
6	1.394	3.871	57.376	1.394	3.871	57.376	2.542
7	1.313	3.646	61.022	1.313	3.646	61.022	2.919
8	1.109	3.080	64.102	1.109	3.080	64.102	4.419
9	.989	2.748	66.850				
10	.908	2.522	69.371				
11	.830	2.305	71.676				
12	.803	2.231	73.907				
13	.706	1.962	75.868				
14	.673	1.869	77.737				
15	.610	1.695	79.432				
16	.563	1.564	80.997				
17	.530	1.473	82.470				
18	.509	1.413	83.883				
19	.483	1.342	85.225				
20	.459	1.274	86.499				
21	.445	1.235	87.734				
22	.424	1.178	88.912				
23	.391	1.087	89.999				
24	.364	1.012	91.012				
25	.358	.994	92.006				
26	.342	.949	92.955				
27	.328	.911	93.866				
28	.311	.863	94.729				
29	.284	.790	95.519				
30	.282	.782	96.301				
31	.263	.730	97.031				
32	.253	.704	97.735				
33	.232	.646	98.381				
34	.220	.611	98.991				
35	.183	.509	99.500				
36	.180	.500	100.000				

Extraction Method: Principal Component Analysis.

a. When components are correlated, sums of squared loadings cannot be added to obtain a total variance.

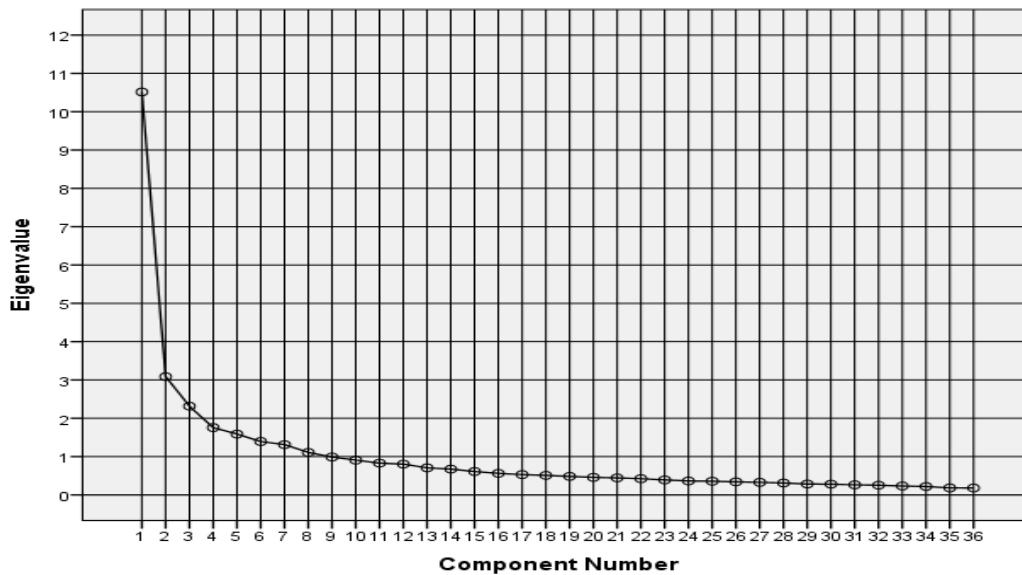
SPSS also extracts all factors with Eigenvalues greater than 1 shown by the middle column '*Extraction Sums of Squared Loadings*' and Table 4 shows that eight factors have their Eigenvalues values greater than 1. Their Eigenvalues are the same with the eigenvalues shown in the column '*Initial Eigenvalues*'. After rotation the 8 factors explain relatively almost

equal variance. Factor 1 explains 8.038% while factor 2 explains 3.014% of the variance, the percentage differences are now closer to each other due to the optimisation done by rotation.

### 3.4.3.4 Scree plot

The scree plot in Figure 3 shows the plot of Eigenvalues against the components. The results show that 8 factors have their values above 1, while the rest are below 1. This means that the factors to be retained for further analysis are component 1 to 8 which will be identified by subsequent rotated pattern matrix output.

**Figure 3** : Scree plot of Eigenvalues



### 3.4.3.5 Rotated Pattern Matrix

The last and most important output to be explained is the rotated pattern matrix table shown in Table 5. The rotated pattern matrix provides the factor loadings for each variable onto each factor, which will facilitate on drawing a summary of the factors to consider or eliminate for future analysis. A minimum factor loading equal to or greater than 0.4 criteria was used to purify the measurement items (Hair et al., 2008; Clossey et al., 2019). Further according to Ford, MacCallum and Tait (1986) all item loadings greater than 0.4 represent a level commonly considered significant. It is important to note that, the study excluded from the output the factors that had a factor loading less than 0.4, and this explains the gaps in the table, also the output has been sorted or arranged according to the size of the factor

loadings. It is important to note that, 12 factors load over component 1, with 6 of them loading highly with a factor loading above 0.60. Component 2 had 3 factors loading on it with all three highly loading with a value above 0.7. Component 3 had 4 factors loading on it of which 3 had values ranging from 0.767 and 0.716. Component 4 had 3 factors loading on it with all factors having factor loadings above 0.6. Component 5 had 4 factors loading over it of which all of them had negative factor loadings. Component 6, component 7 and component 8 had three factors each loading over them. Component 6 had one negative factor loading; component 7 had all negative factor loadings while component 8 had all positive factor loadings. The general rule of thumb is that we retain components that have at least 3 factors loading over them. Table 5 shows that all 8 components to be retained and that some questions will be classified according to those components instead of being independent.

**Table 5: Rotated Pattern Matrix<sup>a</sup>**

	Component							
	1	2	3	4	5	6	7	8
FunctionalQuality3	.758							
CustomerExperience2	.747							
FunctionalQuality1	.746							
Satisfaction1	.694							
Satisfaction2	.691							
FunctionalQuality2	.662							
CustomerExperience3	.593							
Trust3	.580							
CustomerExperience1	.527							
Satisfaction3	.489							
Trust2	.472							
Enjoyment3	.414							
Trust1								
PersonallInnovativeness3		.915						
PersonallInnovativeness2		.838						
PersonallInnovativeness1		.775						
Convenience1			.767					
Convenience2			.721					
Convenience3			.716					
Enjoyment1			.459					
Loyalty1				.828				
Loyalty3				.817				
Loyalty2				.773				
Customization3					-.722			
Customization1					-.653			
Customization2					-.646			
Enjoyment2					-.491			
PerceivedRisk1						.827		
PerceivedRisk3						.799		
PerceivedRisk2						-.455		
SocialInfluence3							-.745	
SocialInfluence1							-.716	
SocialInfluence2							-.508	
EaseOfUse1								.801
EaseOfUse3								.692

EaseOfUse2								.679
Extraction Method: Principal Component Analysis.								
Rotation Method: Oblimin with Kaiser Normalization.								
a. Rotation converged in 18 iterations.								

### 3.4.3.6 Summary on PCA

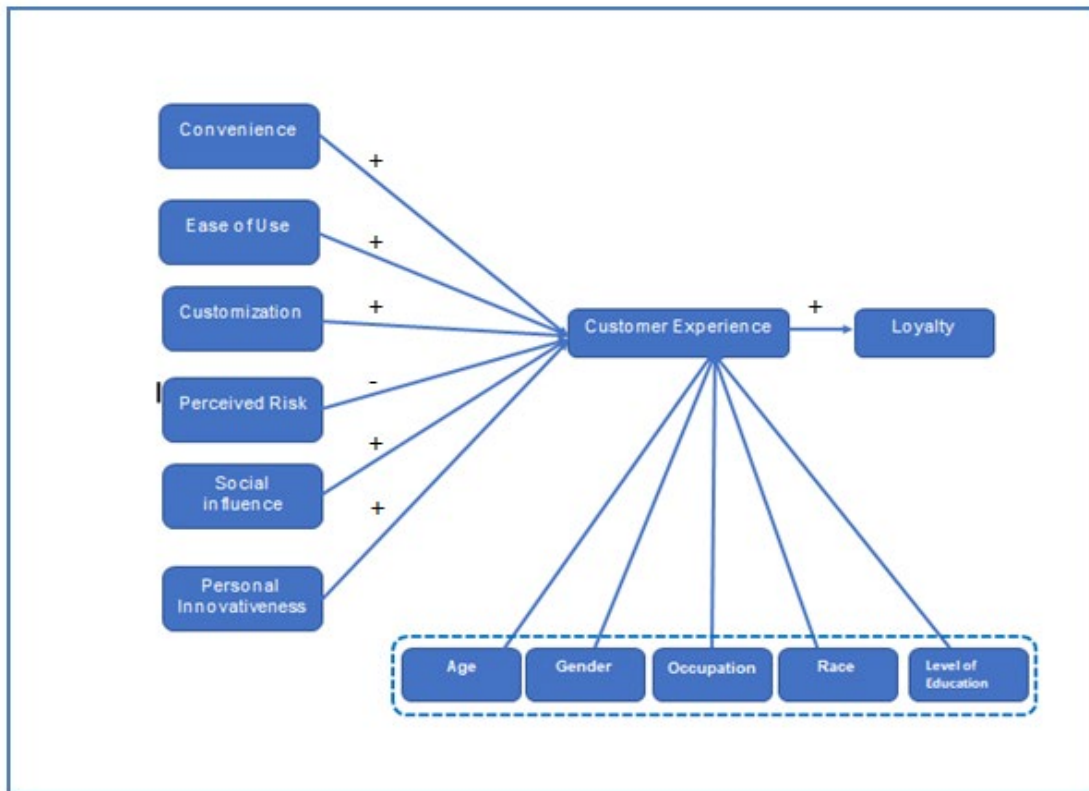
Lastly, the study had to go through all the questions that loaded on each component and find the common theme in those questions. Below is a table summarising factors that belong to each component. Our new conceptual framework will now be based on the new themes. The discarded construct item out of all the 36 questions (construct items) was Trust1 only as its factor loading was less than 0.4 and was therefore not associated with any component. Table 6 below summarises the new themes obtained after PCA and the question items that define the new theme.

**Table 6:** New themes after elimination and factor grouping

Component	Questions	New Theme
Component 1	FunctionalQuality3, CustomerExperience2, FunctionalQuality1, Satisfaction1, Satisfaction2, FunctionalQuality2, CustomerExperience3, Trust3, CustomerExperience1, Satisfaction3, Trust2 and Enjoyment3	Customer Experience
Component 2	PersonallInnovativeness3, PersonallInnovativeness2 and PersonallInnovativeness1	Personal Innovativeness
Component 3	Convinience1, Convinience2, Convinience3 and Enjoyment1	Convenience
Component 4	Loyalty2, Loyalty1 and Loyalty3	Loyalty
Component 5	Customization3, Customization1, Customization2 and Enjoyment2	Customization
Component 6	PerceivedRisk1, PerceivedRisk3 and PerceivedRisk2	Perceived Risk
Component 7	SocialInfluence3, SocialInfluence1, SocialInfluence2	Social Influence
Component 8	EaseOfUse1, EaseOfUse3 and EaseOfUse2	Ease of Use

Basing on the new themes deduced and summarised in Table 6 above, the below Figure 4 shows the new or refined framework after PCA. The framework shows that instead of a total of 17 constructs, the framework is now left with 13 constructs. Constructs such as Functional Quality, Satisfaction, Trust and Enjoyment were grouped into other themes.

**Figure 4** : New conceptual model after PCA



The hypothesis that this study will carry on investigating as deduced in Figure 4 are summarised in Table 7 below. Henceforth, these are the hypothesis that will drive this study.

**Table 7:** Summary of new hypothesis

Hypothesis	Hypothesis Description
H1	<i>Convenience of mobile banking applications positively influences customer experience.</i>
H2	<i>Ease of use (usability) of mobile banking applications positively influences customer experience</i>
H3	<i>Customization of mobile banking applications positively influences customer experience</i>
H4	<i>Perceived risk of mobile banking applications has a negative influence on customer experience.</i>
H5	<i>Social influence has a positive influence on customer experience in mobile banking</i>
H6	<i>Personal innovativeness has a positive influence on the customer experience in the use of mobile banking.</i>
H7	<i>Customer's experience of mobile banking applications positively influences customer loyalty</i>
H8a	<i>Differences in age will influence how customers experience mobile banking</i>
H8b	<i>Differences in gender amongst millennials will influence how customers experience mobile banking</i>
H8c	<i>Differences in occupation amongst millennials will influence how customers experience mobile banking</i>

H8d	<i>Differences in race amongst millennials will influence how customers experience mobile banking</i>
H8e	<i>Differences in education level amongst millennials will influence how customers experience mobile banking</i>

### 3.4.4 Correlation analysis

Correlation analysis to check the intensity of association between the variables presented in the conceptual model of this study was also performed. The results of correlation analysis will be discussed in the next chapter.

### 3.4.5 Regression analysis

Hypothesis testing was performed using regression analyses for either accepting or rejecting the hypotheses. Both independent variables of customer experience and dependent variable of loyalty are grouped and tabulated into SPSS for hypothesis testing. The results of regression analysis will be displayed and discussed in the following chapter.

### 3.4.6 Qualitative data analysis

All the semi-structured interviews were transcribed and analysed using Nvivo. The data from the open-ended questions was analysed via content analysis to find any different themes from which new knowledge is found (Miles et al., 2014). Additionally, due to the open-ended nature of the questions in the interview guide, this research used thematic analysis on the data collected for the measured items. The main use of thematic analysis in this research is to find, examine and report themes in the data. To do this method correctly and satisfactorily, steps and guidelines recommended by Braun and Clarke (2006) were used. These steps involve familiarisation with data, identification of the data via code generation, looking for themes from the coding, performing a review on the themes found, definition and naming of the themes found and generating a report of the themes found.

### 3.5 Research Timeframe

The research timeframe used for this study was cross-sectional. According to Sekaran (2003), a cross sectional time frame involves the collection of data in a period which is limited to months; whereas a longitudinal timeframe involves the collection of data over longer time periods which can be years. A longitudinal study will not be feasible due to the timing constraints of this study. Cross sectional study will be best suited due to the limited time required time to complete a master's program. Therefore, the data was gathered within this limited time interval.

### 3.6 Ethics and Confidentiality

Ethical considerations in this study are very important, especially in the qualitative aspect of the research where human subjects are involved (Eysenbach & Till, 2011). The entire study conforms to the three elements of ethical considerations namely: anonymity, autonomy and confidentiality. Additionally, as recommended by numerous previous studies this research will comply with the ethical issues of obtaining a voluntary and informed agreement, confidentiality and anonymity, objectivity and impartiality including risks and harms (Gillespie, 1995).

The main ethical consideration of this research is voluntary and informed agreement; therefore, the respondents in this study were informed in detail about the context of this study. A consent letter from the researcher's institution of learning was sought and availed to the participants of the study. The respondents were guaranteed that both their responses and interviews will be kept confidential and will only be used for purposes of this study and any information given will remain anonymous. Research data was stored securely on a laptop; an external hard drive was used for backing up the important research data in case of loss/theft of laptop. This external hard drive provides security through both encryption and simple detachment of the drive. Identifying data (for example email address) was stored on a securely encrypted or password protected USB storage device. The researcher placed a lot of effort in making sure that harm and risks to the research respondents were eliminated. Ethics approval for this study was sought and obtained from the ethics committee at the University of Cape Town. The approval of this research was proof that the research design meets the main ethical considerations that might affect reliability and integrity of the research study as perceived by the University.

### 3.7 Summary of the Chapter

This chapter discussed the methodology that was used in the collections and analysis of data throughout the entire research study. The following chapter presents the data analysis and findings of this study. Table 8 below outlines a summary of the research methodology followed.

**Table 8 : Research Methodology Summary**

<b>METHODOLOGY</b>	<b>APPROACH</b>
<b>Philosophy</b>	Pragmatism
<b>Research strategy</b>	Quantitative and Qualitative (Survey & Interview)
<b>Research purpose</b>	Explanatory
<b>Research approach</b>	Deductive
<b>Target population</b>	South African Millennial Cohort (Mobile banking users)
<b>Type of research</b>	Mixed Methods Research (MMR)
<b>Data collection techniques</b>	Quantitative Data collection: – Survey questionnaire (Closed-ended questions) Qualitative data collection: – semi-structured interviews (Open-ended questions)
<b>Data Analysis</b>	For quantitative analysis – MS Excel 2010 and SPSS software packages was used for statistical analysis. For qualitative analysis – Nvivo version 12 software packages was used. Coding and Thematic analysis.
<b>Timeframe</b>	Cross-sectional

## CHAPTER 4: RESEARCH FINDINGS

### 4.1 Introduction

The aim of this chapter is to present and discuss the results. This section is structured as follows: Section 4.2 presents the frequency analysis of the demographic variables. Section 4.3 presents the analysis of the quantitative findings. This includes section 4.3.1 which presents the descriptive statistics which explain the sample composition. This is followed by Section 4.3.2 which presents correlation analysis which was used to analyse the relationship between constructs. Section 4.3.3 regression analysis was performed to test for causality. Section 4.3.4 presents results of hypothesis testing. Section 4.4 presents the analysis of the qualitative data that was collected through open-ended questions. Section 4.5 presents the analysis of the qualitative data that was collected through interviews. Section 4.6 presents a summary of the chapter.

### 4.2 Demographic findings

The study sought to understand how customer's experience of mobile banking influences their loyalty towards the bank. Respondents for the study were millennials between the ages of 18 to 39 years old who are customers of mobile banks in South Africa. There were, 412 attempts at the survey where observed which was above the 200 survey target identified in chapter 3. With a completion rate of 83%, 344 responses were recorded as completed responses in that all the questions in the survey were completed; and 60% of them identified themselves as female, while 39% identified as male. The remaining respondents were not willing to indicate their sexual orientation. When it came to race, those who identified as black had the highest representation of 41%. This was followed by respondents who identified as white (30%). Those who identified as coloured were 17%, Indian at 8% and those who prefer not to be identified at 4%.

The majority (48%) of respondents were in the age group 18-23. This was followed by the 24-29 age group which had a representation of 22%; and the age group 30-35 years (21%). The least represented age group was 36-39 with a total 9% of the total sample. It is important to note that, these statistics show a decreasing trend in terms of representation from the youngest to the oldest. This result might mean that, the young people are willing to participate in research studies than their older counterparts, or the young ones use mobile banking apps more than their older counterparts. With regards to the education level, the results show that the least (9%) qualification was a diploma or college graduate. The rest of

the qualifications of high school or lower, bachelor's degree and postgraduate or higher had an almost equal representation of 28%, 31% and 32% respectively. When it came to occupation, majority were students (58%) and those employed were 34%. Unemployed participants and business owners had the least representation of 5% and 3% respectively.

Participants were asked to indicate which bank's mobile banking app they use. The results show that Bank-C had the highest number of users at 34%. This was followed by Bank-D at 22%. Bank-E, Bank-B, and Bank-A had an almost equal representation of 16%, 13% and 11% respectively. A few of the respondents (4%) did not have their banking app as part of the options hence they had to specify. Further, most of the respondents (53%) used the mobile app on weekly basis; this was followed by 36% who indicated that they use their mobile banking app daily. The rest of the participants (11%) rarely use the banking app. These results are illustrated in Table 9 below.

**Table 9:** Frequency of demographic factors

Construct	Item	Frequency	Percent	Cumulative Percent
Gender	Male	133	38.7	38.7
	Female	206	59.9	98.5
	Prefer not to say	5	1.5	100.0
Age	18-23	165	48.0	48.0
	24-29	75	21.8	69.8
	30-35	72	20.9	90.7
	36-39	32	9.3	100.0
Education level	High school/lower	96	27.9	27.9
	Diploma/College graduate	30	8.7	36.6
	Bachelor's degree	108	31.4	68.0
	Postgraduate/Higher	110	32.0	100.0
Bank	Bank A	38	11.0	11.0
	Bank B	43	12.5	23.5
	Bank C	118	34.3	57.8
	Bank D	74	21.5	79.4
	Bank E	54	15.7	95.1
	Other. Please specify	17	4.9	100.0
Mobile Frequency Use	Daily	125	36.3	36.3
	Weekly	183	53.2	89.5
	Monthly	31	9.0	98.5
	A few times a year	1	.3	98.8
	Less often	4	1.2	100.0
Race	White	103	29.9	29.9
	Black	140	40.7	70.6
	Coloured	60	17.4	88.1
	Indian/Asian	29	8.4	96.5
	Prefer not to say	12	3.5	100.0
Occupation	Unemployed	16	4.7	4.7
	Employed	119	34.6	39.2
	Business Owner	9	2.6	41.9
	Student	200	58.1	100.0

## 4.3 Quantitative findings

### 4.3.1 Descriptive statistics

Descriptive statistics according to Pallant (2013) facilitates the understanding of how data is distributed by using the key descriptive statistics of: minimum, maximum, mean and skewness and pictorial view of the data using a histogram. The descriptive statistics for this study are presented in Table 10. When it comes to the mean, all factors except for perceived risk and personal innovativeness had a mean value of 4, implying that most respondents agreed that, all factors influenced mobile banking except for perceived risk and personal Innovativeness. Specifically, the most significant factors perceived to influence the use of mobile banking apps were convenience, ease of use and customer experience – the factor with the highest mean values; followed by social influence and customisation. Respondents were neutral (mean value of 3) with regards to perceived risk. They however, slightly disagreed that personal innovativeness is an influencing factor of mobile application adoption and usage. The implications of these findings are that ease of use, convenience, customization, customer experience and loyalty, participants favour use of mobile banking.

**Table 10:** Descriptive Statistics of factors (Items = 344)

	N	Minimum	Maximum	Mean	Skewness	
	Statistic	Statistic	Statistic	Statistic	Statistic	Std. Error
EaseOfUse	344	1.00	5.00	4.3246	-1.357	.131
PerceivedRisk	344	1.00	5.00	3.0640	.411	.131
SocialInfluence	344	1.00	5.00	3.5649	.004	.131
PersonallInnovativeness	344	1.00	5.00	2.8934	.212	.131
Convenience	344	1.00	5.00	4.3452	-2.077	.131
Customization	344	1.00	5.00	3.4571	-.134	.131
CustomerExperience	344	1.00	5.00	3.9448	-.623	.131
Loyalty	344	1.00	5.00	3.5921	-.146	.131
Valid N (listwise)	344					

### 4.3.2 Correlation analysis

Pearson correlation was used to analyse the relationships between constructs. SPSS was used to extract the Pearson correlation Matrix and the results are shown in Table 11. A correlation coefficient is a number which indicates the degree of relation between two variables and it lies between -1.00 and +1.00 (Pallant, 2013). The direction of a relationship is depicted by the plus or minus sign whereby a negative value indicates an inverse relationship i.e. as one construct increases the other construct decrease vice versa is true,

while on the other hand a positive value indicates a direct relation between both variables meaning as one construct increases the other construct also increases. A correlation value of 0 means that there is no correlation between the two variables and a correlation value of 1 means there is a perfect relationship between the two constructs. SPSS provides correlations at 0.01 and 0.05 significant levels. A correlation at 0.01 is shown by two asterisks appended to the front of the correlation figure and it means that the relationship is highly correlated while a correlation at 0.05 is shown by a single asterisk in front of the correlation figure and it means the relationship is moderately correlated. Table 11 shows the correlation results as extracted from SPSS.

**Table 11:** Pearson correlation matrix between constructs

Construct	1	2	3	4	5	6	7	8	9	10	11	12	13
1 Age	1												
2 Gender	.209**	1											
3 Education	.439**	.046	1										
4 Race	-.029	.102	-.033	1									
5 Occupation	.609**	.104	.248**	.044	1								
6 Ease of Use	.117*	.013	.131*	.079	-.068	1							
7 Perceived Risk	.074	.082	-.066	.044	-.057	.009	1						
8 Social Influence	.034	.110*	-.038	.123*	-.010	.159**	.178**	1					
9 Personal Innovativeness	.137*	.095	-.079	.056	.152**	.122*	.202**	.327**	1				
10 Convenience	-.016	.078	.041	.027	.026	.592**	-.083	.210**	.063	1			
11 Customization	.165**	.029	-.008	.014	.148**	.405**	.124*	.316**	.277**	.468**	1		
12 Customer Experience	.018	.100	-.051	.013	-.005	.439**	-.010	.251**	.105	.533**	.499**	1	
13 Loyalty	.035	.048	.032	.090	-.030	.191**	.070	.188**	.047	.196**	.280**	.343**	1
**. Correlation is significant at the 0.01 level (2-tailed).													
*. Correlation is significant at the 0.05 level (2-tailed).													

The results indicate that the relationship between the dependent variable (*Loyalty*) and *Customer Experience* was found to be 0.343 a significant correlation at level 0.01. This implies that *customer experience* is highly correlated to *loyalty*. When it comes to the relationship between the mediator variable *Customer Experience* and the rest of the independent constructs, Table 11 shows that all relationships except with all demographic variables, *Perceived Risk* and *Personal Innovativeness* were found significant at level 0.01.

The relationship between Perceived Risk, Customer Experience and between Customer Experience and Personal Innovativeness were found insignificant.

Of the hypothesised relationships, relationship between *Convenience* and the mediator variable *Customer Experience* had the highest correlation of all with a value of 0.533 at level 0.01. This implies that the respondents associate the convenience of mobile banking apps with customer experience. The next high correlation value was between Customization and the mediator variable Customer Experience at a value of 0.499. The third highest correlation existed between the mediator variable and *Ease of use* that had a Pearson correlation value of 0.439 at level 0.01. Pallant (2013) identifies moderate relationships between constructs as those with Pearson correlation of above 0.3 and below 0.7. In this study, moderate relationships were found to be between the following constructs: *convenience* and *customer experience*; between *customization* and *customer experience* and finally, between *ease of use* and *customer experience*. The rest of the hypothesised relationships were considered weak as they had Pearson correlation values below 0.3. In sum, the above results partially confirm most of the research hypotheses earlier developed, but this requires objective tests of significance using regression analyses presented in the next section.

### 4.3.3 Regression analysis

Correlation matrix is enough to investigate the relationship between two constructs only, but when one desires to investigate a collective influence of various factors towards a dependent variable correlation is not enough but statistical analysis methods such as Chi square and linear regression should be employed (Field, 2009; Cavana, Delahaye & Sekara, 2001). This study used linear regression from SPSS. Because linear regression works with one dependent variable, the study conducted 2 separate regression models; one between the mediator variable *customer experience* and *loyalty*, and the rest of the independent variables and *customer experience*. The result of this analysis follows.

#### 4.3.3.1 Regression of customer experience and loyalty

The results of the regression model between *customer experience* and *loyalty* with *loyalty* as the dependent variable shows that only 11.8% variance in the dependent variable can be explained by *customer experience* as shown by R Square value of 0.118. Adjusted R Square

of 11.5% can be used to eliminate the bias. The sig. F change statistic shows that this R-Square is significant as its value is below 0.05. This means that *customer experience* explains 11.8% of the customer *loyalty* to a certain bank. These results are presented in Table 12.

**Table 12** : Model Summary of customer experience and loyalty

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics				
					R Square Change	F Change	df1	df2	Sig. F Change
1	.343 <sup>a</sup>	.118	.115	.75412	.118	45.583	1	342	.000
a. Predictors: (Constant), CustomerExperience									

When it comes to the relationship between *customer experience* and *loyalty*, Table 13 below shows that this relationship is significant as the Sig statistic is less than 0.05 (Pallant, 2013; Field, 2000). The unstandardized coefficients column shows that, the b statistics for *customer experience* is 0.408. This value means that 0.408 is the slope of the line. That is, in a straight-line chart if you pick any point on the fit line, then you move one unit to the right on the X-axis, then move 0.408 units upward you will intersect with the regression line (line of best fit).

**Table 13** : Regression Coefficients between customer experience and loyalty

Model		Unstandardized Coefficients		Standardized Coefficients	T	Sig.
		B	Std. Error	Beta		
1	(Constant)	1.984	.242		8.209	.000
	CustomerExperience	.408	.060	.343	6.752	.000
a. Dependent Variable: Loyalty						

#### 4.3.3.2 Regression of customer experience and independent variables

The results of the regression model between customer experience and the rest of the independent variables show that the independent variables explain 39.4% of customer experience as the R Square value was found to be 0.394. The sig. F change statistic shows that this R-Square is significant as its value is below 0.05. These results are presented in Table 14.

**Table 14:** Model Summary of customer experience and independent variables

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics				
					R Square Change	F Change	df1	df2	Sig. F Change
1	.627 <sup>a</sup>	.394	.374	.53371	.394	19.591	11	332	.000

a. Predictors: (Constant), Customization, Education, Race, Gender, PerceivedRisk, Occupation, PersonallInnovativeness, EaseOfUse, SocialInfluence, Convenience, Age

When it comes to the coefficients between the *customer experience* and the independent variables, Table 15 below shows that *ease of use*, *convenience* and *customization* are the only variables that significantly contribute or predict *customer experience* as their Sig statistic was less than 0.05. The rest of the variables had a sig statistic that is above 0.05 therefore they were deemed insignificant.

The unstandardized coefficients column shows that, the b statistics for the two significant variables (*ease of use*, *convenience* and *customization*) was 0.150, 0.301 and 0.252. These values mean that 0.150, 0.301 and 0.252 are the slopes for each of the variables. That is, in a straight-line chart if you pick any point on the fit line, then you move one unit to the right on the x-axis, then move 0.150 steps up for ease of use, 0.301 steps up for *convenience* and 0.252 steps up for customization you will intersect with the regression line (line of best fit).

**Table 15 :** Regression coefficients between customer experience and the independent variables

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	.935	.336		2.781	.006
	Age	.018	.039	.028	.469	.640
	Gender	.092	.059	.070	1.565	.119
	Education	-.048	.028	-.086	-1.752	.081
	Race	-.004	.028	-.006	-.146	.884
	Occupation	.015	.035	.024	.434	.665
	EaseOfUse	.150	.055	.150	2.729	.007
	PerceivedRisk	-.035	.050	-.032	-.708	.480
	SocialInfluence	.073	.044	.080	1.656	.099
	PersonallInnovativeness	-.022	.034	-.031	-.652	.515
	Convenience	.301	.060	.289	5.008	.000
	Customization	.252	.046	.290	5.468	.000

a. Dependent Variable: CustomerExperience

All in all, the two regression models above explain that, loyalty is directly predicted by *customer experience* and indirectly predicted (through *customer experience*) by *ease of use*, *convenience* and *customization*.

#### 4.3.4 Hypothesis testing

Using the sig statistics from regression analysis, the study deduced which variables were accepted and rejected. Table 16 shows that 4 out for the 7 hypothesis deduced by Principal Components Analysis were accepted as their sig values were below 0.05. The supported hypotheses were Hypothesis 1-3, and Hypothesis 7. The rest of the hypothesis: Hypothesis 4-6 and Hypothesis 8 were rejected. This means that *convenience*, *ease of use* and *customization* of mobile banking applications has a significant influence on *customer experience*, while customer experience of mobile banking has a significant influence on customer loyalty. Therefore, if mobile banking provides increased convenience to the customer, is easy to use for the customers or the customers get customized features, then this has a positive influence on the customer experience of millennial customers, resulting in the customers becoming more loyal to their bank.

**Table 16:** Hypothesis testing

Hypothesis	Construct	Sig. Value	Resolution
Hypothesis 1	Convenience → Customer Experience	p < 0.000	Accepted
Hypothesis 2	Ease of use → Customer Experience	p < 0.007	Accepted
Hypothesis 3	Customization → Customer Experience	p < 0.000	Accepted
Hypothesis 4	Perceived Risk → Customer Experience	p > 0.480	Rejected
Hypothesis 5	Social Influence → Customer Experience	p > 0.099	Rejected
Hypothesis 6	Personal Innovativeness → Customer Experience	p > 0.515	Rejected
Hypothesis 7	Customer experience → Loyalty	p < 0.000	Accepted
Hypothesis 8a	Age → Customer Experience	p < 0.640	Rejected
Hypothesis 8b	Gender → Customer Experience	p < 0.119	Rejected
Hypothesis 8c	Occupation → Customer Experience	p < 0.665	Rejected
Hypothesis 8d	Race → Customer Experience	p < 0.884	Rejected
Hypothesis 8e	Education level → Customer Experience	p < 0.081	Rejected

To conclude, the findings presented in Table 16 will be analysed and discussed in light of the literature review that was presented in chapter 2. This analysis will be presented in chapter 5 to follow.

#### 4.4 Qualitative findings of open-ended questions

This section presents the findings from the analysis of the open-ended questions, as shown in Appendix C. The purpose was to garner information about the millennials perceptions of customer experience and loyalty that were derived from the use of mobile banking applications. A total of 272 participants responded to the open-ended questions; and and

57% of them identified themselves as female, while 42% identified as male. The rest of the respondents were not willing to indicate their sexual orientation. When it came to race, those who identified as black had the highest representation of 39%. This was followed by respondents who identified as white (32%). Those who identified as coloured were 17%, Indian at 9% and those who prefer not to be identified at 3%.

The majority (43%) of respondents were in the age group 18-23. This was followed by the 24-29 age group which had a representation of 24%; and the age group 30-35 years (22%). The least represented age group was 36-39 with a total 11% of the total sample. With regards to the education level, the results show that the least (9%) qualification was a diploma or college graduate. The rest of the qualifications of high school or lower, bachelor's degree and postgraduate or higher had an almost equal representation of 25%, 31% and 35% respectively. When it came to occupation, majority were students (54%) and those employed were 38%. Unemployed participants and Business owners had the least representation of 5% and 3% respectively.

Participants were asked to indicate which bank's mobile banking app they use. The results show that Bank-C had the highest number of users at 35%. This was followed by Bank-D at 21%. Bank-E, Bank-B, and Bank-A had an almost equal representation of 15%, 13% and 11% respectively. A few of the respondents (5%) did not have their banking app as part of the options hence they had to specify. Further, most of the respondents (53%) used the mobile app on weekly basis; this was followed by 36% who indicated that they use their mobile banking app daily. The rest of the participants (11%) rarely use the banking app. Table 17 shows the profile of the respondents that are referenced in this section. The participants' responses were analysed using thematic analysis and the emergent themes that seek to explain customer experience in mobile banking as well as how this experience influences customer loyalty, as presented in Table 19, are discussed next.

**Table 17:** Demographic profile of open-ended question respondents

Variable	Item	Frequency	Percent	Valid Percent	Cumulative Percent
Gender	Male	113	41.5	41.5	41.5
	Female	155	57.0	57.0	98.5
	Prefer not to say	4	1.5	1.5	100.0
Education	High School/lower	69	25.4	25.4	25.4
	Diploma/College graduate	25	9.2	9.2	34.6
	Bachelor's degree	83	30.5	30.5	65.1
	Postgraduate/Higher	95	34.9	34.9	100.0
Age	18-23	116	42.6	42.6	42.6
	24-29	66	24.3	24.3	66.9
	30-35	61	22.4	22.4	89.3
	36-39	29	10.7	10.7	100.0
Race	White	88	32.4	32.4	32.4

	Black	106	39.0	39.0	71.3
	Coloured	46	16.9	16.9	88.2
	Indian/Asian	23	8.5	8.5	96.7
	Prefer not to say	9	3.3	3.3	100.0
Occupation	Did not indicate	1	.4	.4	.4
	Unemployed	13	4.8	4.8	5.1
	Employed	104	38.2	38.2	43.4
	Business Owner	7	2.6	2.6	46.0
	Student	147	54.0	54.0	100.0
Bank	Did not indicate	2	.7	.7	.7
	Bank A	30	11.0	11.0	11.8
	Bank B	36	13.2	13.2	25.0
	Bank C	94	34.6	34.6	59.6
	Bank D	57	21.0	21.0	80.5
	Bank E	40	14.7	14.7	95.2
	Other. Please Specify	13	4.8	4.8	100.0
MobileFrequencyUse	Daily	97	35.7	35.7	35.7
	Weekly	144	52.9	52.9	88.6
	Monthly	27	9.9	9.9	98.5
	A few times per year	1	.4	.4	98.9
	Less Often	3	1.1	1.1	100.0

**Table 18 : Emergent themes**

Theme	Codes	Frequency
Factors influencing good customer experience	Convenience	64
	Ease of Use	40
	Personalization	32
	Security	28
	Speed (Fast)	11
Factors influencing bad customer experience	Low availability	42
	Complicated application	31
	Not secure	24
	Many Errors	19
	Slow application	16
Factors influencing customer loyalty	Convenience	45
	Ease of Use	39
	Security	26
	Rewards	16
	Affordability	11
	Speed	10

#### 4.4.1 Factors influencing good customer experience

##### a) Convenience

The most cited factor influencing customer experience was the convenience afforded to mobile users using mobile banking applications. The respondents indicated that they consider a good customer experience as an experience that takes away the need for them to visit a physical banking branch, allows them to self-service and ultimately places them in control of their banking. Respondent R29 explains: *"I want to be able to manage all my accounts without the need to go physically to the branch to access funds from my fixed account"*. Similar, comments were echoed by respondent R115: *"I want to have a convenient app that is safe and helps me perform the financial tasks that I need to execute without having to physically go to the bank"*. For most, convenience was associated with making payments and transferring money at any time so as to have time to perform other activities. This was explained by respondent R13: *"I enjoy using mobile banking because I can make payments and transfer money at any time"* (R13), further respondent R162 who is both a full-time employee and a part time student explains: *"I work and study so I don't have time to go to the bank in person so I rely on mobile banking to get what I need done so if I can perform the transactions I need to do, then it is a good banking app"*.

##### b) Ease of Use

The theme with the second highest frequency was 'ease of use' experienced by mobile users using mobile banking applications. Most respondents indicated that they do not want to spend time figuring out or learning how to use mobile banking application functionality as they expect it to be intuitive. Respondent R152 explains: *"I'm also not particularly tech-savvy so having an app that is easy to use and understand is great, however I don't spend lots of time figuring out the parts of the app that I don't use often"*. Similarly, respondent R26 stresses the need for mobile banking to be easy to use and that one doesn't need to be literate to be able to make use of it: *"Ease of use is important to me; you do not have to be literate to use the Mobile Banking App"*. This is further corroborated by respondent R140 and R203 who respectively explain: *"I want to be able to move through the app with ease, almost without thinking about it"* (R140), *"I want everything to be easily accessible and the app must be easy to use"* (R203).

### c) Personalization

The theme with the next highest frequency was 'personalization'. There was a general consistency in the responses provided with most respondents indicating that mobile banking needs to offer them customized services that suit their specific need. One of the respondents explained: *"I want my mobile app to give me personalized offers just for me"* (R78). Further respondent R125 explains: *"The banking app needs to offer me products based on my specific spending habits or offering me special interest rates in app given my banking history information"* (R125). Therefore, it is clear in these responses that mobile banking users require services that are tailored to their needs and are fit for purpose.

### d) Security

Security emerged as the fourth most cited factor influencing customer experience in the use of mobile banking. Respondents also indicated the importance of a secure mobile banking application as an attribute of a good customer experience. Respondent R275 explains the importance of active monitoring in mobile banking so as to proactively determine unfamiliar activity, he explains: *"Mobile banking app must have active monitoring mechanism in order to recognise/detect unfamiliar activities then notify the user immediately"*. Respondent R19 and R182 in their respective comments also echo the same sentiments: *"Mobile banking should be secure and user friendly"* (R19), *"The mobile banking app must be safe and secure"* (R182).

### e) Speed

Finally, the theme that recorded the least frequency relative to the others was 'speed'. Some respondents indicated that they want: reliable; fast mobile application in general that requires minimum effort. This evidenced in the explanation given by respondent R3, R11 and R141 who respectively explain that a good customer experience needs to be: *"... A fast and reliable mobile Banking application"* (R3); *" I must be able to get what I want done with minimal effort at a fast speed"* (R11); *"Just that the app is quick and easily displays the information that I'm looking for is what I value the most"* (R141). This shows that these respondents place a lot of value in being able to transact in a speedy and timely manner when using mobile banking services.

#### 4.4.2 Factors influencing a poor customer experience

##### a) Low availability

The most cited factor influencing a poor customer experience in mobile banking is 'low availability' of the mobile banking application. Most of the respondents claimed that they viewed mobile banking application that is frequently unavailable as leading contributor to a bad experience. According to one respondent, the experience is negatively affected when the mobile app experiences a lot of downtime: *"...mobile banking app experiencing a lot of downtime will result in a bad experience"* (R37). Another respondent explains that a bad experience occurs: *"If the service would be down for more than one day"* (R19). It is therefore clear and there is a general consensus from most responses that mobile banking unavailability/downtime issues lead to an undesirable experience.

##### b) Complicated application

The theme with the second highest frequency was 'complicated application'. The respondents indicated that once mobile banking is complex, and the interface is cluttered it will lead to a bad experience. Respondent R89 and R95 respectively comment: *"Complexity of use, inefficiency, will be what characterises a bad customer experience"* (R89), *"A cluttered user interface with least used features that are not easily accessible, and a complicated navigational system will result in a bad experience "* (R95). One respondent explains that once they must spend time trying to figure out how to use mobile banking then that will result in a negative experience: *"When I have to take a long time to figure out how the app works because it is complicated to use, then that will definitely be a recipe for a bad experience on my part"* (R15).

##### c) Not secure

It was also noted that many of the respondents dislike a mobile banking application that is not secure. This insecurity is described in terms of respondent's distrust in technical infrastructure, account and data security of mobile banking. One respondent explains that they are concerned about losing money through cybercrime: *"Loss of money through cyber-crime will be the worst customer experience in my opinion"* (R278). Another respondent

explains that just by merely having a feeling of distrust on the mobile app will ultimately lead to a bad experience: *"When I feel like someone can easily steal my banking information through the app it results in an unpleasant experience for me"* (R12). Therefore, there is need for the bank to continuously improve mobile banking security in order to improve their clients' experience.

#### d) Reliability

The theme that recorded the fourth highest frequency was that of a mobile banking application that produces a lot of errors. Some respondents thought the problem of mobile banking app throwing 'many errors' was a bad experience especially those errors without an explicitly defined error message. An example is one respondent explains: *"if I get a lot of errors when transacting with my mobile bank, I expect the error message to be informative and understandable as opposed to getting e.g. sys error 104"* (R190). Further respondent R28 corroborates this by explaining that connectivity errors that may be network related also contribute to a bad experience for example: *"Experiencing app error such as, unable to connect etc."* (R28). Therefore, the customer's preference will be an error free mobile application.

#### e) Responsiveness

Finally, the theme which occurred with the least frequency in terms of its contribution to a poor experience was 'slow application'. Respondent R148 and R205 explanation about slow applications was: *"A bad experience in the past was slow app loading times when I needed to pay something as soon as possible "* (R148), on the other hand respondent R205 explains: *"Slow system /slow connection to the internet negatively contributes to my experience"* (R205). This theme complements the findings from the previously discussed theme related to the customers placing value on a speedy mobile banking application.

### 4.4.3 Factors influencing customer loyalty

When asked how their experience as a customer influences their loyalty towards their mobile bank, the common thread among all the respondents was that they were all in agreement

that their experience influenced their loyalty towards mobile banking. Majority of the respondents claim that once their experience is good, they are more likely to be loyal to their mobile bank. These include respondent R3 who explain: *"If I have a great mobile banking experience, I am less likely to switch to another bank, hence will be more loyal to my bank"* (R3). Further, respondent R8 says: *"A good experience will make me stick to my bank"* (R8). Another stated: *"Well if I am happy with the service received, I will have no reason to look for my needs to be fulfilled anywhere else"* (R40). Respondent R195 also similarly explains that if all their needs are fulfilled by mobile banking then they will be loyal: *"I will be loyal to my bank as I find the mobile banking experience they offer me meets all my needs"* (R195).

On the other hand, an equally large number of respondents suggested that a bad customer experience will result in them switching to alternative mobile bank offerings. This was explained by respondent R30 in the following quote: *"My experience is definitely a deciding factor. If I'm not happy with the basic service, I will look elsewhere. The only issue is having my debit orders and banking details changed"* (R30). Similarly, respondent R34 explains: *"My experience greatly influences my loyalty. If I don't have a pleasant experience, I will look elsewhere"* (R34). It was also interesting to note that some of the respondents although fewer indicated that if they were presented with cheaper alternatives in terms of mobile banking, they would switch banks. Respondent R194 explains: *"my experience doesn't really influence my loyalty, however If there is another bank that is cheaper and more reliable/efficient, I am open to switching"* (R194). Similarly, another respondent had the following to say: *"I am not loyal to a bank. If I can pay less for banking services elsewhere, I will move to another bank"* (R108).

The findings show that six factors influence millennials' loyalty to an organization that provides mobile banking services. These are: convenience, ease of use, security, rewards, affordability and speed. These are discussed below:

#### a) Convenience

Due to the flexibility that mobile banking provides majority of the respondents value the fact that they do not necessarily need to visit a physical banking branch to fulfil their banking needs but rather can perform banking transactions from anywhere. Respondent R56 explained that *"It's quite convenient to use the mobile banking services...at the moment there are apps created to assist with the mobile banking"* (R56). Similarly, on convenience respondent R208 and R248 made these respective comments: *"The ability to fulfil my banking needs without having to go into a bank is priceless"* (R208) and *"I appreciate better mobile banking services so that you can avoid going into the bank"* (R248).

#### b) Ease of use

There was a strong suggestion that ease of use plays a key role in influencing the loyalty of the respondents. Millennials do not want to spend a lot of time figuring out how to use mobile banking. Therefore, respondents indicated their desire to use a mobile banking application that is simplistic and easy to use. Respondent R109 for example indicated that they desire to use a mobile banking application that is easy to use: *"apps that are easy to use and always available influence my loyalty immensely"* (R109). Other respondents such as respondent R37 indicated: *"Ease of use – if you have to start figuring out how to use the mobile banking app then it's not good enough"* (R37) and respondent R236 further explains: *"Ease of use – is a core driver of my loyalty"* (R 236).

#### c) Security

The findings show that millennials perceive a secure mobile banking app as a factor that drives their loyalty. Generally, most of the respondents indicated that safety and security including the protection of their private information was of significant importance. The following comments were made in relation to security. Respondent R12 indicated: *"A safe and secure online environment will be a key driver of loyalty especially in a world that has a high prevalence of online fraud/scams"* (R12). Again, both respondents R98 and R110 in agreement with previous sentiments explain that they desire: *"Good security"* (R98) and *"safety"* (R110) to be loyal. Respondent R270 values the protection of their private information as a measure that protects them from various concerns related to data exfiltration, malware attack and network intrusion, he says: *"if my private information/data is protected I will be loyal"* (R270).

#### d) Rewards

A sizable number of respondents were in agreement that a good rewards system will drive their loyalty in mobile banking services. Respondent R30 and R89 agree respectively in their view as explained by their comments: *"A good reward system is key to making me loyal"* (R89) and *"Better rewards positively influence my loyalty"* (R30). Furthermore, respondent R261 consistent with the other responses further explains: *"Additional benefits that incentivize the use of the app for example, rewards programme; but perhaps even programmes aimed more at students (if we are talking about that demographic) would be great"* (R261).

#### e) Affordability

Affordability was consistently noted as a factor that influences the millennial customer's loyalty in the use of mobile banking services. Majority of the customers value the use of competitively priced mobile banking apps with transparent transaction fees. For example, respondent R124 indicated that *"As a student, it's difficult to justify sticking with a more expensive service when another will do just as well at a cheaper price"*(R124). Similarly, another respondent indicated that: *"A mobile bank that doesn't overcharge for every single transaction and is transparent about their fees will definitely earn my loyalty"* (R92), while one respondent simply explained: *"I will stay with my bank if the charges that are low"* (R8). On the other hand, transparency in relation to bank charges was another factor linked to affordability that most respondents agree on as reflected their responses. This is explained in the following comment: *"I want to have my charges shown upfront and there should be no hidden surcharges"* (R259).

#### f) Speed

Finally, an important driver of loyalty in the use of mobile banking applications is speed. When using mobile banking the execution of mobile banking transactions in a prompt manner is perceived to be a positive driver of loyalty. Some respondents who mentioned the importance of speed in mobile banking explained: *"I want faster mobile app loading times"* (R148) and *"... all I want is a swift service from my mobile bank, so that I can be able to transact in a timely manner"* (R187).

### 4.5 Qualitative findings of the interviews

A qualitative research approach was used to build an in-depth and holistic understanding of a situation (such as mobile banking experience) through an in-depth analysis of accounts of customer experiences from respondents. In this study 10 semi-structured interviews were completed with interviewees with an age range of 18-39 years old and different educational qualifications. Table 19 below shows the profile of the interview respondents and the emergent themes are displayed in Table 20. Three main themes emerged from the study that seeks to explain customer experience in mobile banking as well as how this experience influences customer loyalty. These themes are explained in the subsequent sections.

**Table 19:** Profile of interview respondents

Respondent	Gender	Age	Level of Education	Ethnic Group/Race	Occupation	Frequency of use of Mobile Banking
X1	Male	30 – 35	Bachelor’s degree	Black	Employed	Daily
X2	Male	36 - 39	Postgraduate/higher	White	Employed	Daily
X3	Female	24 - 29	Diploma/College graduate	Black	Employed	Weekly
X4	Male	36 - 39	Diploma/College graduate	Black	Employed	Weekly
X5	Male	36 - 39	Bachelor’s degree	Black	Employed	Weekly
X6	Male	24 - 29	High School/Lower	Black	Employed	Weekly
X7	Female	18 - 23	Postgraduate/higher	Black	Student	Daily
X8	Female	24 - 29	Postgraduate/higher	Black	Student	Weekly
X9	Female	30 - 35	Diploma/College graduate	Coloured	Employed	Daily
X10	Female	24 - 29	High school/Lower	White	Employed	Weekly

**Table 20 :** Emergent themes

Theme	codes	Frequency
Factors influencing good customer experience	Convenience	9
	Ease of Use	9
	Cheap (Affordable)	4
	Rewards	3
	Speed and availability	2
Factors influencing poor customer experience	Limited services	8
	Complicated application	7
	Not secure	6
	Errors	6
	Slow / unavailable application	5
Factors influencing customer loyalty	Convenience	6
	Ease of Use	5
	Security	4
	Rewards	4
	Affordability	4
	Fast and efficient	2
	Availability	2

#### 4.5.1 Factors influencing a good customer experience

##### a) Convenience

Majority of the respondents constituting 90 % felt that “convenience” influences a good customer experience in the use of mobile banking services. The interview responses that cite convenience include the first respondent (X1) who indicates that they are mostly at work and don’t have time to go to the physical branch, hence their preference for mobile banking

which is very convenient and allows them to perform their banking transactions while they work. Respondent X1 further explains: *“It fits my schedule and very easy to use as well as giving me the privacy I need”*. The other comments made in relation to convenience are from one respondent who is both a full-time employee and a part time student and explains: *“I work long hours and attend school therefore I need a convenient way of performing my banking”*– X8. Further respondent X4 also explains: *“The sole reason I use a banking app is convenience, the alternative is to do in-branch banking where you waste time standing in queues”*.

#### b) Ease of use

Most interview respondents (90%) felt that ease of use contributes to a good customer experience in mobile banking. Among those that echoed this sentiment include respondent X7 who explains: *“Mobile banking needs to be easy to use for both the elderly and all the youth despite their education level”*. Some of the respondents feel that one doesn't have to be educated to be able to use mobile banking; however mobile banking needs to be simple enough so that it is inclusive. These include respondent X1 who explains: *“Mobile banking needs to be easy to use; you do not need to have a diploma or degree to use an app”*. Therefore the level of ease of use that the respondents expect should be in such way that the mobile banking app user interfaces are intuitive. Another respondent further says: *“I use mobile banking every day; if it wasn't easy to use I wouldn't be using it I will rather go to the physical branch”*(X2).

#### c) Affordability

Affordability of mobile banking services also emerged as a popular theme among the interview respondents. As evidenced in some of the interview responses, cheaper mobile banking services were perceived to influence a good customer experience. Respondent X8 explains: *“Mobile banking will have to be convenient and cheap (it should be cheaper to use mobile banking compared to the physical branch)”*. Further considering the exorbitant data prices in South Africa other respondents expects a mobile banking app that is free of charges or doesn't use data at all. This is explained by respondent X6 and X10 respectively: *“... making mobile banking free of charge to customers will be ideal”* (X6), *“No data needed to check or operate the mobile banking app will be great for me”* – X10.

#### d) Rewards

It was also interesting to note that some respondents cited rewards (loyalty points) as a factor that will influence a good customer experience in mobile banking. Respondents indicated that if they were to get some incentives whether in the form of rewards, discounts for using mobile banking that will be a good experience. For example respondent X3 explains: *“if I get some rewards or discounts for using the mobile banking app that will be a good experience”*. Further respondent X6 also explains: *“getting rewarded in the form of loyalty points that are convertible to cash will certainly work for me or making mobile banking free of charge to customers”*.

#### e) Speed and availability

Speed and availability also emerged as a very important theme to the interview respondents. Mobile banking users expect it to be fast, so they don't spend a lot of time performing their transactions. For example, one respondent explains: *“The mobile banking service must be fast and the systems up and running all the time”* (X8). Another respondent also explained in support of availability of mobile banking application: *“I expect round the clock availability of mobile banking services”* (X7).

### 4.5.2 Factors influencing a poor customer experience

#### a) Limited services

The most cited factor that influences a poor customer experience in mobile banking is when the services offered through mobile banking are limited. The data from the semi-structured interviews highlight that limited services plays a big role in influencing a poor customer experience. For instance, one respondent stated that they expect that when they start a banking transaction on their phone, they can complete it successfully without any limitations: *“I do not want to end up being asked to visit the branch to complete a request that I started on my mobile banking app”* (X9). One specific example that was cited by this respondent was that if they start a loan application on the mobile application, they need the ability to submit all the supporting documents via the mobile app instead of being referred to a separate channel to do this. Another respondent indicated that the absence of all the

features they desired on their mobile banking application annoyed him and left him with no option but to use alternate banking channels : *“I hate a situation where my mobile bank doesn’t have all the features that I need from it, therefore forcing me to use alternative banking channels”* (X6). One specific example of a mobile banking service that the majority of the respondents expected was a mobile wallet/cash send option. Respondent X6 explains: “currently my bank does not offer an instant cash sending option to another person via a cell phone number and this has forced me to look for alternatives”.

#### b) Complicated application

A complicated mobile banking application was also identified as another factor that influences a poor customer experience. A number of respondents indicated that they want their mobile banking application to be simple and a complicated mobile banking app will be undesirable. This was highlighted by respondent X9 who explains: *“I do not like mobile banking that is complicated to use, mobile banking should be simple to use”*. Similarly, another respondent explains: *“if I cannot figure out by myself how to conduct a simple banking activity that will be a waste of time”* (X2). Complex navigation and a cluttered interface and incompatibility with certain phones was also highlighted as problematic by some respondents for example one respondent also explains: *“complex navigation and layout as well as incompatibility with certain mobile phones will be an issue with me”* (X5)

#### c) Insecure

Generally, mobile banking that is susceptible to security and privacy breaches will negatively impact its adoption. Security also emerged as a major concern to mobile banking customers. Mobile banking customers perceive an insecure mobile banking application to influence a poor customer experience. This is both from the perspective of transaction security and personal information privacy. Interviewed respondents for example were annoyed by an application that exposes them to the risk of cybercrime: *“An app that is ... not secure or exposes me to the risk of cybercrime will bad for my experience”* (X4). Further respondent X1 explains that a poor customer experience will occur if he lacks confidence in his mobile banking security aspects: *“If it’s too complex and I am not really confident about the security aspects of my mobile bank I will be unhappy about my mobile banking experience”*.

#### d) Errors

The fourth factor that influences a poor customer experience is system errors. Customers expect to conduct mobile banking transactions without worrying about system errors. System

failure and errors can seriously bring about damage, loss, and inconvenience for mobile banking customers. Example of this is explained in comments made by respondent X9 and X10: *“Inability to finalize a transaction, due to constant mobile banking errors will certainly annoy me”* (X9), *“Constant errors that constantly log me out of the app will be intolerable for me”* (X10).

#### e) Slow and unavailable

Finally, a mobile banking application that is slow and is constantly unavailable or experiences a lot of system downtime was considered by many of respondents as a major contributor to a poor customer experience. At least five of the mobile banking users interviewed found a slow application to be annoying. This was expressed by comments made by respondent (X8 and X7): *“When the service is slow or not working at all this in my view will constitute a bad customer experience”* (X8) , *“Unavailability of services for example, if you need to urgently make a transfer and the MB app is down that will be a bad experience”* (X7).

### 4.5.3 Factors that influence customer loyalty

Most of the respondents generally suggested that if all the services they desire are satisfactorily provided to them through their mobile bank, they will be loyal and never think of changing to another bank. For example, one respondent notes that: *“My experience with my bank app makes me extremely loyal to my bank, in fact I can’t think of any other bank if my bank app satisfies my needs”* (X1). Further consistent with respondent X1 another respondent also explains: *“If all my banking needs are satisfied by my mobile banking app and I never experience any interrupted service these will be the reasons for me to be loyal to my bank”* (X2). On the other hand, there were some respondents who indicated that if they have a bad mobile banking experience, they were more likely to change their banks. Interestingly one of the respondents who shared this sentiment further explained that even though at times they would like to change/switch banks, the administration associated with changing banks is a nightmare to think of as it involves switching all your debit orders and other payments: *“If my experience is really bad, I will change banks the biggest impediment to this will be the admin associated with changing all my debit orders”* (X8).

A sum of 7 factors emerged from the thematic analysis done on the responses to what factors will influence you to be loyal to an organization that provides mobile banking

services. These include convenience, ease of use, security, rewards, affordability, fast/efficient and availability. Table 20 above shows the frequency of each factor under each theme.

The factor that had the highest frequency was 'convenience'. Respondents showed that their loyalty was influenced by ability to save time, no need to queue up in physical branches. Below are some of the responses by the respondents: *"The fact that I now have the flexibility to perform my banking from anywhere via my mobile banking app will keep me loyal to my bank" (X1); "I am mostly at work and hence I save a lot of time using my mobile bank and I no longer need to spend time in a queue by my bank, therefore this has also increased my loyalty towards my bank" (X5)*. The theme with the next highest level of frequency was 'ease of use'. Most respondents showed that ease of use largely determined their loyalty. One respondent explains: *"Ease of use is the greatest determinant of my loyalty because if it's complicated to use I wouldn't even adopt mobile banking in the first place I will rather stick to my physical bank branch" (X6)*.

Security, rewards and affordability all shared the same frequency of occurrence. Some of the comments made regarding these were: *"As long as you give me assurance that my money and personal details are secure that will drive me to be loyal to that mobile banking app" (X4); "If my bank has some specials, promotions and offers that come with the use of mobile banking then that will play a part in driving my loyalty" (X3); "If it's cheap or affordable I will remain loyal because I do not want to pay exorbitant costs" (X8)*. Finally, it was also noted that mobile banking that is fast & efficient and available also plays a role in influencing loyalty. These following sentiments were expressed by respondent X9 and X10 who explain: *"Mobile banking should always be fast and efficient at all time for me to use it loyally" (X9); "Once my mobile banking is always up and running while allowing me to do what I want whenever I want, without experiencing any frequent downtime or system glitches I am happy to use it all the time" (X10)*.

## 4.6 Summary of the chapter

This chapter presented the results of both quantitative and qualitative analysis. The participants of this research were varied in terms of level of education, gender, race, age and frequency of mobile banking use. The participants in this study were categorized as millennials between the ages of 18 to 39 years old who are customers of mobile banks in South Africa. To show that the research instrument that was used was both valid and reliable

statistical analysis were performed and revealed that all variables were reliable. The sample size used for the study was 344 participants for the quantitative analysis and 10 participants for the qualitative interviews, a number justifiable for the statistical analysis and the thematic analysis performed. In the following chapter an interpretation and discussion of how well the research propositions are supported by the research results will be presented.

## CHAPTER 5: DISCUSSION

### 5.1 Introduction

The research questions, the research objectives and the hypothesis were described in the previous chapters. This research also presented the research design that was used as well as the findings drawn were analysed. This chapter seeks to link the findings to the research questions and hypothesis being examined. The current chapter presents a discussion of the research findings and links the objectives, findings and discusses the contributions that can be concluded from this research. The current chapter also presents the reasons that either support or explain the results of this research. The millennial mobile banking users provided responses about their experience with using mobile banking. The responses they provided offered understanding of how businesses can realize business value from their investment in a good customer experience targeted at millennials.

The remainder of this chapter is presented as follows: *Section 5.2* discusses the findings in relation to the research objectives and extant literature on this topic. Finally, a summary of this chapter is presented in *Section 5.3*.

### 5.2 Discussion

The goal of this research is to examine how customer's experience of mobile banking influences their loyalty towards the bank. The main objectives were to explore the factors which influence a customer's experience of mobile banking and to understand how this experience influence a customer's loyalty towards mobile banking. The research hypotheses that were developed from the conceptual model will now be evaluated.

#### 5.2.1 Discussion of factors that influence customer experience

**Hypothesis 1: Convenience of mobile banking applications positively influences customer experience.**

The relationship between convenience and customer experience was found to be positive and statistically significant therefore showing support for the above hypothesis. The regression analysis that was done in Table 15 shows that there is a positive relationship

between convenience and customer experience meaning that as convenience offered by mobile banking increases so will the customer's experience. The open-ended question findings and the qualitative interview findings also support these findings. In the analysis of the open-ended questions majority of the respondents consider convenience to contribute the most to customers experience, these include for example respondent R115 who explains that: *"I want to have a convenient app that is safe and helps me perform the financial tasks that I need to execute without having to physically go to the bank"*. Similarly, participants in the qualitative interviews (90%) also considered convenience to contribute the most to customer experience as respondent X8 explains: *"I work long hours and attend school therefore I need a convenient way of performing my banking"*– X8. This is in line with literature; McLean, Al-Nabhani and Wilson (2018) also found that there is a direct relationship between utilitarian factors (ease of use, convenience and customization) and the customer experience. Similar study by Garg et al. (2014) found convenience as the most significant factor of customer experience in the banking industry, this further supporting the above research hypothesis. These findings are also in agreement with the theoretical foundations of the Expectancy Confirmation Model with Information Technology (ECM-IT) (Bhattacharjee, 2001) where a customer's satisfaction with a technological system is influenced by utilitarian factors. The implication of these findings is that convenience has a significant influence on the customer experience of millennial mobile banking customers. Therefore, banks need to ensure that their mobile banking application is convenient in order to attract and retain millennial banking customers.

**Hypothesis 2: Ease of use (usability) of mobile banking applications positively influences customer experience.**

According to McLean et al. (2018), ease of use was found to directly influence customer experience. Another study by Mbama and Ezepue (2018) found that there is a significant and positive relationship between perceived usability (ease of use) and customer experience. The findings in this study, as shown in Table 15, show that there is a statistically significant relationship between ease of use and customer experience.

Ease of use was found to significantly contribute to a customer's experience. Therefore, this means that hypothesis two is supported. Further support of this hypothesis is from the responses from participants in both the open-ended questions and qualitative interviews. For example, respondent 26 explained: *"Ease of use is important to me; you do not have to be literate to use the Mobile Banking App"* and similar comments are made by respondent X7 in the interviews: *"Mobile banking needs to be easy to use for both the elderly and all the youth"*

*despite their education level*". These findings add value to the view in literature that ease of use is significantly positively associated to customer experience. The implication of these findings is that a mobile banking application that is easy to use significantly influences the customer experience of millennial banking customers.

### **Hypothesis 3: Customization of mobile banking applications influences customer experience**

The association between customization and customer experience was tested through regression testing. This association was found to be statistically significant thereby supporting hypothesis three. This association was also found to be positive, implying that the more customizable the mobile banking features/service the better the customer experience. These findings are consistent with those of Chuah, Marimuthu and Ramayah (2014) who found that millennials expect products or services that have as many customization features as possible in order to meet their unique personal needs, interests and preferences. Wasan (2018) inferred that customization by banks is the most important customer experience factor that will influence a customer's desire to purchase and recommend the bank to others. Mclean et al. (2018) and Garg et al. (2014) both also found customization to be directly associated with customer experience. Martin, Mortimer and Andrews (2015) study conducted in an online context found that customization was of greater significance to frequent shoppers, this could provide an explanation for the results in this study especially given that majority of the participants in this study totalling 89.5 % as shown in Table 9 indicated that they use mobile banking frequently (daily and once a week). These findings are further explained by McLean et al. (2018) who states that because mobile applications are mostly used 'on the go'; utilitarian factors (convenience, ease of use and customization) seem to influence the factors that impact the customer experience. The implication of these findings emphasizes the need for banks in South Africa to establish a solid personal connection with its millennial customers. Banks that intend to increase sales must invest in understanding their customers and develop their products and services as per the millennial customers' expectations. Customization of mobile banking services will instil in the millennial customer a sense of belonging towards the bank, this will more likely boost the banks performance through their positive attitudes.

The open-ended questions findings show that participants consider customization to contribute the most to a customer experience. This is evidenced in sentiments echoed by respondent R125: *"The banking app needs to offer me products based on my specific spending habits or offering me special interest rates in app given my banking history*

*information*". This finding is consistent with Loureiro and Ferreira (2017) in their study that analyses the customer experience of the Millennials (Y-Generation). According to Loureiro and Ferreira (2017) personalized services together with excellent performance is an important concern for millennials in the banking industry. Literature that supports the above hypothesis far outweighs that which is in contrast. Therefore, this study argues that banks should be working in making millennial customer experience unique and not boring. This could be achieved through customized services and products that are personalized with unique requirements of the millennials.

**H4: Perceived risk of mobile banking applications has a negative influence on customer experience.**

This hypothesis was not supported as the relationship between perceived risk and customer experience was found to be statistically insignificant. This implies that when it comes to millennials, perceived risk does not influence mobile banking customer experience. These results contradict literature. This study differs with the findings of Jun and Palacios (2016) that found security to influence service quality of mobile banking. According to Jun and Palacios (2016) findings, perceived risk could be minimised through enhanced security. Further, in a study by Mbama et al. (2018) perceived risk result showed a negative impact on digital banking experience. Another study by Martin et al. (2015) showed that the negative effects between perceived risk and shopping satisfaction will be greater for infrequent shoppers than frequent shoppers. This means that the higher perceived or experienced risk is likely to reduce the degree of shopping satisfaction that a customer experiences. This negative impact can be created through anxiety over lack of security, privacy concerns, and lack of human interaction or failure of technology (Shankar, Smith & Rangaswamy, 2003). One possible reason for the lack of support of this hypothesis in this research can be explained by that banks are continuously investing in security to minimise risks and the results are paying off as evidenced in this study that millennials no longer perceive mobile banking as too risky. The other reason that can explain this outcome is that a higher perceived risk is likely to be particularly relevant for infrequent mobile banking users owing to their limited engagement with mobile banking. However as illustrated in Table 9 in this study most respondents make use of mobile banking frequently with 36.3 % and 53.2 % indicating that they use it daily and weekly respectively. Therefore, this may be the reason why millennials no longer perceive mobile banking to be too risky.

Results of the open-ended question analysis (Table 17) showed that security emerged as one of the themes that influenced a good customer experience in mobile banking use. For example, one respondent explained: *“Mobile banking app must have active monitoring mechanism in order to recognise/detect unfamiliar activities then notify the user immediately”* (R275). Further another respondent expressed their concern of their fear of loss of money through cybercrime: *“Loss of money through cyber-crime will be my worst customer experience in my opinion”* (R278). In further agreement with these sentiments one of the interviewed respondents also explained: *“An app that is ... not secure or exposes me to the risk of cybercrime will bad for my experience”* (X4). Even though this hypothesis was not supported in this study there is evidence in literature and in the qualitative analysis that seem to suggest otherwise. Findings from a study by Slade, Dwivedi, Piercy and Williams (2015) also revealed a negative influence of perceived risk on the intention to adopt mobile payments. Therefore, this study acknowledges these contradictions and the differences in literature and the findings of this study is an area suggested for future research.

#### **H5: Social influence has a positive influence on customer experience in mobile banking**

The relationship between *social influence* and *customer experience* was found to be statistically insignificant therefore this hypothesis was not supported. The sig statistic from the regression analysis between *social influence* and *customer experience* in Table 15 was found to be 0.099 a value that is greater than 0.05 hence the rejection of this hypothesis. This mirrors the findings in literature by Brun et al. (2017) where social influence was found to be more evident in a physical environment but however not relevant in some online environments. This can be explained by that in a web environment co-creation is common concept. Chaouali, Ben Yahia and Souiden (2016) also found that social influence doesn't significantly positively influence a customer's trust in the physical bank and in the web-based banking context. Furthermore, Rajaobelina et al. (2018) found that the social dimension of mobile experience doesn't positively impact commitment.

To further support this finding, in both the open-ended questions and interviews, social influence did not emerge as a factor that influences a customer experience. These findings agree with Gummerus and Pihlstrom (2011) who observe that perceived social value in terms of identification and social class membership that results from mobile-service use is less important. Literature also states that millennials in Africa place lesser importance on social status through banking as compared to their counterparts in the United Kingdom and the United States (Msweli & Naude, 2015); this could possibly provide the explanation for the

results of this study with regards to social influence. Therefore, in conclusion these results show us that the customer experience of millennials is not socially influenced in a mobile banking context.

#### **H6: Personal innovativeness has a positive influence on the customer experience in the use of mobile banking**

The relationship between *personal innovativeness* and *customer experience* was found not to be statistically significant therefore this hypothesis was not supported. The sig statistic from the regression analysis in Table 15 was found to be 0.515 a value greater than 0.05 hence the rejection of this hypothesis. This implies that personal innovativeness of millennials using mobile banking does not have a significant influence on customer experience. This is contrary to Anwar (2018) who states that customer/personal innovativeness strengthens the effect of perceived value on the actual mobile commerce use, meaning that the level of innovativeness of a customer plays a vital role towards both their perception and behaviour towards mobile commerce. Another study by Amoroso and Lim (2015) states that there is a strong relationship between personal innovativeness and attitude also adding to the contradiction to the findings from this study. Similarly, a study by Agarwal and Prasad (1998) affirmed that personal innovativeness of consumers has a moderating effect on the relationship between perceptions towards new information technologies and their usage intentions.

The participants in both the open-ended questions and interviews showed support of the results found in the study. This can be seen from the participants' responses where personal innovativeness did not emerge as one of the themes that influence a customer experience. One of the reasons given by one participant is that they are not keen on trying out or experimenting with new technology, "*Personal innovativeness is the least important to me, I am not keen on trying out new technology and not really trying to be creative*" (R128). This could possibly explain why millennials in this study perceive personal innovation as the least important contributor towards a customer experience. However, this is a surprising and unexpected finding given that millennials are generally seen as a generation that comprises more tech-savvy individuals. Further implication of this finding could be that for millennials using mobile banking within a South African context, personal innovativeness does not have a significant influence on customer experience due to a lack of enthusiasm to try out new technologies.

### **H8a, H8b, H8c, H8d, H8e: Demographic factors (Age, Gender, Occupation, Race and Education Level)**

The research results don't show support for any of the hypothesis mentioned above. The results from the regression analysis in Table 15 show that the demographic factors of age, gender, occupation, and race and education level do not significantly influence how customers experience mobile banking as their sig value are all above the 0.05 threshold. Therefore, these hypotheses are all rejected. This implies that with regards to age, gender, occupation, race and education level there is no major differences in how millennials customers in this study experience mobile banking, therefore they all experience it in the same way across these demographic factors. There are contextual similarities and differences between findings in extant literature and this study. These findings with respect to education level and gender agree with Mbama et al. (2018) who found that customer digital banking experience in the UK is not dependent on either gender and education level. The possible explanation with regards to education is that 72.1 percent of the respondents have both a college, bachelors and postgraduate or higher level of education which makes them literate enough to use mobile banking effectively. Males and female participants also did not evaluate customer experience differently. Garg et al. (2014) found age to have a significant relationship with some customer experience factors, however this study contradicted these findings and the possible reason is that this study was limited to millennials (18-39-year-old) whereas the other study was conducted between the under 20 and over 66 years age group range.

Therefore, according to this study all ages perceive and evaluate the customer experience in the mobile banking environment in the same way. This finding is in line with a study by Roozen and Katidis (2019) that found that relatively younger generation (18-40 years old) show a higher probability of similarities in expectations and perceptions of both service and shopping experiences. Different occupation groups and racial groups used in this study were also found to have similar perceptions of customer experience in mobile banking. Even though race/ethnicity is gaining recognition as an influential predictor of human attitude and plays an important role in customer behaviour (Mansori, Sambasivan & Md-Sidin, 2015). For example, ethnicity/race is also predicted to affect the level of participation in the use of new technology (Coverdale & Morgan, 2013). According to previous studies by Coverdale and Morgan (2013) ethnicity/race has shown an inequity in terms of access to technology and more recently the skills needed to use the internet. However, this was not the case with this study as race was found to be of no significant influence on a customer experience in mobile banking. The possible explanation can be that most respondents in this study totalling 95.3 percent were either students, business owners or employed therefore they have higher

chances of accessing technology in comparison to the unemployed. Additionally, majority of respondents were educated with at least a college diploma and higher therefore they possess the skills necessary to use technology. The implications of this study is that in South Africa the demographic factors of age, gender, occupation, race and education level do not have a significant influence on how millennials experience mobile banking.

## 5.2.2 Discussion of how customer experience influences loyalty

### **H7: Customer's experience of mobile banking influences customer loyalty**

The relationship between customer experience and loyalty was found to be statistically significant therefore showing support for the hypothesis above. This suggests that the customer's experience of millennial mobile banking customers has a substantial influence on their loyalty. The regression analysis in Table 13 shows that there is a positive and significant relationship between customer experience and loyalty with a sig value of 0.000 which is less than 0.05 hence the acceptance of this hypothesis. This means that provision of an excellent the customer experience for millennials using mobile banking will result in their increased loyalty. These findings are consistent with existing literature. Studies by Mbama et al. (2018) and also Klaus and Maklan (2013) found that customer experience has a significant influence on loyalty. Other studies by Chahal and Dutta (2015); Cetin and Dincer (2014) including Huang, Chen and Gao (2019) similarly found that customer experience has a significant influence on loyalty; showing further support of the results of this study. A study by Srivastava and Kaul (2016) showed that the influence of customer experience on both attitudinal and behavioural loyalty was statistically significant. In the same vein Rose et al. (2012) reported that the affect experience has a significant influence on the intention to repurchase. Therefore, we can conclude based on our findings and literature evidence that a positive customer experience has a sustainable influence on mobile banking that is felt through loyalty.

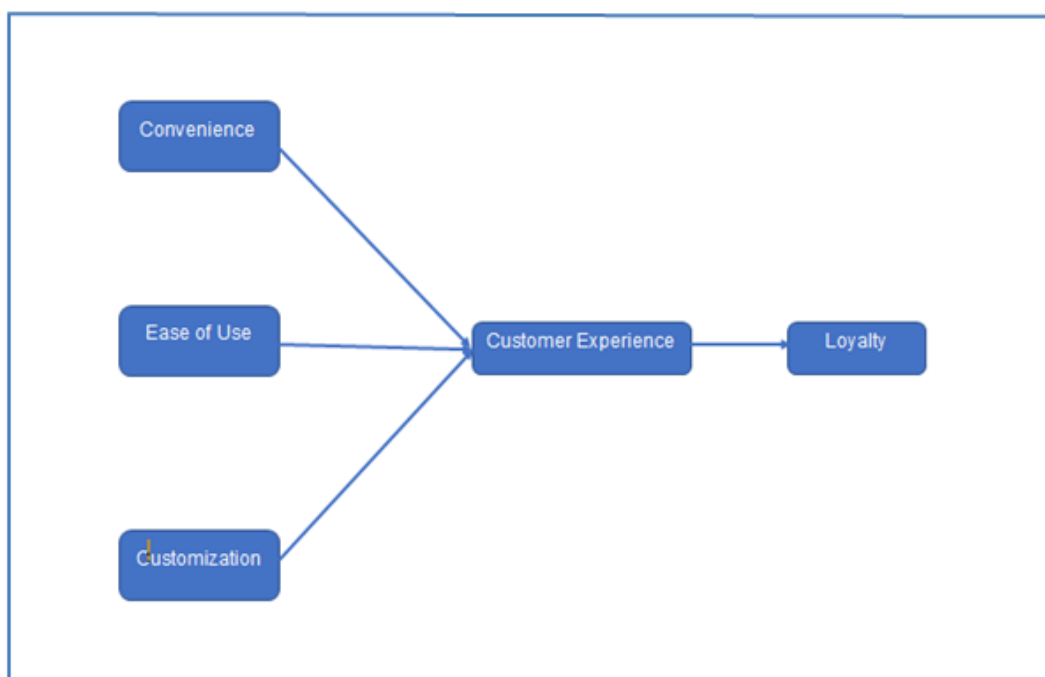
Findings from the analysis of both the open-ended questions and interviews are also showed support for hypothesis seven. Participants to both the open-ended questions and the interviews when asked how their experience influences their loyalty towards mobile banking, the majority were in agreement that their experience had a significant influence on their loyalty. Most of the participant stated that once they have a good customer experience they are more likely to be loyal, while on the other hand they indicated that a bad experience will result in them changing/switching banks. An example of this is seen in the comment made

by respondent R3 in the open-ended analysis who explains: *"If I have a great mobile banking experience I am less likely to switch to another bank, hence will be more loyal to my bank"* (R3). Further another example is reflected in one of the interview participant respondents who explain: *"My experience with my bank app determines my loyalty to my bank, in fact I can't think of switching to any other bank if my bank app satisfies my needs"* (X1). This provided added support to the quantitative results of this study. The implications of this finding are that for banks to increase the loyalty of millennials within the South African context they must focus on providing them an excellent customer experience.

### 5.3 Summary of the chapter

The findings of this study are represented by the research model in Figure 5 below. This model illustrates the factors that influence customer experience and that customer experience in turn influences loyalty among millennials. This research suggests that convenience, ease of use and customization influence customer experience which in turn influences the loyalty of millennial mobile banking customers. This study takes the first steps to offer an appreciation of what influences customer's experience throughout the use of mobile banking among millennials and presents a mobile banking customer experience model as shown in Figure 5.

**Figure 5 :** Mobile banking customer experience model



## CHAPTER 6: CONCLUSION AND RECOMMENDATION

The purpose of this research is to examine how customer's experience of mobile banking influences their loyalty towards the bank. This study made use of a conceptual model that was established from key literature as a framework for this research study. A mixed method study strategy was used for this study where data was collected from 344 millennial mobile banking users in South Africa via a survey questionnaire. Additionally, 10 semi-structured interviews were done. The open-ended questions in the survey and the interviews were both analysed using thematic analysis while the research hypothesis was tested using regression analysis.

These findings are seen as useful pointers that banks can use to improve the design of mobile banking platform and employ strategies that are highly efficient to improve millennial customer loyalty. In the previous chapter, the research discussion was presented. This chapter concludes the dissertation and begins by revisiting the research questions, with the objective to review the degree to which the questions were answered. Subsequently, a presentation of the contributions and recommendations of the study is presented. In conclusion, the limitations and recommendations for future research are presented.

### 6.1 Revisiting Research Questions

#### 6.1.1 What factors influence a customer's experience of mobile banking?

This research seeks to explore the factors that influence a customer's experience of mobile banking. Most businesses struggle to take advantage of the digital landscape to meet their customers' expectations, especially for mobile commerce (Murtagh, 2014). As a result of considerable changes in mobile banking and customers' expectations, researchers and practitioners are eager to comprehend the factors that lead to a captivating mobile banking experience. A lot of earnings are lost throughout the world because of poor online customer experiences thereby preventing e-commerce from realising its full potential (Bilgihan, Kandampully & Zhang, 2016). M-commerce companies should captivate their customers especially millennials through the provision of a thrilling customer experience. Companies are constantly exploring opportunities to discover new ways of distinguishing themselves from their competitors (Rautenbach, 2015). Creating mobile applications that evoke a thrilling customer experience for millennials will help businesses realize this competitive

edge. These research findings prove that convenience, ease of use and customization are the main factors that impact a customer's experience of mobile banking. Through focusing on these factors, the study makes notable contributions that the bank, practitioners, mobile banking application designers and other stakeholders that are involved in m-commerce need to focus on for the creation of an effective customer experience for millennials. Loyalty is the outcome of creating a captivating customer experience and these identified factors have a favourable influence on customer loyalty in mobile banking use.

### **6.1.2 How does the experience influence loyalty towards mobile banking?**

In a bid to promote the loyalty of millennials, it is crucial for mobile banking providers to comprehend the important drivers of customer loyalty. This research findings show that, customer experience possesses a significant influence on the loyalty of millennials towards their mobile bank. This is demonstrated in the acceptance of hypothesis H7 after regression analysis. Further qualitative findings show that, once an experience is good or positive, it increases the likelihood of millennials to be loyal to their mobile bank. The example of respondent R3 and X1 responses are a good demonstration of how a good customer experience influenced loyalty. Due to the pleasant experience with their mobile bank, both respondents have expressed the desire to remain loyal. On the other hand, an experience that is bad or negative will decrease the loyalty intentions of millennials. As the evidence from this study showed, when the mobile banking experience is unpleasant millennials are forced to look elsewhere or switch to alternative mobile banking offerings. Responses from R34 and X8 illustrated this sentiment.

## **6.2 Contribution and Recommendation**

These findings provide important foundations for banking managers, marketers and executives of banks in South Africa to implement some strategies that help to improve the loyalty of millennial customers. Enticing millennial customers and promoting their loyalty is a high priority for marketing research (Kandampully, Zhang & Bilgihan, 2015). Banks need to be able to understand the requirements of this unique millennials cohort to win their business and hearts. Consistent with these findings, it is important that banks as well as other firms that offer mobile banking offer a mobile app that is convenient and lets customers to perform their activities in a flexible way in their own time, easily and in a customizable manner.

Therefore, banks need to constantly seek feedback on the customer's experience through continuous usability testing of these factors. This is because the expectations of millennial customers could continue to change because of the experiences they have with other mobile applications. The comprehension of the factors that affect customer experience in mobile banking for millennials will help in the creation of a sustained competitive edge, and eventually, in the achievement of a high level of their loyalty.

This research makes some notable contributions to methodology, m-banking literature and practice. This study contributes by distinguishing the customer experience in mobile banking context and examining the factors that influence a positive mobile banking customer experience and loyalty for millennial customers, a very important segment of the South African population. This research contributes to methodology of existing customer experience studies by combining multiple methods (quantitative and qualitative) to underpin the study. This mixed method design minimizes biases and increases acceptability of research findings. Both the qualitative and quantitative approaches used in this research were rigorous and time consuming, however the adoption of these two approaches was advantageous to this research since the qualitative approach was used to support the findings of the quantitative approach. This thesis contributes to theory in the field of information systems by proposing a conceptual model for customer experience in mobile banking. The proposed conceptual model in Figure 5 provides an explanation of the important factors that influence customer experience and how customer experience within a mobile banking context influences loyalty of banking customers (Millennials). It provides researchers with the specific factors that better theorise and explain customer experience in mobile banking including how it influences customer loyalty.

### **6.3 Limitations and Future work**

While there were several contributions made by this research, like all studies, this study had its limitations that were identified. The sample that was used was identified as the first limitation. The sample excluded millennials under 18 years of age due to ethical issues (Saunders & Lewis, 2012). The following areas could be considered for future research: more studies could be done to further explore the relationship between perceived risk and mobile banking customer experience of millennials in South Africa. This research needs to be extended by testing the conceptual model in other developing countries in Africa with diverse cultural backgrounds in order to conduct a cross cultural comparison of these findings. Africa is one of the continents where mobile banking and mobile payments are

advantageous because of the large population of people living in remote areas. This research examined the factors influencing customer experience during the use of mobile banking applications, although it may seem reasonable that this study results will apply to various kinds of mobile-commerce applications it may be useful to further validate this model by testing it with different types of mobile commerce applications. Finally, a few other variables have not been included in the research model of this study, such as rewards and affordability or pricing representing opportunities for future research. Future research using the proposed conceptual model could be of benefit through the in-depth investigation of customer experience in mobile banking and the loyalty of rural communities with varying challenges. Further future research can be conducted via a longitudinal study as this could yield better results or more diversified responses with data gathered over a longer timeframe. The current research study collected the user responses concerning customer experience in mobile banking within a limited timeframe and these perceptions could possibly change overtime as more mobile banking users gain experience.

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## Appendix A – Survey Introduction Letter



### Department of Information Systems

Leslie Commerce Building  
Engineering Mall, Upper Campus  
OR  
Private Bag X3 - Rondebosch - 7701  
Tel: +27 (0) 21 650 2261 Fax: +27 (0) 21650 2280  
Internet: <http://www.commerce.uct.ac.za/informationssystemsf/>

#### Request to conduct research participation consent form

Dear Sir/Madam,

In terms of the requirements for completing a Master of Commerce Degree in Information Systems at the University of Cape Town a research study is required.

The researcher, in this case Justice Ncube, has chosen to conduct a study titled “The impact of mobile banking customer’s experience on loyalty among the Millennials in South Africa”. The objective of the research is to investigate how customer’s experience of mobile banking influences their loyalty towards the bank.

Your participation in this research is voluntary. All information will be treated in a confidential manner and used exclusively for the purpose of this study. No individual names will be recorded or published. You will not be requested to supply any identifiable information, ensuring anonymity of your responses. The findings of this study will be compiled and presented to the University of Cape Town for academic purposes. You can choose to withdraw from the research at any time for whatever reason, in accordance with ethical research requirements.

The data collection method will be done via an online survey questionnaire with Millennials that use Mobile banking in South Africa. The anonymous online survey questionnaire will take approximately 10 minutes to complete. By proceeding with the completion of the questionnaire, you have consented to participate in the study.

On request, a summary of the outcomes of the study will be made known to you. Should you have any questions regarding this research, please feel free to contact me on 0788350622 or email: [NCBJUS001@myuct.ac.za](mailto:NCBJUS001@myuct.ac.za)

Your participation in this study would be greatly appreciated, but is entirely voluntary.

Sincerely,

Signature Removed

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**Justice Ncube [signature]**

Researcher \ M.Com Student, (UCT)  
Department of Information Systems  
University of Cape Town  
Email: [NCBJUS001@myuct.ac.za](mailto:NCBJUS001@myuct.ac.za)

-----  
**Salah Kabanda [signature]**

Research Supervisor  
Department of Information Systems  
University of Cape Town  
Email: [salah.kabanda@uct.ac.za](mailto:salah.kabanda@uct.ac.za)

## Appendix B – Interview Introduction Letter



### Department of Information Systems

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Internet: <http://www.commerce.uct.ac.za/informationssystemsf/>

#### Request to conduct research and interview participation consent form

Dear Sir/Madam,

In terms of the requirements for completing a Master of Commerce Degree in Information Systems at the University of Cape Town a research study is required.

The researcher, in this case Justice Ncube, has chosen to conduct a study entitled “The impact of mobile banking customer experience on loyalty among the Millennials in South Africa. The objective of the research is to investigate how customer’s experience of mobile banking influences their loyalty towards the bank.

Your participation in this research is voluntary. All information will be treated in a confidential manner and used exclusively for the purpose of this study. No individual names will be recorded or published. You will not be requested to supply any identifiable information, ensuring anonymity of your responses. The findings of this study will be compiled and presented to the University of Cape Town for academic purposes. You can choose to withdraw from the research at any time for whatever reason, in accordance with ethical research requirements.

The data collection method will be one-on-one interviews with a small group of millennials that use mobile banking. The interviews will be conducted at a location best suited for you and will last approximately 30 minutes. If you are willing to participate in this study, kindly sign the attached form and return to me at your earliest convenience.

On request, a summary of the outcomes of the study will be made known to you. Should you have any questions regarding this research, please feel free to contact me on 078 835 0622 or email: [NCBJUS001@myuct.ac.za](mailto:NCBJUS001@myuct.ac.za)

Your participation in this study would be greatly appreciated, but is entirely voluntary.

Sincerely,

Signature Removed

-----  
**Justice Ncube [signature]**

Researcher \ M.Com Student, (UCT)  
Department of Information Systems  
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-----  
**Salah Kabanda [signature]**

Research Supervisor  
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University of Cape Town  
Email: [salah.kabanda@uct.ac.za](mailto:salah.kabanda@uct.ac.za)

**Research Participant Consent Form**

I, \_\_\_\_\_, consent to participate in the research on the impact of mobile banking customer’s experience on loyalty among the millennials in South Africa.

I am aware that participation is voluntary and that I may choose to withdraw from this study at any time, should I choose to do so.

Signature \_\_\_\_\_

Date \_\_\_\_\_

## Appendix C – Questionnaire



### Department of Information Systems

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 Tel: +27 (0) 21 650 2261 Fax: +27 (0) 21650 2280  
 Internet: <http://www.commerce.uct.ac.za/informationssystemsf/>

#### Section A: Demographics

1. *Your current age* : 18-23  24-29  30-35  36-39
2. *Gender* : Male  Female  Prefer not to say
3. *Level of education* : High School/lower  Diploma/College graduate  Bachelor Degree  Postgraduate/Higher
4. *Ethnic group/Race* : White  Black  Coloured  Indian/Asian  Prefer not to say
5. *Occupation* : Unemployed  Employed  Business Owner  Student  Retired
6. *Which bank's mobile banking app do you use:* Absa  Nedbank  FNB  Standard bank  Capitec  Other. Please Specify \_\_\_\_\_
7. *Frequency of use* : Daily  Weekly  Monthly  A few times per year  Less Often

#### Section B: Customer Experience

8. <b>Convenience</b> (Garg et al., 2014 ; Jun and Palacios,2016; Wasan,2018 ; Srivastava & Kaul, 2014)						
Please indicate the degree to which you agree or disagree with the following statements						
		Strongly Disagree	Disagree	Neither agree nor disagree	Agree	Strongly Agree
1	Banking from the app is a convenient way to manage my time.	1	2	3	4	5
2	Banking from the app makes my life easier.	1	2	3	4	5
3	Banking from the app fits with my schedule.	1	2	3	4	5

<b>9. Ease of Use</b> (McLean et al.,2018 ; Bilgihan et al.,2016; Sheng & Teo,2012)						
Please indicate the degree to which you agree or disagree with the following statements						
		<b>Strongly Disagree</b>	<b>Disagree</b>	<b>Neither agree nor disagree</b>	<b>Agree</b>	<b>Strongly Agree</b>
1	Learning to use the mobile banking app is easy for me.	1	2	3	4	5
2	I find it easy to get the mobile banking app to do what I want it to do.	1	2	3	4	5
3	It is easy for me to become skilful at using the mobile banking app.	1	2	3	4	5

<b>10. Customisation</b> (McLean et al.,2018 ; Wasan,2018; Roy, 2017; Garg et al., 2014)						
Please indicate the degree to which you agree or disagree with the following statements						
		<b>Strongly Disagree</b>	<b>Disagree</b>	<b>Neither agree nor disagree</b>	<b>Agree</b>	<b>Strongly Agree</b>
1	It feels like the mobile banking app is talking personally to me as a customer	1	2	3	4	5
2	It is important to me that the mobile banking app feels like my personal area when I use it	1	2	3	4	5
3	Mobile banking app offers me customised services.	1	2	3	4	5

<b>11. Enjoyment</b> (Rose et al.,2011 ; Pandey & Chawla, 2018)						
Please indicate the degree to which you agree or disagree with the following statements						
		<b>Strongly Disagree</b>	<b>Disagree</b>	<b>Neither agree nor disagree</b>	<b>Agree</b>	<b>Strongly Agree</b>
1.	I find using the mobile banking app enjoyable.	1	2	3	4	5
2	I have fun using the mobile banking app.	1	2	3	4	5
3	The actual process of using the mobile banking app is pleasant.	1	2	3	4	5

<b>12. Brand/Trust</b> (Mbama & Ezepue, 2018)						
Please indicate the degree to which you agree or disagree with the following statements						
		<b>Strongly Disagree</b>	<b>Disagree</b>	<b>Neither agree nor disagree</b>	<b>Agree</b>	<b>Strongly Agree</b>
1.	I trust this brand of mobile banking.	1	2	3	4	5
2	Based on my past experiences , this mobile bank always keeps consumers' best interests in mind	1	2	3	4	5
3	The bank shows a commitment to satisfy my mobile banking needs	1	2	3	4	5

<b>13. Functional Quality</b> (Monferrer-Tirado et al.,2016; Mbama & Ezepue, 2018)						
Please indicate the degree to which you agree or disagree with the following statements						
		<b>Strongly Disagree</b>	<b>Disagree</b>	<b>Neither agree nor disagree</b>	<b>Agree</b>	<b>Strongly Agree</b>
1.	The level of quality of these mobile banking app functions is consistent.	1	2	3	4	5
2	My mobile banking app has an acceptable standard of functional quality	1	2	3	4	5
3	Mobile banking possess a degree of quality that is satisfactory	1	2	3	4	5

<b>14. Satisfaction</b>						
Please indicate the degree to which you agree or disagree with the following statements						
		<b>Strongly Disagree</b>	<b>Disagree</b>	<b>Neither agree nor disagree</b>	<b>Agree</b>	<b>Strongly Agree</b>
1.	Overall I am satisfied with the mobile banking app offered by my bank.	1	2	3	4	5
2	The mobile banking experience offered by my bank exceeds my expectations.	1	2	3	4	5
3	I am drawn to this bank more than other banks because of the mobile banking service they provide.	1	2	3	4	5

<b>15. Perceived Risk</b> (Rose et al.,2011)						
Please indicate the degree to which you agree or disagree with the following statements						
		<b>Strongly Disagree</b>	<b>Disagree</b>	<b>Neither agree nor disagree</b>	<b>Agree</b>	<b>Strongly Agree</b>
1.	I am not confident about the security aspects of mobile-only banking	1	2	3	4	5
2	I feel secure when performing a mobile banking transaction	1	2	3	4	5
3	Using mobile -only banking, I would face the risk of financial loss	1	2	3	4	5

<b>16. Social Influence</b> (Bilgihan et al.,2016)						
Please indicate the degree to which you agree or disagree with the following statements						
		<b>Strongly Disagree</b>	<b>Disagree</b>	<b>Neither agree nor disagree</b>	<b>Agree</b>	<b>Strongly Agree</b>
1.	My friends and family value the use of mobile banking	1	2	3	4	5
2.	I find mobile banking trendy	1	2	3	4	5
3.	The people that influence me use mobile banking	1	2	3	4	5

<b>17. Personal Innovativeness</b> (Karjaluoto et al.,2018)						
Please indicate the degree to which you agree or disagree with the following statements						
		<b>Strongly Disagree</b>	<b>Disagree</b>	<b>Neither agree nor disagree</b>	<b>Agree</b>	<b>Strongly Agree</b>
1.	If I heard about a new mobile banking app, I would look for ways to experiment with it	1	2	3	4	5
2.	Among my peers, I am usually the first to explore new mobile banking applications	1	2	3	4	5
3.	I like to experiment with new mobile banking applications	1	2	3	4	5

<b>18. Customer Experience</b> (Roy, 2018; Srivastava & Kaul, 2016; Sheng & Teo,2012; Dennis et al., 2014 )						
Please indicate the degree to which you agree or disagree with the following statements						
		<b>Strongly Disagree</b>	<b>Disagree</b>	<b>Neither agree nor disagree</b>	<b>Agree</b>	<b>Strongly Agree</b>
1.	I would say that my experience of using mobile banking is excellent	1	2	3	4	5
2.	My mobile banking needs/requirements are very well met by this mobile bank	1	2	3	4	5
3.	I believe that we get a superior experience at my mobile bank.	1	2	3	4	5

<b>19. Loyalty</b> (Pandey & Chawla, 2018 ; Levy & Hino, 2016 ; Mbama & Ezepue, 2018;Roy,2018;Aydin & Özer, 2005)						
Please indicate the degree to which you agree or disagree with the following statements						
		<b>Strongly Disagree</b>	<b>Disagree</b>	<b>Neither agree nor disagree</b>	<b>Agree</b>	<b>Strongly Agree</b>
1.	In the future, I will be loyal to this Mobile bank	1	2	3	4	5
2.	If the other banks were cheaper, I would still go to this same bank	1	2	3	4	5
3.	I recommend this Mobile bank to others	1	2	3	4	5

### Section C: Customer Experience, Loyalty

20. Select 3 factors that you consider contribute the most to a customer experience and 3 factors that contribute the least to a customer experience (Drag the following items into their respective groups).

- Convenience
- Ease of Use
- Customisation
- Enjoyment
- Brand/Trust
- Functional Quality
- Satisfaction
- Perceived Risk
- Social Influence
- Personal Innovativeness

Contribute the most:

Contribute the least:

20a. Why? (Brief reasons for the choices above)

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21. What will be a good customer experience in your opinion when using mobile banking services?

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22. What will be a bad customer experience in your opinion when using mobile banking services?

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23. How does your experience as a customer influence your loyalty towards your mobile bank?

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24. What factors will drive you to be loyal to an organisation that provides mobile banking services?

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UCT Commerce Faculty Office

08<sup>th</sup> March 2019

Mr Justice Ncube  
Department of Information  
Systems  
University of Cape Town

Dear Mr Ncube

REF: REC 2019/000/012

### **THE IMPACT OF MOBILE BANKING CUSTOMER EXPERIENCE ON LOYALTY AMONG THE MILLENNIALS IN SOUTH AFRICA**

We are pleased to inform you that your ethics application has been approved. Unless otherwise specified this ethical clearance is valid for 1 year and may be renewed upon application.

Please be aware that you need to notify the Ethics Committee immediately should any aspect of your study regarding the engagement with participants as approved in this application, change. This may include aspects such as changes to the research design, questionnaires, or choice of participants.

The ongoing ethical conduct throughout the duration of the study remains the responsibility of the principal investigator.

We wish you well for your research.

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