MOBILE BANKING: A COMPARATIVE STUDY OF SOUTH AFRICA AND NIGERIA

A MASTERS DISSERTATION PRESENTED TO THE
DEPARTMENT OF INFORMATION SYSTEMS
FACULTY OF COMMERCE
UNIVERSITY OF CAPE TOWN

BY

OMOLOLA OLA BANKOLE

IN PARTIAL FULFILMENT OF THE REQUIREMENTS FOR THE DEGREE OF MASTER OF COMMERCE IN INFORMATION SYSTEMS

AUGUST 2010

Declaration

1. I know that plagiarism is wrong. Plagiarism is to use another's work and pretend that it is one's own.
2. I have used the APA (American Psychological Association) convention for citation and referencing. Each contribution to, and quotation in, this dissertation from the work(s) of other people has been attributed, and has been cited and referenced.
3. This dissertation is my own work.
4. I have not allowed, and will not allow, anyone to copy my work with the intention of passing it off as his or her own work.
5. I acknowledge that copying someone else's work or part of it, is wrong, and declare that this is my own work.

Signature..... Date...../...../.....

Omolola Ola Bankole

Acknowledgements

I acknowledge my supervisor, Dr. Eric Cloete, for his support and advice during the course of this research. I thank him for his help and guidance throughout the research. My gratitude goes to Prof. Mike Hart for giving me his expertise and time during the data analysis. I appreciate Prof. Wallace Chigona for his active efforts and hard work as the master's course convenor.

I thank all my friends and colleagues for making the entire Master's programme an interesting and memorable one.

I acknowledge my husband, Felix Bankole, for his understanding and encouragement during the entire Master's programme - I appreciate you. I thank Chief and Mrs J.O Bankole, for their prayers, love and support.

I wish to thank my father Oluyemi Ola for his support and my siblings – Tokunbo, Opeyemi, Abisola, Ayodele and Monisola, for their love and care.

I am grateful to all the participants who took part in this study.

I thank God for His infinite mercies.

Abstract

Mobile banking (m-banking) is an innovative technology application, which has made available different value-added applications in both commercial and business processes. South Africa and Nigeria are reported to have high mobile applications usage in Africa, one of which is m-banking.

This study identifies the factors that influence the user acceptance of m-banking in both countries. The aim of this research is to examine the relative differences/similarities of m-banking in South Africa and Nigeria. Several studies on the acceptance of m-banking have produced various results across different countries. This can be accredited to the dissimilar socio-cultural composition of such countries. The user acceptance of m-banking in a country is determined by distinct characteristic factors which are unique to that country.

This research takes on a positivistic epistemology. This is an exploratory and deductive study which explains the factors that influence the acceptance of m-banking in two African countries by the use of a conceptual model.

This study employed quantitative and qualitative data gathering and analysis processes. A cross-sectional survey was conducted.. A total of 451 valid questionnaires were collected and analysed using Statistica 9 - analytic research software. The interviews were analysed using selective coding techniques.

In this study, several factors such as cost, trust, satisfaction, social factors, utility expectancy (usefulness) and effort expectancy (ease of use) were identified from literature, and a conceptual model was formulated to test hypotheses generated from previous related studies. The dimensions of national culture – power, distance, uncertainty avoidance, masculinity and individualism were also integrated into the model.

The result showed that SMS alert for account transactions is the most used m-banking service in both countries. The hypothesised relationships were validated by using regression tests, supported with responses from the interviewees. It was found that culture has an indirect effect on the user acceptance of m-banking. Security risk was the major disadvantageous factor while ubiquity and immediacy were the most advantageous factor. Additional factors such as awareness, convenience and literacy level were also revealed to influence the acceptance of m-banking in both countries.

Table of Contents

List of Tables

List of Figures

List of Acronyms and Abbreviations

C-TAM-TPB	Combined TAM and TPB Model
DTPB	Decomposed Theory of Planned Behaviour
E-Business	Electronic Business
E-Commerce	Electronic Commerce
IDT	Innovation Diffusion Theory
IDV	Individualism/Collectivism
IS	Information System
IT	Information Technology
ITU	International Telecommunication Union
M/F	Masculinity/Femininity
M-Banking	Mobile Banking
M-Business	Mobile Business
M-Commerce	Mobile Commerce
MM	Motivational Model
MMA	Mobile Marketing Association
MPCU	Model of PC Utilisation
MTN	Mobile Telecommunication Network
PD	Power Distance
SCT	Social Cognitive Theory
TAM	Technology Acceptance Model
TPB	Theory of Planned Behaviour
TRA	Theory of Reasoned Action
UA	Uncertainty Avoidance
UNCTAD	United Nations Conference on Trade and Development
UTAUT	Unified Theory of Acceptance and Use of Technology

CHAPTER 1

1 Introduction

1.1 Background

The advent of mobile technology and its devices has brought about efficiency in the manner in which commercial and business activities are performed (UNCTAD, 2007). One of such technologies is mobile telephony. Mobile telephony serves as a platform for launching innovative mobile phone applications and services (UNCTAD, 2007; Patrikakis, Fafali, Minogiannis & Kourbelis, 2009). Mobile applications such as mobile wallet and mobile credit cards are available to users in various countries (Amin, 2008; Shin, 2009). The utilisation of mobile technologies for commercial activities brings about the concept of mobile commerce (m-commerce). There has been a record increase in the number of mobile phone subscribers in developed and developing countries (Boadi, Boateng, Hinson & Opoku, 2007; UNCTAD 2007). Mobile phone technology has created business opportunities for the banking industry (Amin, 2008). The mobile market is one of the fastest growing markets in the world (Gupta, 2005; UNCTAD, 2007). Financial institutions have since seized the opportunity to gain advantage by offering a variety of value-added services to customers through the use of mobile banking (Gupta, 2005; Amin, 2008).

Mobile banking (m-banking) is an application of m-commerce that enables customers to bank virtually at any convenient time and place (Suoranta, 2003). It is the provision of banking and related financial services such as saving, fund transfer, stock market transaction, among others, on mobile devices such as cell phones, Personal Digital Assistants (PDAs) and smart phones (Tiwari & Buse, 2007, p.64; Lee & Chung, 2009). There has been unprecedented growth in the m-banking market in many nations. For instance, in the United States, about 30% of households use mobile phones to perform banking operations (MMA, 2009). This is also the case in European and Asian countries where 80% of households use m-banking services (Gupta, 2005).

In Africa, the mobile market industry has been growing at a significant rate when compared to other continents in the world (ITU, 2007). Countries such as South Africa, Nigeria, Kenya and Egypt are the leading markets for m-banking applications in Africa (UNCTAD, 2007). This research is focused on m-banking applications in South Africa and Nigeria from a comparative perspective.

1.2 Motivation and Problem Statement

In recent times, South Africa and Nigeria have been the leading countries in terms of the number of mobile phone subscribers in Africa (UNCTAD, 2007). Therefore, both countries are pre-eminent in terms of mobile phone usage and application in Africa. This in turn has attracted many innovative applications for use on mobile phones, one of which is m-banking. This study was motivated by a need to identify the factors that influence the user acceptance of m-banking in both countries.

User Acceptance of m-banking has been determined through different technology acceptance models. These models consider several factors which may influence users' perception and adoption of the m-banking. Several studies have been conducted in various countries on the adoption of m-banking. These Studies have failed to address user acceptance of m-banking in South Africa and Nigeria, and to identify culture as a factor that needs to be considered in the adoption of m-banking. Also, few comparative studies have been conducted on the user acceptance of m-banking. Therefore, this study will provide an in-depth analysis on the user acceptance of m-banking in South Africa and Nigeria. The research will examine the indirect effect of culture on the user acceptance of m-banking in both countries from a comparative perspective.

1.3 Research Questions

An appropriate measure for research of this nature is to present a primary research question which is concise and encapsulates the purpose of the entire study. The primary research question for this study is thus:

What are the comparative differences/similarities of m-banking in South Africa and Nigeria?

The secondary research questions are:

- What are the m-banking services that are mostly used by customers?
- What factors influence user acceptance of m-banking?
- What are the emergent factors that further influence user acceptance of m-banking?
- What are the implications of the use of m-banking in South Africa and Nigeria?

1.4 Research Aim and Objectives

The aim of this research is to examine the relative differences/similarities of m-banking in South Africa and Nigeria. The following are the objectives:

- To determine the m-banking services that are used most often by customers.
- To further investigate additional factors that may influence user acceptance of m-banking.
- To identify the advantages and disadvantages of m-banking in South Africa and Nigeria.
- To validate the hypothesised associations between factors from previous related studies.

1.5 Justification and Importance of the Research

This research provides a comparative study of m-banking in South Africa and Nigeria by employing a conceptual model developed from existing literature. Many studies have been conducted in this field, but they are yet to fully explain the factors which provide unique influence to the user acceptance of m-banking in each country. This study identifies these factors. A comparison of the findings in both countries further provides the differences and similarities in the use of m-banking.

This study identifies cost, trust, social factors, utility expectancy, effort expectancy, user satisfaction, power distance, uncertainty avoidance, masculinity and individualism as such factors. The research provides insights into the user acceptance of m-banking in South Africa and Nigeria thereby offering appropriate recommendations to interested stakeholders.

1.6 Outline of the Research

Related studies on several technology adoption models are presented at length in Chapter 2. An overview of m-banking applications, its services, advantages and disadvantages are also examined. Chapter 3 focuses on the methodology of the research. It reports the research concepts, paradigm, approach, method of data collection, questionnaire design, data quality and integrity issues employed in this research. Chapter 4 presents the analysis of the data distribution in this study. Chapter 5 provides the regression analysis, hypotheses tests and the interpretation of the interviews. Chapter 6 presents the results and reports of the research findings. The limitations, areas of future study and the conclusion are presented in Chapter 7.

CHAPTER 2

2 Literature Review

2.1 Introduction

The following sections in this chapter provide the literature review for this study. In order to fully understand m-banking as an application of m-commerce, the key ideas and perceptions which are related to m-commerce are presnted. M-banking provides banking services to banked, unbanked and under banked populations in the society. A report is provided on the usage of innovative m-banking services that are available in South Africa and Nigeria.

Several technology acceptance models are employed in information systems research. The literature revealed that these models are used in specified contexts which suit the nature and purpose of the concept being investigated. Therefore, it is crucial to use an appropriate technology acceptance model for this study.

This chapter explains the key ideas relating to m-commerce. It presents the relationship between m-commerce and other related concepts. It highlights m-banking services in South Africa and Nigeria, and examines the different IT acceptance models. The identified gaps in literature are presented and the chapter concludes with a summary of the literature review.

2.2 Definition of Key Ideas

Electronic Business

Electronic business (e-business) is the process of conducting business activities through the use of electronic devices (Tiwari & Buse, 2007, p.28). E-business processes have brought an improvement in the way of doing business (Phan, 2001). Information and communication technologies are used to improve business by creating effective processes modelled to suit specific requirements (Faber, Ballon, Bouwman, Haaker, Rietkerk, & Steen, 2003). The following are some e-business processes: customer relations management (CRM), human resources management (HRM), enterprise resource planning (ERP), order tracking and product control, procurement of goods and services, product service and support, dissemination of data or information and supply chain management (UNCTAD, 2004).

Mobile Business

Mobile business (m-business) performs similar functions to that of e-business. It is considered an extension of e-business or an independent concept which employs ubiquitous methods in performing business activities (Tiwari & Buse, 2007, p.31). M-business is the execution of business processes and activities through the use of mobile technologies and devices (Tiwari & Buse, 2007, p.31; UNCTAD, 2007). Business processes are changing fast in the global business market thereby creating innovative m-business models (Camponovo & Pigneur, 2002). An m-business framework is shown in Figure 1. It is comprised of characteristics such as the application content (various available m-business services), communication (different network service providers) and technology (mobile technology and devices) which are focused on the users' needs. These characteristics are controlled through regulations and other social factors (Camponovo, 2002).

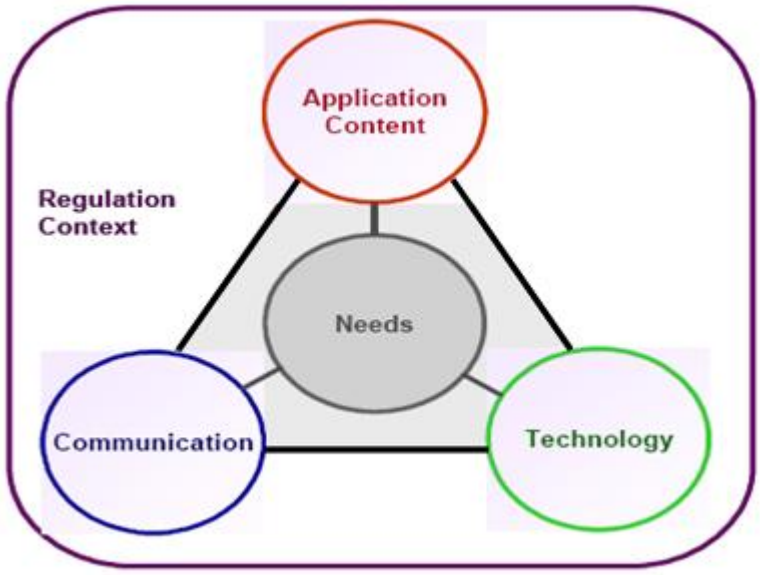


Figure 1: M-business Framework (Camponovo, 2002)

Electronic Commerce

Electronic commerce (e-commerce) is the execution of commercial activities through electronic devices (Tiwari & Buse, 2007, p.26; UNCTAD, 2007). It is a subset of e-business which forms an integral part of m-commerce and m-business (Tiwari & Buse, 2007, p.34). E-commerce involves services such as management activities through the World Wide Web, buying and selling via point of sale terminals (Molla & Licker, 2001; Sung, 2006). E-commerce is employed in electronic customer relations management (e-CRM), for electronically acquiring and retaining customers (Romano & Fjermestad, 2003; Adelaar, Bouwman, & Steinfield, 2004).

Mobile Commerce

Mobile commerce (m-commerce) is a subset of e-commerce used for carrying out commercial activities, through mobile devices (Coursaris et al., 2003). It incorporates mobility, ubiquity, immediacy, instant access, and localisation of transactional commercial activities into a single functional application (Tiwari & Buse, 2007, p.35; Luo, Li, Zhang & Shim, 2010). M-commerce has independent functional applications that are used in various scenarios. Some of these applications are: m-banking, mobile entertainment, mobile payments (m-payments), mobile information services, mobile marketing, mobile shopping, mobile ticketing, and mobile telematics services (Büyüközkan, 2009; Tiwari & Buse, 2007, p.63; Donner, 2007). These commercial applications and services are available through the use of mobile technologies (Wu & Wang, 2006; MMA, 2009).

2.3 M-Commerce Perspective and Concept

The concept of m-commerce is portrayed through its unique features. M-commerce has characteristics which differentiate it from e-commerce (Coursaris & Hassanein, 2002). M-commerce provides users with anytime and anywhere access to commercial services with the aid of mobile telecommunication devices (Yang, 2005; Büyüközkan, 2009; Luo et al., 2010). E-commerce provides the same commercial services as m-commerce, but with the aid of fixed communication devices and networks (Tiwari & Buse, 2007, p.26). M-commerce provides various mobile applications and services one of which is m-banking (Yang, 2005; Min et al., 2008).

M-commerce is related to m-business, e-business and e-commerce concepts. The relationship which exists between these four concepts can be visualized through the m-commerce perspective (Coursaris, Hassanein & Head, 2003; Tiwari & Buse, 2007, p.34).

2.3.1 M-Commerce in Perspective

M-commerce is an integral part of e-commerce and m-business. It is also an extension of e-business (Coursaris & Hassanein, 2002). It is also a subset of e-commerce, e-business and m-business (Tiwari & Buse, 2007, p.34). M-commerce combines the features and functionalities of m-business and e-business. M-commerce is the execution of commercial activities through the use of mobile telecommunication devices (Coursaris & Hassanein, 2002; Yang, 2005). The word 'business' as used in this study adheres to the explanation provided below:

> "*The term 'business', in this study, refers to all activities undertaken by a firm in order to produce and sell goods and services. These activities are, thus, not exclusively of 'commercial' nature but also include other processes such as procurement, production, customer relationship management (CRM) and human resources management (HRM).*" (Tiwari & Buse, 2007, p.25).

The relationship between m-commerce and the other three concepts are shown in Figure 2.

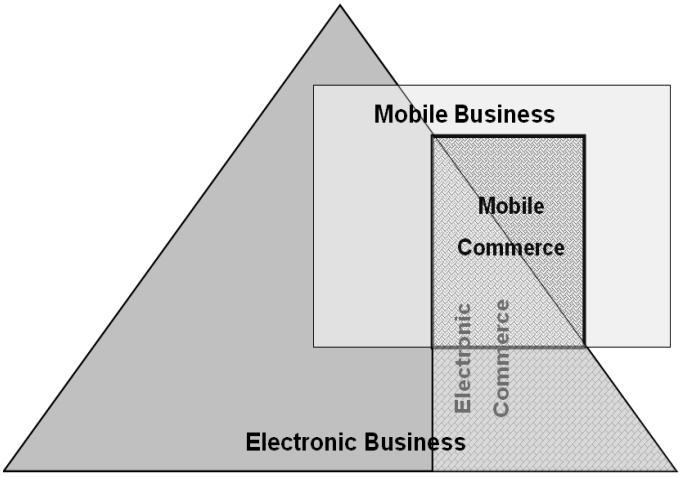


Figure 2: M-Commerce in Perspective (Tiwari & Buse, 2007, p.34)

M-commerce provides an avenue whereby value-added applications and services can be integrated into commercial activities. M-commerce accommodates the continually changing needs of users. The needs of users for m-commerce applications and services are connectivity, communication, information, commerce and entertainment (Coursaris & Hassanein, 2002).

Connectivity is a fundamental need for m-commerce users. It forms the basis for communication. Communication in turn creates the need for information, commerce and entertainment (Coursaris & Hassanein, 2002). This is illustrated diagrammatically in Figure 3.

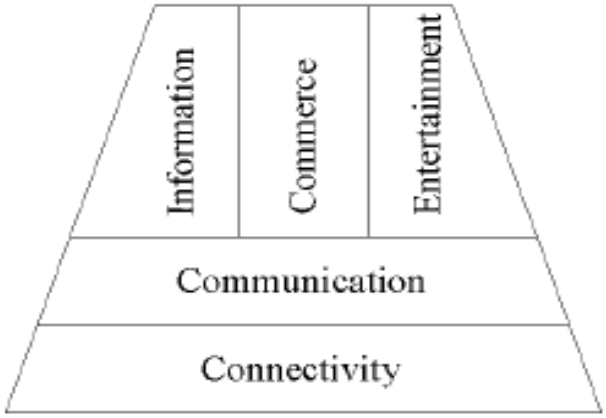


Figure 3: M-commerce User Needs (Coursaris & Hassanein, 2002)

2.3.2 The Concept of M-Commerce

M-commerce was realised as a result of the benefits provided by the advancing wireless mobile technologies (Tiwari & Buse, 2007). The increase in the use of m-commerce applications has been encouraged by the rapid growth in the adoption and usage of mobile technologies

(Varshney & Vetter, 2002). M-commerce has several features that serve to provide additional advantages when compared with the conventional ways (wired infrastructure) of transacting business or commercial activities (Tiwari & Buse, 2007, p.35). They are as follows:

1. Ubiquity: This refers to the execution of transaction on mobile device in any geographical location. The transaction is independent of the zone or region a particular user might be in.
2. Immediacy: This refers to the ease of access to information. It describes the possibility of real time availability of services to the user. The process allows the consumer to purchase goods and services whenever desired.
3. Localisation: This is the use of global positioning system technologies (GPS) by companies to offer goods and services to users based on a specific location.
4. Instant connectivity: The introduction of General Packet Radio Services (GPRS) has made it possible for mobile devices to be connected to the internet network. This enables easy accessibility to the network.
5. Pro-active functionality: This feature enables the user to have access to information at an appropriate time without delay.
6. Simple authentication procedure: This feature allows users to be identified by using Subscriber Identity Module (SIM) and Personal identification Number (PIN). This enables unambiguous identification.

2.3.3 Applications of M-Commerce

M-commerce provides a variety of mobile applications and services, (Mallat, Rossi & Tuunainen, 2004; Donner, 2007). Some m-commerce applications are provided below.

Mobile Entertainment

Mobile entertainment involves the execution of activities such as mobile gaming, entertainment services, instant messaging, music downloads, ring tones, logos, videos and digital images (Wong & Hiew, 2005; Tiwari & Buse, 2007, p.64). Mobile entertainment services such as mobile gaming and mobile images are integrated into mobile learning to create a new learning experience for users (Facer, Joiner, Stanton, Reidz, Hullz & Kirk, 2004). Mobile entertainment services are innovatively employed for a variety of emerging uses such as role playing and simulations of various real life scenarios (Schwabe & Göth, 2005).

Mobile Information Services

Mobile information services are made available through the use of mobile phones. The low cost and portability of mobile phones make information easily available to users at anytime (Parikh & Lazowska, 2006). Mobile information services provide subscribing users with updates, such as

daily news, travel information, traffic and weather reports (Tiwari & Buse, 2007, p.64). Mobile information services are often used in hospital clinics to transfer information quickly and efficiently between healthcare personnel (Ammenwerth, Buchauer, Bludau & Haux, 2000). For instance, personal digital assistants (PDA) provide healthcare personnel with access to clinical data and information. Medical progress of patients can be monitored remotely by care providers (Lu, Xiao, Sears & Jacko, 2005). Other services available through mobile information services are tracking services, mobile office, mobile search engines and directories (Tiwari & Buse, 2007, p.64).

Mobile Marketing

Mobile marketing is an application of m-commerce which capitalises on the anywhere, anytime feature of m-commerce through mobile devices such as mobile phones and PDAs to provide marketing or advertising services to users (Kurkovsky & Harihar, 2006). The penetration of mobile communication across the world has encouraged many organisations to adopt mobile marketing techniques and services (Bauer, Reichardt, Barnes & Neumann, 2005). Direct mobile marketing is commonly carried out through the use of Short Message Services (SMS) and Multimedia Messaging Services (MMS). Some other examples of mobile marketing services are mobile couponing and mobile newsletters (Pousttchi, & Wiedemann, 2006; Tiwari & Buse, 2007, p.64).

Mobile Shopping

Mobile shopping is the buying of products and services through the use of a mobile device (Wu & Wang, 2006; Tiwari & Buse, 2007, p.64). Mobile shopping services increase rapidly in countries with a high penetration of mobile communication devices, such as Japan (Funk, 2005). Mobile shopping has extended features whereby television and magazine advertisements are incorporated as a service (Funk, 2005). For instance, some fashion magazines provide their products and services through mobile shopping websites (Funk, 2005). Mobile shopping services are still being explored with a view to further extend their use in telephony (Yang, Cheng & Dia, 2008).

Mobile Ticketing

Mobile ticketing is the purchase of an entry pass (ticket) through the use of a mobile device (Maña, Martínez, Matamoros, & Troya, 2001). Mobile ticketing improves the functionality of electronic ticketing due its mobility feature (Wei & Ozok, 2005). In Finland, a mobile ticketing service, such as the one used to purchase public transportation tickets, is one of the most successful m-commerce applications (Mallat, Rossi, Tuunainen & Öörni, 2008). Some other

mobile ticketing services are mobile cinema ticketing, mobile parking, sport and cultural events tickets and air and rail traffic tickets (Tiwari & Buse, 2007, p.65).

Mobile Telematics Services

Telematics is an integration of telecommunication technologies and information technologies (Tiwari & Buse, 2007, p.65). Mobile telematics is the conveying of information over a mobile telecommunication network (Han, Kwon, Park & Kang, 2005). Services available through telematics application are remote diagnosis and maintenance of vehicles, navigation services, emergency services, vehicle tracking and theft protection (Tiwari & Buse, 2007, p.65; Kim, Oh, Lee, Kim, Lee, Chung & Cho, 2008).

M-Banking

M-banking is a widely used application of m-commerce (Chen & Frolick, 2004). It is the provision of financial or banking services through the use of mobile devices (Zhou, Lu & Wang, 2010). M-banking, like other m-commerce applications, was launched as a result of emergent 2G and 3G mobile technology (Lee, McGoldrick, Keeling, Doherty, 2003). Real time account information and transactions can be performed anywhere and at anytime (Zhou et al., 2010. In the United Kingdom, m-banking is rated as the top value-added application of m-commerce (Lee et al., 2003). M-banking can also be used in customer relation management (CRM) and as a marketing tool for financial and non-financial institutions (Riivari, 2005). M-banking services include m-payments, mobile brokerage, mobile financial information and mobile accounting (Chen & Frolick, 2004; Scornavacca & Hoehle, 2006).

2.4 M-Banking Services

M-banking and m-payments are both classified as mobile financial services (Tiwari & Buse, 2007, p.75). This study only deals with the m-banking aspect of mobile financial services. M-banking is the execution of banking activities such as accounting, brokerage and financial information services through the use of mobile devices such as PDAs or mobile telephones (Gu et al., 2009).

2.4.1 Mobile Brokerage

Mobile brokerage involves the checking of stock information, the buying and selling of financial instruments and the maintenance of stock accounts with the aid of a mobile device (Scornavacca & Hoehle, 2006; Tiwari & Buse, 2007, p.77). Mobile brokerage also utilises stock information services. For instance, mobile brokerage service is the buying and selling of stocks and foreign exchange.

2.4.2 Mobile Financial Information

Mobile financial information involves non-transaction banking and financial activities. It is an application provided to access financial information which is independent of mobile accounting or mobile brokerage (Tiwari & Buse, 2007, p.79). Balance inquiries, transactions, statement requests, returned cheques /cheque status, helpline and emergency contact services are some examples of mobile financial information applications (Tiwari & Buse, 2007, p.79).

2.4.3 Mobile Accounting - Services

Mobile accounting refers to m-banking services that involve financial transactions such as money transfers, payments of bills, account to account money transfer and buying of insurance policies (Boadi et al., 2007; Donner, 2007). Mobile accounting combines the mobility of mobile telephony with the performing of commercial activities at the user's convenience (Tae-gyu, 2004). It consists of all financial and some nonfinancial banking services that are performed through the use of mobile technology and devices (Min et al., 2008). Some examples of mobile accounting are: money transfers, cheque book requests, standing orders for bill payments, and subscribing insurance policies (Tiwari & Buse, 2007, p.75).

2.5 Advantages and Disadvantages of M-Banking

The advantages of m-banking are mobility, ubiquity, convenience, and immediacy (Suoranta, 2003; Tiwari & Buse, 2007, p.35; Gu, Lee & Suh, 2009). There is a sense of security and control associated with the use of m-banking. Users are assured of access to their bank accounts and banking services are available and within their reach. In previous studies, users agree that the use of m-banking is flexible and comfortable (Tiwari & Buse, 2007, p.131).

There are disadvantages identified with the use of m-banking some of these are security issues, crime and expenses linked with the use of m-banking (Tiwari & Buse, 2007, p.132). Users need to own a mobile phone and subscribe to a mobile communication network in order to access m-banking services. There are concerns pertaining to the safety of making transactions on mobile devices. Calls, messages and personal banking details can easily being intercepted (Brown, Gordon, Janik & Meyer, 2005).

2.6 M-Banking Services in South Africa

South Africa has the largest market for mobile communication and information services in Africa (UNCTAD, 2007). An ABSA bank press release stated that the use of m-banking grew to more than 700,000 users in the year 2006 (FinMark Trust, 2007). The mobile telecommunication network (MTN) group in South Africa has been able to provide a SIM-based version of

Fundamo (The Enterprise Mobile Financial Services Platform) mobile wallet solution (MTN Rolls, 2009). A cell phone banking company called WIZZIT established a partnership with South African banks in 2004 and has since been providing m-banking services to its users (Wray, 2008; ITU, 2008). WIZZIT has more than 50,000 South Africa users and plans to reach 16 million users throughout the country (ITU, 2008). Debit cards, money transfers, prepaid electricity payments and cell phone airtime services are provided to customers (GlobalTrends, 2007; ITU, 2008).

The banked population amongst South Africans has been on the increase. South Africans aged 16 years or older are able to open and operate individual bank accounts (FinMark Trust, 2007). Table 1 shows the number of South Africans who maintained retail bank accounts for the years 2004 and 2006. More than 51% of South Africans were already banked by 2006; this shows a positive progression compared to the 48% in 2004 (FinMark Trust, 2007).

Table 1: Banked and Unbanked South Africans for 2004 and 2006 (FinMark Trust, 2007)

Category	2004	2006
Banked	13m (48%)	15.9m (51%)
Unbanked Made Up Of:	14.1m (52%)	13.3m (49%)
Previously Banked	3.6m (13%)	3.6m (11.5%)
Never Banked	10.5m (39%)	11.7m (37.5%)

m = million

As seen in Table 2, there was an increase in the use of registered cell phones and m-banking application users in South Africa between the years 2004 and 2006. All the South African retail banks now provide m-banking applications and services to their customers (FinMark Trust, 2007).

Table 2: South Africa Mobile Banking Users in 2004 and 2006 (FinMark Trust, 2007)

Category Numbers/ Percentage of all Adults	2004	2006
Personally Using Cell Phones **(2006: prepaid and contract combined)**	11.4m (42%)	16.4m (53%)
M-banking	Negligible	0.5m (1.6%)

m = million

2.7 M-Banking Services in Nigeria

The liberalisation and deregulation of the telecommunication sector has made Nigeria the fastest growing mobile market in Africa (Ndukwe, 2005; Muganda, Bankole & Brown, 2008). Nigeria currently accounts for over 125% of the annual growth rate of mobile subscribers in the world. This has led to a significant growth in m-banking usage in the country (UNCTAD, 2007). The majority of Nigerian banks provides m-banking services (M-pay, 2009). The Nigerian government has implemented several measures through the Central Bank of Nigeria (CBN) to issue m-banking operating licences to several stakeholders to deploy m-banking applications in the country. For instance, an m-banking licence was issued to MoneyBoxAfrica, a non-banking financial institution. This enables mobile saving and payment policies that allow the banked, unbanked and under-banked population to perform banking transactions such as savings, money transfers and others (The African Executive, 2009; M-pay, 2009). Other telecommunication operators including MTN Nigeria and Zain are on the verge of obtaining such m-banking licences (Opara, 2009).

Glo Mobile Nigeria; a mobile network operator, reported that there were 200,000 daily hits on Glo m-banking services in 2006 (Fanawopo, 2006). Zain Nigeria has an m-banking service called Zap which provides services such as bill payment, fund transfers, bank account management, cash withdrawal and airtime top up. MTN Nigeria selected Fundamo to provide m-banking services to users in the country (Opara, 2009). These services are designed to accommodate both currently banked and never banked Nigerians (The African Executive, 2009; M-pay, 2009; Opara, 2009) Table 3 statistics for the population of the banked and unbanked Nigerians for the year 2008.

Table 3: Banked and Unbanked Nigerians for 2008 (Ladipo, 2009)

Category	2008
Currently Banked	18m (21%)
Unbanked Made Up Of:	68m (79%)
Previously Banked	4m (5%)
Never Banked	64m (74%)

m = million

2.8 Technology Adoption Models in Information Systems

Several technology adoption research models are adopted in the field of Information Systems (IS) (Alawahdi & Morris, 2008; Min et al., 2008). Some of these models are: Motivational Model

(MM), Theory of Planned Behaviour (TPB), Combined TAM and TPB (C-TAM-TPB) Model, Theory of Reasoned Action (TRA), Model of PC Utilisation (MPCU), Technology Acceptance Model (TAM), Innovation Diffusion Theory (IDT), Social Cognitive Theory (SCT) and Unified Theory of Acceptance and Use of Technology (UTAUT) Model (Alawahdi & Morris, 2008). The most prominent of these research models are the Technology Acceptance Model (TAM), the Theory of Reasoned Action (TRA) and the Theory of Planned Behaviour (TPB) (Min et al., 2008).

2.8.1 Theory of Reasoned Action (TRA)

The TRA is a social psychology model used in determining the actual behaviour and behavioural intention to use (Fishbein & Ajzen, 1975 as cited in Davis, Bagozzi & Warshaw, 1989). Its three main constructs are behavioural intention (BI), which is the intention to execute the behaviour, attitude (A), which is the mindset in context towards the behaviour, and subjective norm (SN), which is the influence of society which affects consumer use (Davis et al., 1989). Behavioural intention to use is determined by attitude and subjective norm (Yu et al., 2005). Other factors such as beliefs and motivation to comply, act indirectly on behavioural intention through attitude and subjective norm construct (Davis et al., 1989). Figure 4 shows the TRA model diagram.

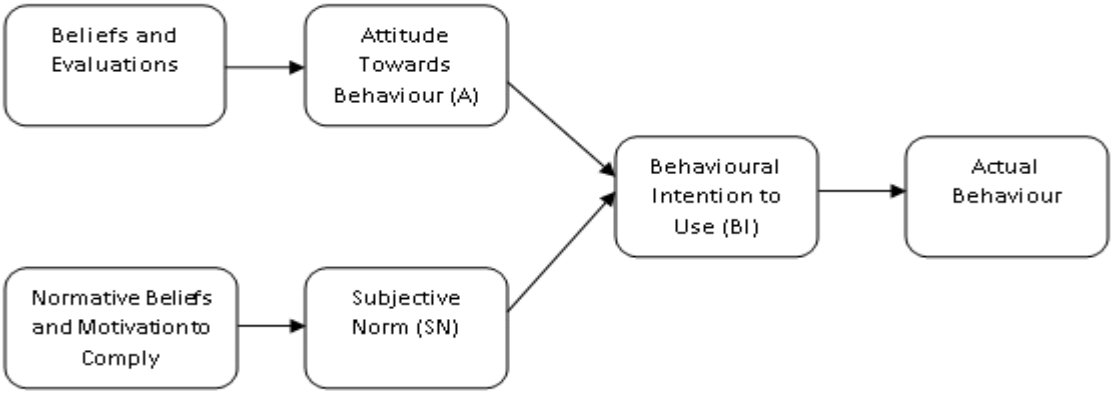


Figure 4: Theory of Reasoned Action (Davis et al., 1989)

Bauer, Barnes, Reichardt & Neumann (2005) used TRA to investigate the factors that affect the adoption of mobile phones by consumers for communication, advertising and marketing purposes. The attitude towards mobile marketing and social norms was found to be associated with the behavioural intention to use mobile marketing services.

2.8.2 Technology Acceptance Model (TAM)

The TAM was derived from the TRA. It focuses on ease of use and usefulness. It has been used to explain technology adoption in various contexts (Vijayasarathy, 2004). TAM is an efficient

model which explains a consumer's intension to use a specific product or service (Vijayasarathy, 2004). This model puts forward the idea that usefulness and ease of use of a technology influence the user's intention to use the technology (Teo and Pok, 2003; Luarn & Lin, 2005; Bruner & Kumar, 2005). Usefulness is how functional the user thinks the technology is when being used. Ease of use is the extent to which the user thinks the technology is simple to use (Venkatesh & Davis, 2000; Bruner & Kumar, 2005). Figure 5 shows the major constructs of the TAM.

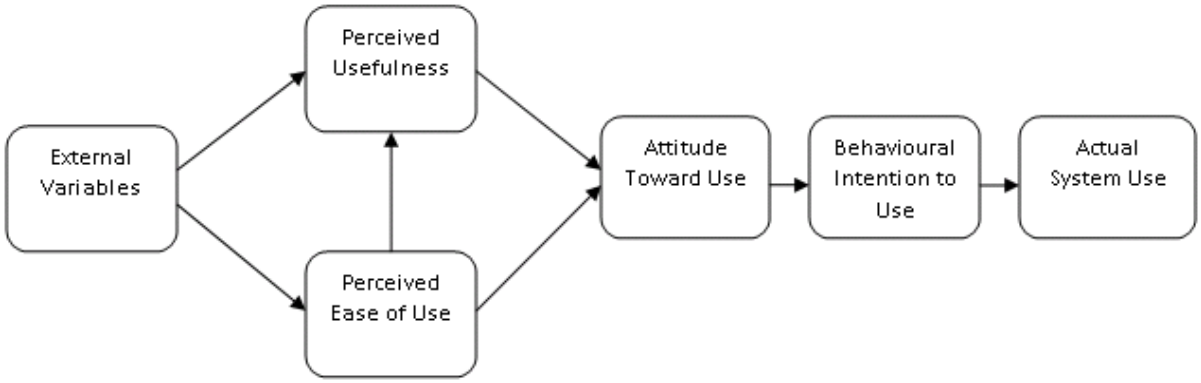


Figure 5: Technology Acceptance Model (Davis et al., 1989)

Over time, TAM has been modified or extended to further investigate a variety of problem statements in different fields of study (Vijayasarathy, 2004). TAM was used to explain consumer intention to use on-line shopping (Vijayasarathy, 2004). In the 2004 study by Vijayasarathy, other factors such as compatibility, privacy, security, normative beliefs, and self efficacy were incorporated in the original TAM. It concluded that Compatibility, usefulness, ease of use, and security were significant to the intention to use on-line shopping (Vijayasarathy, 2004).

2.8.3 Theory of Planned Behaviour (TPB)

The TPB is an extension of the original TRA model which includes the two TRA constructs of attitude and subjective norm with perceived behavioural control (Armitage & Conner, 2001). This is shown in Figure 6. TPB was introduced to overcome the limitations posed by the TRA model. The original TRA model did not address incomplete choice issue therefore it could not be employed in instances where users did not have complete control over the situation posed by the TRA model (Ajzen, 1991).

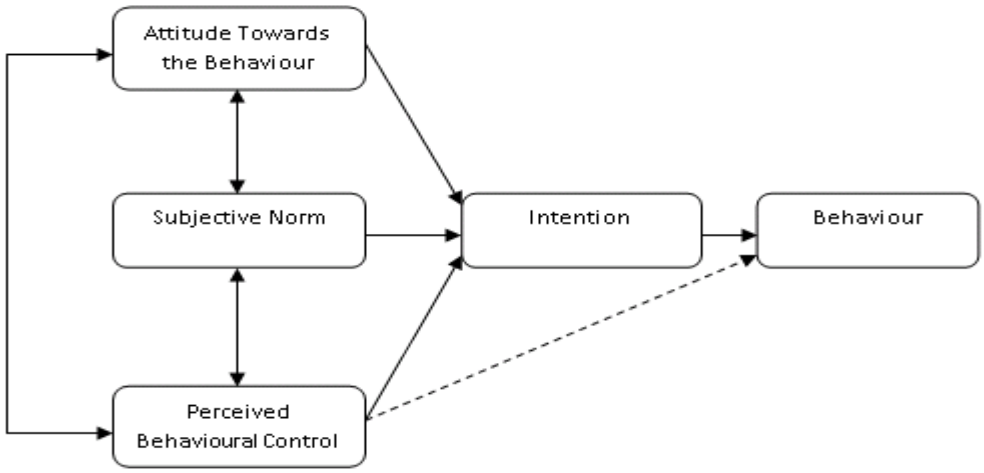
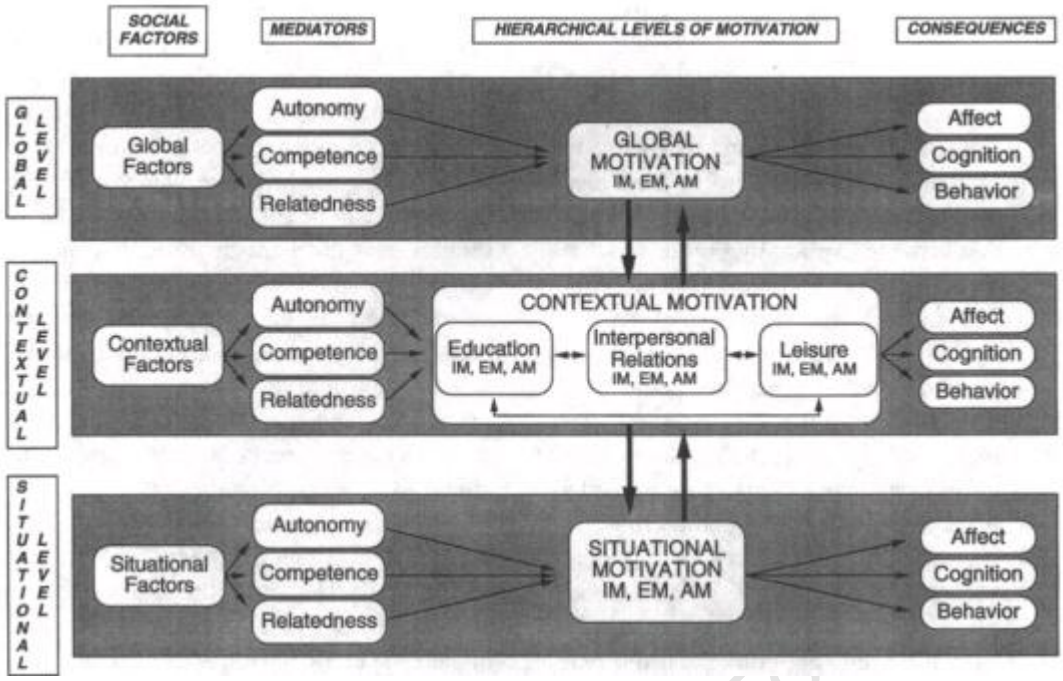


Figure 6: Theory of Planned Behaviour (Ajzen, 1991)

The perceived behavioural control construct has much significance in the behavioural intention of the TPB model. The model was employed by Teo & Pok, in the 2003 study of the adoption of WAP-enabled mobile phones among internet users. The study found out that attitude towards use and social factors were both significant in influencing intentions to adopt a WAP-enabled mobile phone (Teo & Pok, 2003).

2.8.4 Motivational Model (MM)

There are two dimensions of motivation namely intrinsic and extrinsic motivations (Vallerand, 2000). Intrinsic and extrinsic motivation can act together thereby having a joint significant effect on the user's intention to use (Venkatesh & Speier, 1999). The motivational model is shown in Figure 7.



IM = Intrinsic Motivation, EM = Extrinsic Motivation, AM = A motivation

Figure 7: Motivational Model (Vallerand, 2000)

This theory was tested by investigating the hierarchical model proposed by Vallerand in 1997, along with factors from the achievement goal theory of dropouts in sport (Sarrazin, Vallerand, Guillet, Pelletier & Cury, 2002).

2.8.5 Innovation Diffusion Theory (IDT)

The concepts of IDT are innovation and diffusion (Rogers, 2002). Diffusion has four different aspects- innovation, communication, time and the social system (Rogers, 2002). The processes of Innovation in the diffusion of technology are:

Knowledge - having the understanding of how the technology works.

Persuasion – the influencing the factor which determines attitude towards the technology.

Decision – having the choice to adopt or reject the technology.

Implementation – making use of the technology

Confirmation – assessing the result of using the technology (Rogers, 2003). These are illustrated in Figure 8.

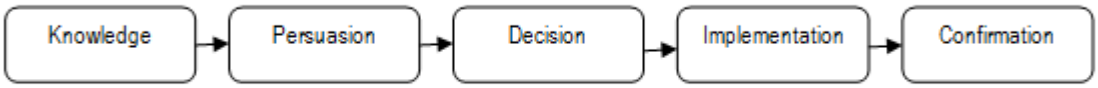


Figure 8: Innovation Diffusion Process (Rogers, 2003)

There are five main characteristics of innovation diffusion that influence the adoption of an innovations. These are relative advantage, compatibility, complexity, trialability and observability (Clarke, 1999; Rogers, 2002).

2.8.6 Model of PC Utilisation (MPCU)

Model of PC utilisation (MPCU) was developed from the theory of human behaviour by Triandis (1980). The model was modified and used in the information systems field by Thompson, Higgins & Howell (1991). The theory was applied to the use of personal computers (PC). Six factors were found to influence the utilisation of PCs, these were the social factors, effects, perceived consequences and the facilitating conditions on behaviour (Thompson et al., 1991). This is shown in Figure 9.

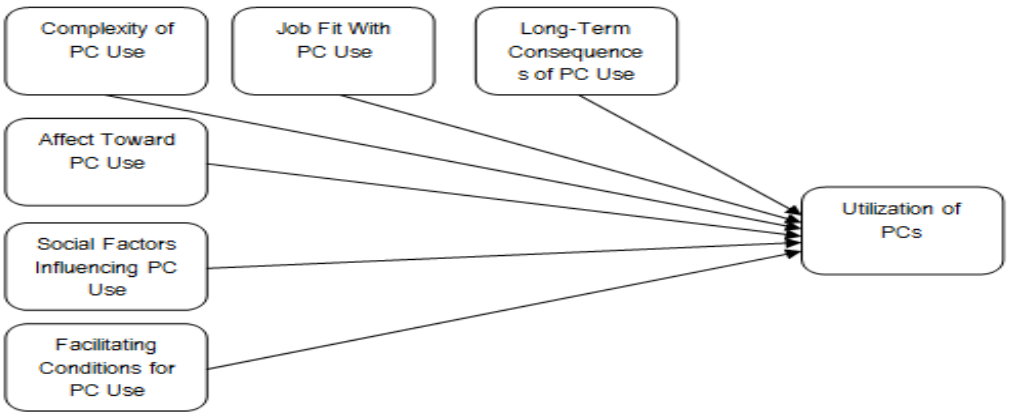


Figure 9: Factors Affecting Utilisation of Personal Computers – Adapted from Model Proposed by Triandis (1980) (Thompson et al., 1991)

2.8.7 Combined TAM and TPB (C-TAM-TPB) Model

Combined TAM and TPB integrates the perceived usefulness construct of TAM with the TPB model (Taylor & Todd, 1995). Its major constructs are: Attitude towards behaviour, subjective norm, perceived behavioural control and perceived usefulness (Venkatesh, Morris, Davis & Davis, 2003).

2.8.8 Social Cognitive Theory (SCT)

The social cognitive model is the use of "*psychosocial functioning in regards to triadic reciprocal causation*" (Bandura, 1986 as Cited in Wood & Bandura, 1989). This model explains the reciprocal determinism, behaviour, cognitive and other factors such as environmental events that might act as interacting determinants and influencing factors on the user. The Social cognitive theory is

illustrated in Figure 10.

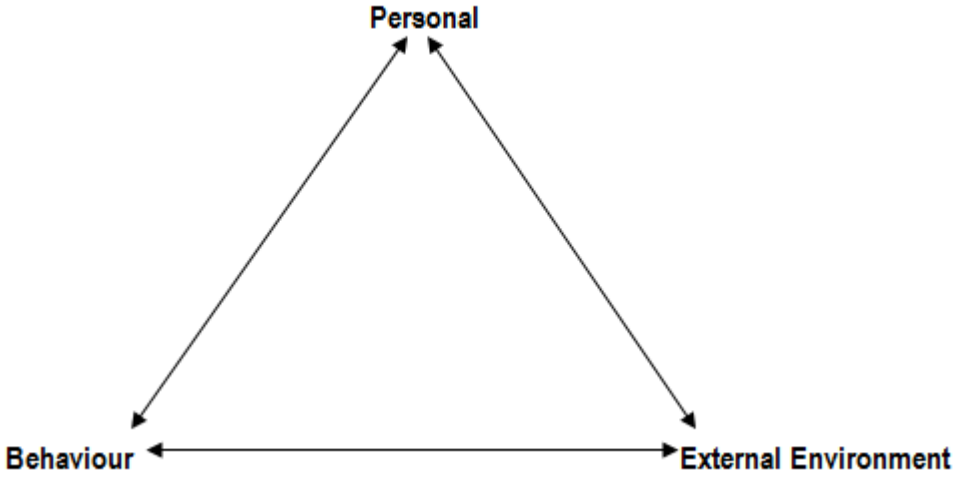


Figure 10: Diagram of Relationship between Behaviour, Personal Factors and External Environment (Bandura, 1989)

2.8.9 Unified Theory of Acceptance and Use of Technology (UTAUT) Model

The UTAUT model is an integration of eight IT adoption models (all which have been reported above). It has been reported to have better performance than the above mentioned models. The advantage of UTAUT model is that it incorporates moderating factors such as gender, age, experience and voluntariness of use (Min et al., 2008). The major constructs are explained as follows:

- **Performance Expectancy** - is defined as the extent to which users believe the use of the technology provides a good or higher performance (Venkatesh et al., 2003).
- **Effort Expectancy** – is defined as the degree of ease linked with the use of a technology (Agarwal, Rastogi & Mehrotra, 2009).
- **Social Influence** – is defined as the extent to which the user feel others believe the new technology should be used (Venkatesh et al., 2003; Agarwal et al., 2009)
- **Facilitating Conditions** – is the extent to which the user believes there is infrastructural or organisational support for the use of the technology (Agarwal, et al., 2009).

The model is shown in Figure 11.

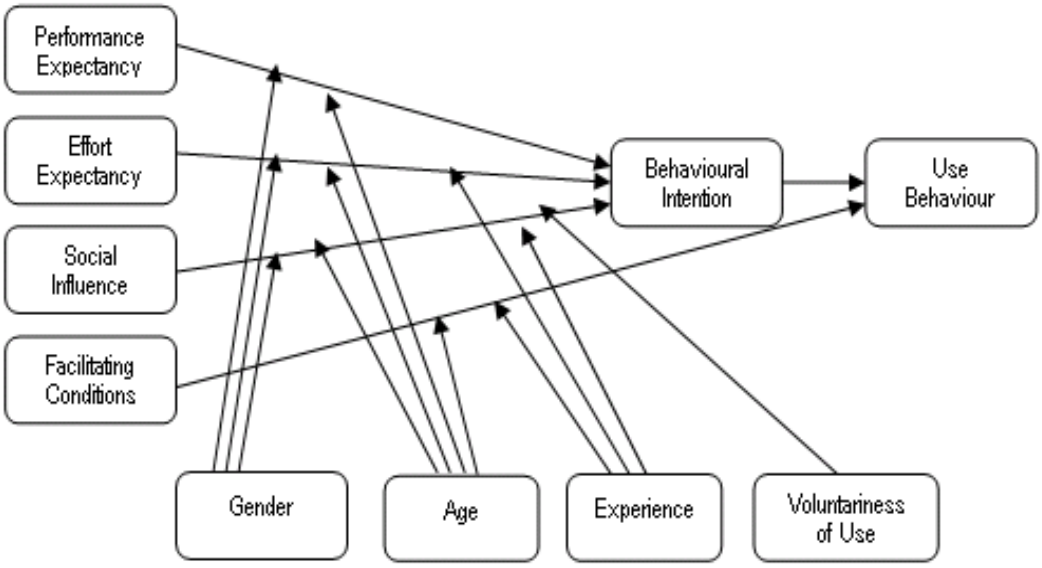


Figure 11: UTAUT Model (Venkatesh, Morris, Davis & Davis, 2003)

Previous studies have tested the model and it was found that dependent variance accounted for 70% of intention to use (Marchekwa, Liu & Kostiwa, 2007; Min et al., 2008). The major constructs of UTAUT are performance expectancy, effort expectancy, social influence and facilitating conditions. The integration of various IT sub-constructs form the UTAUT constructs (Wu, Tao & Yang, 2008; Oshlyansky, Cairns, & Thimbleby, 2007; Alawahdi & Morris, 2008). These are shown in Table 4.

Table 4: Determinants of UTAUT Model (Wu, Tao & Yang, 2008)

UTAUT Construct	Sub-Construct	Source of Integrated Model
Performance Expectancy	Perceived Usefulness	TAM/TAM2/C-TAM-TPB
	Extrinsic Motivation	MM
	Job Fit	MPCU
	Relative Advantage	IDT
	Outcome Expectations	SCT
Effort Expectancy	Perceived Ease of Use	TAM/TAM2
	Complexity	MPCU
	Ease of Use	IDT
Social Influence	Subjective Norm	TRA, TAM2, TPB/DPTB, C-TAM/TPB
	Social Factors	MPCU
	Image	IDT
Facilitating Conditions	Perceived Behavioural Control	TPB/DTPB, C-TAM-TPB
	Facilitating Conditions	MPCU
	Compatibility	IDT

2.8.10 Revised Unified Theory of Acceptance and Use of Technology Model

The revised UTAUT framework proposed by Min et al. (2008) is an extension of the UTAUT model. Utility expectancy and effort expectancy represents "perceived usefulness" and "perceived ease of use" of the TAM model. The revised UTAUT model incorporates "information satisfaction" and "system satisfaction" as part of its main constructs. This along with "trust and privacy", "cost and convenience", "user demographics" and "culture" made the revised UTAUT model more suitable for user acceptance of m-commerce applications (Min et al., 2008). Revised UTAUT model shown in Figure 12 is more suitable for use in this study since it includes the factors which are bound to affect the users of m-banking applications and it also incorporated culture as a factor.

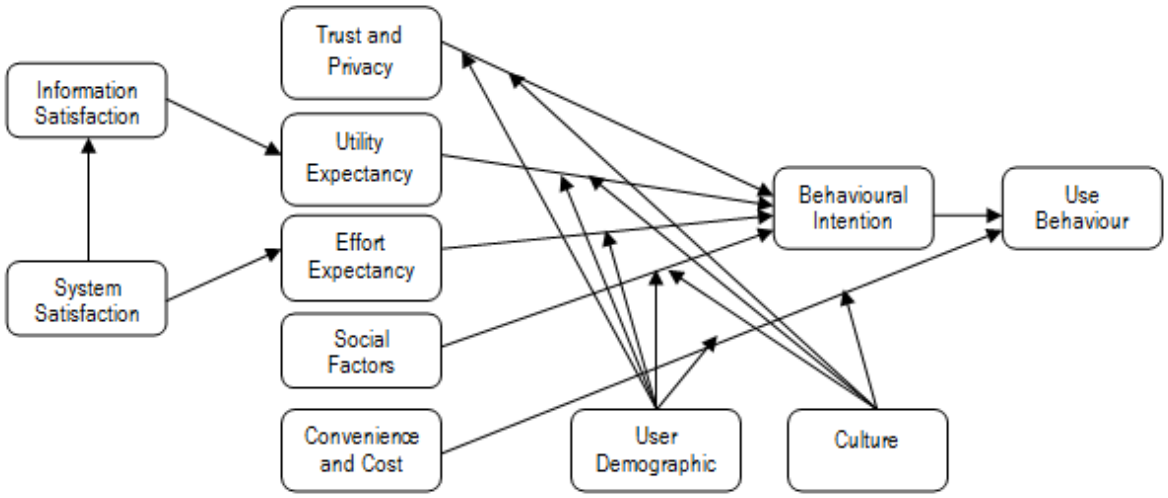


Figure 12: Revised UTAUT Model (Source: Min et al., 2008)

2.9 Introducing National Culture as a Construct

Culture is a collective phenomenon that accounts for the reasoning exhibited or shared by all the members of a group (Merchant, 2007; Hofstede, 1997, p.5). It is also the morals, rules and traditions that form our behaviour and perception of the world (Merchant, 2007). Several studies have shown that the adoption of IT is culturally inclined (Bagchi, Cerveny, Hart & Peterson, 2003; Min et al., 2008). In literature, there are different classifications of culture; two of which are: national (Hall, 1976; Hofstede, 1980; Bagchi et al., 2003; Wei, Stankosky, Calabrese & Liu, 2008), organisational (Schein 1985; Hofstede, Neuijen & Ohavy, 1990; Trompenaars & Hampden-Turner, 1998).

Numerous cross-cultural studies have been conducted in the field of international busines however such researches into m-commerce applications for instance, m-banking are relatively

rare (Harris, Rettie & Kwan, 2005). The dimensions of national culture are integrated as constructs into IT adoption researches and in various technology adoption models (Straub, Keil & Brenner, 1997; Zakour, 2004; Merchant, 2007). Previous studies have employed the unique properties of national culture to explore its impact on the user behaviour and adoption in different countries (Harris et al., 2005; Min et al., 2008). It has been verified from previous empirical studies that culture as a moderating factor, can affect the level of significance of both independent and dependent variables (Straub et al., 1997; Zakour, 2004; Srite & Karahanna, 2006; Min et al., 2008). Studies into the impact of organisational culture on technology acceptance have provided interesting results. However, the effect of the dimensions of national culture on IT adoption creates a new aspect of research (Straub et al., 1997).

2.10 Dimensions of National Culture

Researches in the Information Systems field employ Hofstede's dimensions of national culture. National culture has four dimensions namely individualism/collectivism, power distance, uncertainty avoidance and masculinity/femininity, (Hofstede, 1997 as cited in Zakour, 2004).

2.10.1 Individualism and Collectivism (IDV)

Individualism refers to the degree to which people are socially integrated (Hofstede, 1980; Bagchi et al., 2003, Wei et al., 2008). Individualism portrays a society where there are no strong ties between individuals (Wei et al., 2008). In a high individualism society, people of that culture are more inclined to making individual or personal choices as opposed to group or collective decisions (Bagchi et al., 2003). In a low individualism society, people of that culture have tightly bonded relationship to a group, in which decisions are made collectively (Hofstede, 2001; Bagchi et al., 2003). Low individualism nations favour collectivism which is the show of a strong and continuous pattern of interdependence within that society (Bagchi et al., 2003).

2.10.2 Power Distance (PD)

Power distance is the degree to which less powerful members of a group or institution believe and expect that power is not distributed equally (Wei et al., 2008; Hofstede, 1980). It measures how the less powerful members interpret inequality in a society. This implies that a society's measure of inequality is approved by the followers as much as by the leaders (Wei et al., 2008). A high power distance society means that people of that culture will accept inequalities such as wide wealth and power differences (Hofstede, 2001; Bagchi et al., 2003). A low power distance culture encourages opportunity and equality (Hofstede, 2001). People in a low power distance society find it easier to adopt IT since decision making and participation is more decentralized in such a culture (Bagchi et al., 2003).

2.10.3 Uncertainty Avoidance (UA)

Uncertainty avoidance is the measure to which a society tries to avoid uncertainty and ambiguity in situations (Hofstede, 1980; Bagchi et al., 2003). It refers to the extent to which people in a culture feel threatened by uncertain events or unknown circumstances (Harris et al., 2003). A high uncertainty avoidance society means people of that culture have little or no tolerance for uncertainty and are guided by strict laws, rules, beliefs and security measures (Hofstede, 2001; Wei et al., 2008). A low uncertainty avoidance society portrays people of that culture to be more tolerant of opinions different from theirs; they take greater risks, have few rules and are willing to embrace the opinions of others (Bagchi et al., 2003; Wei et al., 2008).

2.10.4 Masculinity and Femininity (M/F)

Masculinity is a cultural dimension that measures the extent to which people of such a culture exhibit masculine qualities such as assertiveness, material success, affluence, achievement, performance and competition (Hofstede, 2001; Harris et al., 2005; Wei et al., 2008). On the other hand, qualities such as quality of life, maintaining human relationships, service, care for the weak and solidarity are associated with the role of women, and are considered to be feminine in nature (Bagchi et al., Wei et al., 2008). A high masculinity value means people of such a society are driven by the need to show a firm statement about their personality and are more materialistic (Bagchi et al., 2003). A low masculinity value shows that a society has a feminine culture (Straub et al., 1997; Bagchi et al., 2003).

2.11 Summary of Related Studies

The most important factor of implementation of mobile technologies is the user acceptance of the technology (Kijsanayotin, Pannarunothai & Speedie, 2008). In order to identify the underlying factors that influence behavioural intention to use a technology, information systems researchers have proposed different user acceptance models most of which are formulated from social psychology and anthropology theories (Aggelidis & Chatzoglou, 2008). Several studies have been conducted on the user acceptance of mobile technology applications such as m-banking. Below are some relevant studies previously conducted in South Africa and Nigeria:

- Cell phone banking predictors of adoption in South Africa – an exploratory study by Brown, Cajee, Davies & Stroebel (2003).
- Determinants of internet and cell phone banking adoption in South Africa by Brown & Molla (2005).

- Investigating adoption/non-adoption of cell phones for financial transactions in South Africa by Brown, Gordon, Janik & Meyer (2005).
- Understanding use and adoption of mobile data services in two African countries by Ramburn (2007).
- Investigating multi-channel banking adoption in South Africa by Patel (2009)
- Electronic payment systems and tele-banking services in Nigeria by Agboola (2006).
- The adoption of internet banking in Nigeria: an empirical investigation by Chiemeke, Evwiekpaefe & Chete (2006).
- M-Commerce Implementation in Nigeria: trends and issues by Ayo, Ekong, Fatudimu & Adebiyi (2007).

This chapter has revealed several technology adoption models, while Table 5 provides the synopsis of related studies in other countries. It identifies the authors, the year of publication, research objective, research approach and method of data collection.

Table 5: Summary Table of Other Related Studies

No.	Title, authors & year	Research objective	Country	Research approach	Data collection
1.	Modelling the Factors that Influence Mobile Phone Adoption. Van Biljon, J., & Kotzé, P. (2007).	To investigate technology adoption models as a strategy to match mobile phone design	South Africa	Positivistic & Interpretive	Qualitative data (Interviews & questionnaire survey)
2.	SME Adoption of Wireless LAN Technolog6: Applying the UTAUT model. Anderson, J. E., & Schwager, P. H. (2008).	To validate the UTAUT model and provide more understanding of adoption of wireless technologies in SME's.	United States of America	Positivistic	Qualitative data (Survey)
3.	The use of the UTAUT Model in the Adoption of E-government Services in Kuwait. Alawadhi, S., & Morris, A. (2008).	To explore factors that influence the adoption of e-government services in Kuwait	Kuwait	Positivistic & Quantitative approach	Qualitative data (Survey)
4.	The Mobile Commerce Prospects: A Strategic Analysis of Opportunities in the Banking Sector. Tiwari, R., & Buse, S. (2007).	To identify the scope of mobile commerce services in the banking field.	Germany	Positivistic	Quantitative data (Questionnaire Survey)
5.	The Role of Espoused National Cultural Values in Technology Acceptance. Srite, M., & Karahanna, E. (2006).	To incorporate espoused national culture into an extended model of technology acceptance as moderators	United States of America	Positivistic	Quantitative data (Questionnaire Survey)
6.	IT Acceptance in Less Developed Country: A Motivational Factor Perspective. Anandarajan, M., Igbaria, M., & Anakwe, U. P. (2002).	To examine the factors that motivate users to accept technology.	Nigeria	Positivistic	Quantitative data (Questionnaire Survey)

No.	Title, authors & year	Research objective	Country	Research approach	Data collection
7.	Cell Phone Banking: Predictors of Adoption in South Africa - An Exploratory Study. Brown, I., Cajee, Z., Davies, D., & Stroebel, S. (2003).	To examine the factors that influence the adoption of cell phone banking in South Africa	South Africa	Positivistic	Qualitative data (Questionnaire Survey)
8.	A Framework for E-Commerce Implementation: Nigeria a Case Study. Ayo, C., Adebiyi, A. A., Fatudimu, I. T., & Ekong, U. O. (2008).	To explore the prospects of e-commerce implementation and the factors inhibiting its growth,	Nigeria	Positivistic	Qualitative data (Questionnaire Survey)
9.	Toward an Understanding of the Behavioural Intention to use Mobile Banking. Luarn, P., & Lin, H. (2005)	To extend the application of TAM for use on mobile banking.	Taiwan	Positivistic	Qualitative data (Questionnaire Survey)
10.	Adoption and Usage of M-Commerce: A Cross-Cultural Comparison of Hong Kong and the United Kingdom. Harris, P., Rettie, R., & Kwan, C. C. (2005).	To compares m-commerce usage in the United Kingdom and in Hong Kong	United Kingdom	Positivistic & Quantitative approach	Qualitative data (Questionnaire Survey)
11.	Communication platforms in electronic commerce: a three-dimension analysis. Xu, S. X., Yan, X., & Zheng, X. (2008).	To develop a framework for the evaluation of communication platforms in e-commerce and investigating the factors have delayed the development of m-commerce in China.	China	Positivistic & Quantitative approach	Qualitative data (Questionnaire Survey)

2.12 Identified Gaps in Literature

There has been an increase in the banked population in South Africa and Nigeria. Nevertheless, stakeholders in the banking industry have also created innovative services which provide banking services to the unbanked population in both countries, for instance, the MTN Fundamo mobile wallet solution in South Africa, and Glo m-banking services in Nigeria. Ngai & Gunasekaran (2005) stated that the most adopted m-commerce applications are those used for financial purposes, these are m-banking and m-payments services.

Different studies have been conducted in many countries on the adoption of m-banking and other m-commerce applications. These studies adopted different IT adoption frameworks. It was revealed that the user adoption and acceptance of IT is culturally inclined (Srite & Karahanna, 2006, Min et al., 2008).

None of the studies have addressed the user acceptance of m-banking in South Africa and Nigeria. Also, the previous studies omitted culture as a factor that needs to be considered in the acceptance of m-banking across different nations. Okazaki (2005) highlighted several m-commerce research areas one of which was the cross-cultural issues of m-commerce. The indirect effect of national culture on the user acceptance of m-banking has been scarcely explored by researchers. Therefore, this research is aimed at examining the differences/similarities in the use of m-banking in South Africa and Nigeria.

2.13 Summary and Conclusion

This chapter presented an overview of previous studies in this field and the various adoption models that were used for the analysis of IT acceptance. Extensive work has been conducted on the acceptance of IT systems such as m-banking. The literature reviewed showed that the acceptance of IT is associated with the characteristic factors which are unique to each country. However, few comparative studies have been conducted on the user acceptance of m-banking, most especially in African countries.

CHAPTER 3

3 Research Methodology

3.1 Introduction

This chapter reports the methodology, paradigm and theoretical standpoints of the research. The conceptual model and developed hypotheses are introduced. The research questions are restated and the research strategy is explained. The limitations and ethical issues of the data gathering process are also examined in this section.

3.2 Conceptual Model

Previous researches have shown that ICT applications such as m-banking are influenced by different factors one of which is culture (Anandarajan, Igbaria & Anakwe, 2002). Hence, a conceptual model was derived in order to reflect this viewpoint. The conceptual model for this study was drawn from the UTAUT model. Trust, user satisfaction, cost and the dimensions of national culture were also included in the UTAUT model. Min et al. (2008) extended the UTAUT model by replacing performance expectancy with utility expectancy. National culture dimensions were hypothesised to have a direct impact on the core constructs of the UTAUT model. Hypothetical statements and findings from the research works of Zhou et al. (2010), Lee (2009), Luo et al. (2010), Brown & Jayakody (2008), Amin (2008), Gu et al. (2009), Srite & Karahanna (2006), Cody-Allen & Kishore (2006), Carlsson, Carlsson, Hyvönen, Puhakainen & Walden (2006), Brown, Field, Hill & Wessels (2006), Luarn & Lin (2005), Wang & Yang (2005) and Veiga et al. (2001) provided the basis to build this conceptual model. The model in Figure 13 illustrates the hypothesised associations extracted from the above mentioned studies.

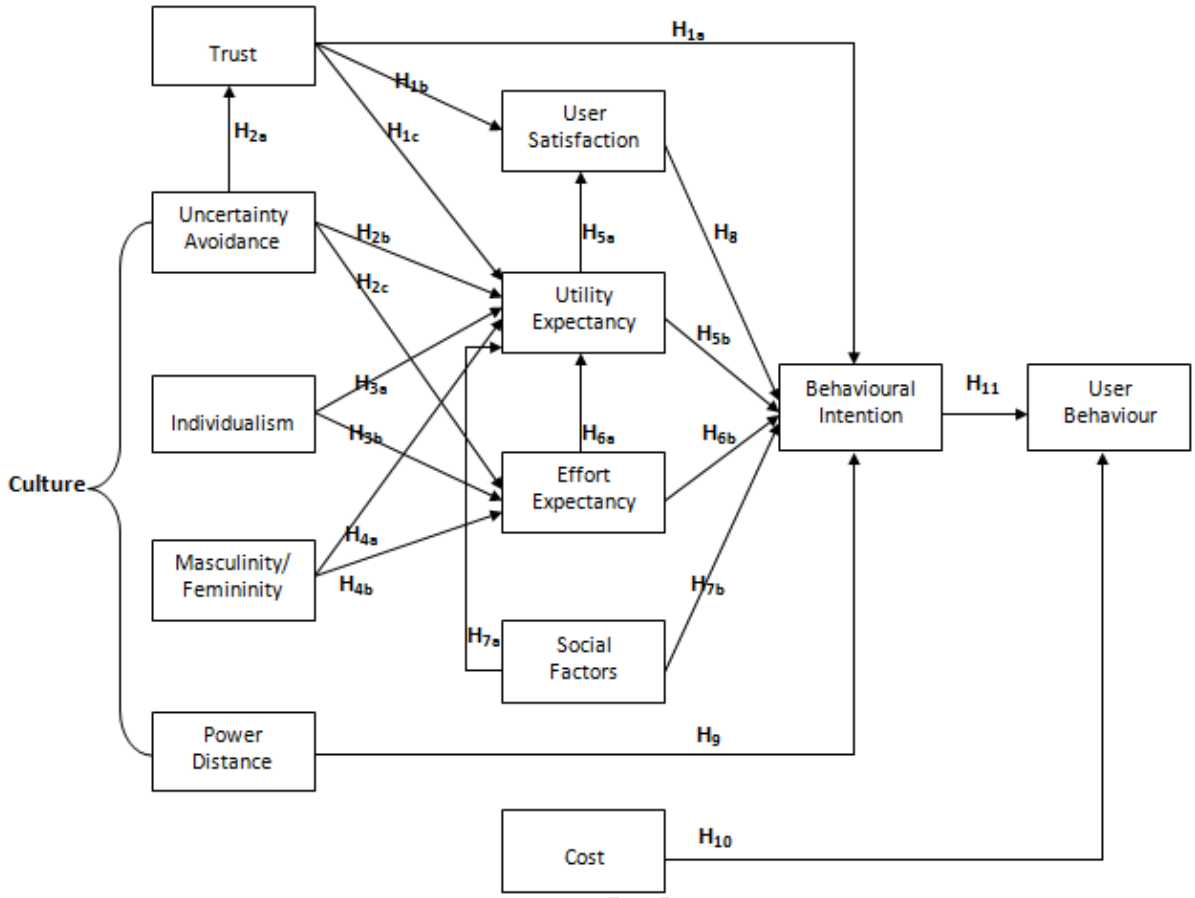


Figure 13: Conceptual Model

3.3 Building the Conceptual Model

Several IT adoption models including the UTAUT model were developed for PC or fixed line systems and technology (Min et al., 2008). The purpose of using a technology, builds the constructs of the adoption model which can determine the user behaviour, (Heijden as cited in Min et al., 2008). Most m-commerce applications are for personal use such as leisure and convenience. The following revisions were made to the UTAUT model (Min et al., 2008).

- Voluntariness of use was considered to be irrelevant for a personally owned mobile device/application (Min et al., 2008). Hence it was discarded.
- Experience was also deemed irrelevant since m-commerce applications are still considered to be quite new to users. However, it should be noted that other factors can be included in the model (Min et al., 2008).

Other major constructs in the model are trust and cost. These constructs are essential in the conceptual model due to the following reasons.

- Cost – the cost of technology is important especially when it is for personal use such as m-banking. A user should be able to afford using it.
- Trust – Trust plays an important role in providing satisfaction and expected outcome for m-commerce users (Li & Yeh, 2010). User trust and privacy including security issues are important in m-commerce applications especially m-banking (Gu et al., 2009). There is a need to build trust in order improve the users' confidence in using m-banking (Li & Yeh, 2010).
- Social Factors – is defined as the degree to which the user feel others believe a technology should be used. These are societal influences from friends or family, which affect the eventual adoption of a technology (Venkatesh et al., 2003; Agarwal et al., 2009)
- User Satisfaction – is defined as the user's attitude towards information systems and its quality. It is the convenience and enjoyment users derive from using a technology (Min et al., 2008).
- Effort Expectancy (Ease of Use) – is defined as the effortless or simple steps of utilisation of a technology (Agarwal, Rastogi & Mehrotra, 2009).
- Utility Expectancy (Usefulness) – Performance expectancy (perceived usefulness) was replaced with utility expectancy. Utility expectancy is the playfulness, satisfaction and improved quality of life that is derived from the use of an m-commerce application such as m-banking (Min et al., 2008).
- Culture – the dimensions of culture have been found to have an indirect impact on the acceptance of information technology (Veiga, Floyd & Dechant, 2001). Srite & Karahanna (2006) and Min et al. (2008) stated that adoption of information technologies is culturally inclined. Therefore culture has been included in this model.

3.4 Hypotheses Development

A null hypothesis (H_0) is returned if there are no significant influences of one construct on another. Moderating constructs have been found to have direct or indirect impact on the level of significance of variables in IT adoption models (Straub et al., 1997; Wang & Yang, 2005; Srite & Karahanna, 2006). Culture has been shown to have an indirect impact on user behavior and adoption of IT (Veiga et al., 2001). This study considers the indirect impact of the dimension of culture on user acceptance of m-banking. In a similar study by Carlsson et al. (2006), it was argued that the use and acceptance of m-commerce applications is on an individual basis. The viewpoint that the acceptance of m-banking is illustrated by the total collective utilisation in a

society does not apply in this study. Thus, the impacts of user demographics as moderating constructs were not considered in this study.

Therefore, the expected associations for this study are stated in the following hypotheses:

1. Trust provides several advantages in the adoption of IT systems. It enhances the usefulness and the intention to use the system (Gefen, Karahanna & Straub, 2003). There is a significant relationship between trust and adoption of m-commerce applications (Cody-Allen & Kishore, 2006; Bhattacherjee, 2002 as cited in Min et al., 2008). Trust contributes to the (utility expectancy) perceived usefulness, the intention to use, and the actual use of an IT system (Brown & Jayakody, 2008; Gu et al., 2009; Luo et al., 2010). Thus the following hypotheses:

H_{1a}: Trust positively influences behavioural intention to use m-banking

H_{1b}: Trust positively influences user satisfaction derived from m-banking

H_{1c}: Trust positively influences utility expectancy of m-banking

2. In high uncertainty avoidance cultures, trust is of great importance when using a new and innovative technology (Brown, Field, Hill & Wessels, 2006; Grabner-Krauter & Kaluscha, 2003). The use of new technologies has been found to be associated with high level of perceived usefulness in high uncertainty avoidance cultures (Hassan & Ditsa, 1999 as cited in Veiga et al., 2001). The usefulness and satisfaction derived reduces insecurities and lack of confidence in m-banking.

High uncertainty avoidance cultures favour technologies that are perceived as simple and easy to use (Hofstede, 2001; Veiga et al., 2001). Therefore, the hypotheses supported are:

H_{2a}: High uncertainty avoidance positively influences trust in m-banking

H_{2b}: High uncertainty avoidance positively influences utility expectancy of m-banking

H_{2c}: High uncertainty avoidance positively influences effort expectancy of m-banking

3. In individualist cultures technology is perceived as useful when it is observed to be beneficial to individuals (Veiga et al., 2001). Therefore, the use of m-banking will be perceived as a convenient and valuable service in an individualist culture. Individualist cultures support the use of personally owned or operated IT systems (Rogers, 1983 as cited in Veiga et al., 2001). Hence, individualist culture will perceive that m-banking is easy to use. Thus the hypotheses:

H_{3a}: Individualism positively influences utility expectancy of m-banking

H_{3b}: Individualism positively influences effort expectancy of m-banking

4. In high masculinity cultures, users exhibit masculine qualities of assertiveness and materialism. The acceptance of a new technology such as m-banking in such cultures is associated with a high degree of the perceived usefulness (Srite & Karahanna, 2006; Wei et al., 2008). High masculinity cultures, also adopt technologies based on the perception that the technology is easy to use (Bagchi et al., 2003; Srite & Karahanna, 2006). Therefore the hypotheses:

H_{4a}: High masculinity positively influences utility expectancy of m-banking

H_{4b}: High masculinity positively influences effort expectancy of m-banking

Perceived usefulness has been found to influence the satisfaction a user derives from the adoption of an IT system (Brown & Jayakody, 2008). The convenience and satisfaction derived from the use of m-banking will influence users' intentions to use and adopt m-banking (Luo et al., 2010; Srite & Karahanna, 2006; Gu et al., 2009; Zhou et al., 2010). Thus, the hypotheses:

H_{5a}: Utility expectancy positively influences user satisfaction derived from m-banking

H_{5b}: Utility expectancy positively influences behavioural intention to use m-banking

5. In circumstances where users feel that m-banking is easy to use and does not require much effort they will have high expectation about acquiring the expected performance (Zhou et al., 2010). Users of m-banking can make convenient payments and reduce the time and effort assigned to banking activities (Carlsson et al., 2006; Srite & Karahanna, 2006; Zhou et al., 2010). Hence the following hypotheses:

H_{6a}: Effort expectancy positively influences utility expectancy of m-banking

H_{6b}: Effort expectancy positively influences behavioural intention to use m-banking

6. Social factors are determinants of perceived usefulness. Users perceive m-banking to be useful when relatives and friends use it and also recommend its use (Gu et al., 2009). The influence of social factors such as the opinions of user's colleagues, friends and relatives will

affect behavioural intention to adopt and use m-banking services (Carlsson et al., 2006; Hong et al., 2008 as cited in Zhou et al. 2010). Thus these hypotheses:

H_{7a}: Social factors positively influence utility expectancy of m-banking

H_{7b}: Social factors positively influence behavioural intention to use m-banking

7. User satisfaction is a determinant of the intention to use e-commerce systems (Bhattacherjee, 2001). Therefore the influence of the satisfaction derived will affect the behavioural intention to use m-banking. Hence, the hypothesis:

H_8: User satisfaction positively influences behavioural intention to use m-banking

8. In high power distance cultures, attitudes towards use of new IT systems are more positive when it is introduced by the higher members of that society (Veiga et al., 2001). Hence, the hypothesis

H_9: High power distance positively influences behavioural intention to use m-banking

9. Cost directly affects user acceptance of m-commerce applications. This factor is relatively significant to the user's behaviour. A lower cost will encourage usage and acceptance of m-banking (Min et al., 2008). Thus the hypothesis:

H_{10}: Cost influences user acceptance of m-banking

10. Behavioural intention has a positive and direct effect on usage of mobile applications and devices (Carlsson et al., 2006). Behavioural intention to use a technology influences the users actual adoption (Cody-Allen & Kishore, 2006).Thus the hypothesis:

H_{11}: Behavioural intention influences user acceptance of m-banking

3.5 Research Paradigm

Information Systems researches are guided by specific research paradigms or philosophical assumptions. The most common is that which relates to the epistemological assumption of researches – the assumption about how knowledge can be obtained (Myers, 2009). Orlikowski and Baroudi (1991) identified three research epistemological assumptions namely: positivist, interpretive and critical. Researchers adopt the epistemological assumption that is appropriate for the study being conducted (Myers, 1997).

The positivist epistemological assumption believes that reality is objective. It poses that its properties are measurable and there are no linkages to the researcher, and/or his instruments (Myers, 2009). The aim of a positivist research is to attempt to validate theory thereby increasing the understanding of a phenomenon (Myers, 1997; Myers, 2009). The Interpretive epistemological assumption believes that reality is achieved only through social constructions such as consciousness, mutual meanings, language and instruments (Myers, 2009). The critical epistemological assumption believes that social reality is historically constituted; it is produced and reproduced by people (Myers, 2009). A critical research it is a social scrutiny which assumes that current social conditions prevents the recognition of enlightenment, emancipation, freedom and justice (Myers, 2009).

This research takes on a positivistic epistemology. The literature review revealed that several studies conducted in this area have adopted positivistic approach (Brown et al., 2003; Luarn & Lin, 2005; Alawadhi & Morris, 2008).

3.6 Approach to Theory

This research adopts an exploratory and deductive approach to theory since the hypotheses were developed from existing literature in the IS field. Previous research has attempted to identify the factors which determine the user acceptance of various mobile/cell phone electronic banking applications by employing different technology acceptance models (theories). However, this study investigates these factors by testing, explaining and comparing the indirect effect they have on the user acceptance of m-banking in two African countries through the use of a conceptualized model.

The two research techniques in IS studies are the qualitative and the quantitative methods. Quantitative research methods are used to study natural phenomena such as mathematical modelling and laboratory experiments. Qualitative research methods assist researchers in studying socio-cultural phenomena (Myers, 2009). Both quantitative and qualitative research methods were employed in the data gathering and analysis processes of this study (Hussey & Hussey, 2003, p.78).

3.7 Research Questions and Objectives Revisited

After reviewing the literature and providing the research methodology, the following research questions and objectives are revisited below.

Questions

- What are the differences and similarities in the acceptance of m-banking in South Africa and Nigeria?
- What are the m-banking services that are most commonly used by customers?
- What factors influences the user acceptance of m-banking?
- What are the emergent factors that further influence the user acceptance of m-banking?
- What are the implications of the use of m-banking in South Africa and Nigeria?

Objectives

- To determine which m-banking services that are used most often by customers.
- To further investigate additional factors that may influence the user acceptance of m-banking.
- To identify the advantages and disadvantages of m-banking in South Africa and Nigeria.
- To validate the hypothesised associations between factors from prior related studies.

3.8 Research Population

This study was aimed at the population of current m-banking subscribers in South Africa and Nigeria. A judgment sampling approach was employed in the selection of the participants for the questionnaire survey and interview in both countries. Each country was targeted to produce 250 participants respectively. The sample population comprised university students and workers from diverse fields of employment. Ten interviews were conducted in each country during January and March 2010. There was a condition which all participants had to fulfil: they must have used at least one m-banking service within the last month.

3.9 Data Collection

Primary data was gathered from the sampled group of individuals through the use of questionnaires and interviews. Questionnaires were distributed to the students and workers from different fields. The questionnaires were also mailed and e-mailed to others within the targeted group who are not nearby and could not be reached physically during the distribution phase. The interview sessions were scheduled according to the time preference of the participants.

3.9.1 Questionnaire Design

This survey was conducted with the aid of questionnaires. The test items for the four cultural dimensions were adapted from Hofstede's (1980) study to suit this research. The remaining test

items were modified from the following relevant studies: Venkatesh (2003), Srite & Karahanna (2006), Marchewka, Liu & Kotsiwa (2007), Brown & Jayakody (2008) and Gu et al. (2009). However, some of the constructs adapted from the Min et al. (2008) study were not operationalised and validated. Therefore, test items were formulated for such constructs from other similar test items in the literature. For instance, utility expectancy was related to performance expectancy and perceived usefulness. The questionnaire can be found in Appendix B. It had the following features.

Questionnaire Structure

Cover letter - A cover letter was attached to the questionnaire introducing the aims of conducting the survey. Appendix A shows a sample of the cover letter.

Simplicity - The questionnaire was structured to have simple close end questions. Open ended questions were only used where it was deemed necessary.

Anonymity - The identity of the survey participants was kept anonymous. No identifiable information such as names, contact phone or address was collected.

The questionnaire was in print form for ease of distribution to the participants. An electronic form of the questionnaire was also maintained which was e-mailed to other participants.

Questionnaire Format

The questionnaire was divived into three parts as follows:

Numerical Data - The options to questions such as age and income were provided through the selection of a numerical range provided in the questionnaire. The options were limited to whole numbers.

Multiple Choice - For each question asked, the participants were required to select options from a list.

Scaled Response - Some of the questions required a scaled response by the participants. Following similar studies of technology adoption by Ramburn (2007), Marchewka et al. (2007), a scaled response of one to seven was employed.

Analysis of the Data

The information gathered from the questionnaires was entered into Microsoft Excel. The South African data was labelled from QS1 to QS220 while the Nigerian data was marked QN221 to QN451. The Excel formatted data was transferred and analysed using Statistica 9 analytical

software tool. The ensuing observations from the analysis were reported and interpreted accordingly.

Questionnaire Limitations

One limitation was that the sample was only representative of a fraction of m-banking users in both countries. Hence, a diverse sample of participants was considered in order to fully represent different users of m-banking. Another limitation was that some questionnaires might not have been completed appropriately. However, a large number was distributed in order to maximise the number of correctly completed questionnaires that were returned.

Assumptions to Questionnaire Design

The key assumption in the questionnaire design is that participants in the survey own a functional bank account, a mobile phone or a similar device. Also, it is assumed that the participants are frequent users of m-banking services.

3.9.2 Interview Design

Semi-structured interviews were conducted to complement the information gathered through the questionnaire survey. The aim of the semi-structured approach was to provide a flexible environment for the interviewees to convey their responses without restraint. It also served as a means of identifying other factors affecting the use of m-banking, which could only be identified by m-banking users.

The interviews in South African were labelled from SA1 to SA10 while the Nigerian interviews were marked NIG1 to NIG10. Each country had six male and four female interviewees. The demographic distributions of the interviewees are shown in Table 6 and Table 7.

Table 6: Demographic Distribution of Interviewees - South Africa

No.	Interview No.	Gender	Age	Marital Status	Income (Rand)	Occupation
1	SA1	Male	31-35	Married	R15001-R20000	Employed
2	SA2	Male	26-30	Single	R10001-R15000	Employed
3	SA3	Male	46-50	Married	R25001-R30000	Employed
4	SA4	Male	41-45	Married	R10001-R15000	Employed
5	SA5	Male	36-40	Married	R15001-R20000	Employed
6	SA6	Male	21-25	Single	< R5000	Student
7	SA7	Female	21-25	Single	< R5000	Student
8	SA8	Female	26-30	Single	R5001-R10000	Student
9	SA9	Female	21-25	Single	< R5000	Student
10	SA10	Female	26-30	Single	R10001-R15000	Employed

Table 7: Demographic Distribution of Interviewees - Nigeria

No.	Interview No.	Gender	Age	Marital Status	Income	Occupation
1	NIG1	Male	31-35	Married	R15001-R20000	Employed
2	NIG2	Male	51-55	Married	R25001-R30000	Employed
3	NIG3	Male	46-50	Divorced	R25001-R30000	Employed
4	NIG4	Male	21-25	Single	< R5000	Student
5	NIG5	Male	26-30	Single	< R5000	Student
6	NIG6	Male	36-40	Married	R15001-R20000	Employed
7	NIG7	Female	21-25	Single	< R5000	Student
8	NIG8	Female	26-30	Married	R10001-R15000	Employed
9	NIG9	Female	31-35	Single	<R5000	Student
10	NIG10	Female	26-30	Married	<R5000	Student

The interviews were carried out in English since it is a common language spoken in both countries. A face-to-face interview session was scheduled with participants in South Africa and Nigeria. The duration of the interview was approximately 30 minutes. The participants were asked some predefined open ended questions which are outlined in Appendix C.

Interview Analysis

The interviews were transcribed into Microsoft Excel spread sheets. This study adopted the thematic analysis research techniques used by Fereday & Muir-Cochrane (2006) to identify the concepts in context from the responses from the interviews. In order to achieve a better understanding of the responses obtained from the interviews, emergent factors were pinpointed by identifying the themes in the responses. Selection criteria were not specified for this procedure, rather the set of interviews were read consecutively and the concepts identified and mapped to the corresponding constructs. For example the theme of the quoted response below deals with the cost associated with using m-banking.

> *"Cost is an influencing factor, for instance the service charge for the mobile banking service that I use from my bank, Intercontinental bank is free but for my other bank, First bank of Nigeria I have to pay five Naira per each SMS alert. I prefer the free mobile banking service from Intercontinental bank."* – [NIG5]

Interview Limitations

The major limitation of the interview is that bias could have been introduced by both the interviewer and the interviewee. In order to prevent this, no leading questions were introduced and the personal views of the interviewer were not mentioned during the interview. Also, the transcribing of the interviews was time consuming.

Assumptions to Interview Design

It is assumed that the interviewees have an understanding of m-banking services. The participants have bank accounts, own a mobile device and use m-banking services. Also, the participants interviewed were assumed to be representative of both countries demography.

3.10 Validation of Instrument

The questionnaire and interview instruments were validated by conducting a pilot study. A sample of participant's representative of the actual research population were interviewed and requested to complete the questionnaire. Some questions were intentionally phrased negatively for simplicity and easy understanding. This established the suitability of the questionnaire and semi-structured interview instruments for this study.

3.11 Research Time Frame

This study employed a cross-sectional time frame. The cross-sectional study time frame is appropriate since the data was gathered within the specific period of time. The idea is to examine the current state of the use of m-banking and suggest an explanation for the acceptance culture of users in South Africa and Nigeria. Therefore, current data on the use of m-banking in both countries were appropriate for this research.

3.12 Ethical Issues

In ensuring the quality and reliability of the data, the questionnaires were checked to ensure that all the sections were properly completed by the participants, and the interviews were also transcribed accordingly. Returned questionnaires which did not conform to the required structure were separated and deem unfit for use in the analysis. The participants were assured of anonymity with regards to their responses in the survey and interviews. The collected data were handled with utmost confidentiality and entered into a pass protected computer system. The ethics and confidentiality issues of research work of this nature are of utmost importance. Therefore, the survey and interview questions were sent for the approval of the Commerce Faculty Ethics in Research Committee of the University of Cape Town.

3.13 Limitations and Assumptions to Data Gathering

The selected participants in this study represented a fraction of m-banking users and it is assumed that the chosen sample of participants is representative of the major users of m-banking applications. A considerable amount of time is needed for the collection of data from Nigeria. This study is based on the assumption that the situation in the terms of culture, cost, privacy issues, trust issues and user demographics in these two countries will be different.

3.14 Summary of the Research Process

The progressive stages from the commencement to the conclusion of this research are summarised in Figure 14.

Figure 14: Research Process Diagram

Each stage of this study has provided a vital contribution to the actual execution of the research. The motivation, problem statement, purpose and justification of the research were identified in the first stage. An extensive examination of the literature was presented. The research design explained the methods and approach employed in the study. The research proposal and instruments were sent for the ethics approval. The actual data gathering was preceded by a pilot study. The transcribed interviews and the quantitative data were both analysed. The findings of the researches were reported. Limitations of the study were identified and areas for further research were also reported. Finally, recommendations and conclusions were presented from the findings of the research.

3.15 Summary and Conclusion

The research methodology provides the approach to this study. It presents the research paradigms, questions and hypotheses suitable for an m-commerce study in the information system field. This is a unique study since it addresses one of the infrequently researched areas of m-commerce (i.e. cross-cultural issues in m-commerce). Therefore, the methodology designed for this research is focused on the concepts from several related studies and the indirect impact of culture on the acceptance of m-banking. This methodology presents an insight into the research approach and the design instruments used for conducting this study.

4 Analysis of M-Banking Usage

4.1 Introduction

This chapter describes the comparative analysis performed on the South African and Nigerian data sample. Section 4.1 compares the demography of the South African and Nigerian data samples by examining the relationship between the gender, age, marital status, income and occupation. Section 4.2 provides the frequency of use of m-banking services in both countries. Sections 4.3 present the reliability test for the data sample and the validity of constructs in the Min et al. (2008) model. Section 4.4 provides the descriptive statistics of the data sample.

4.2 Demographic Analysis

A total of 451 responses were received from the sampled population of both countries. South Africa provided 220 responses, while Nigeria generated 231 responses. User demographic - gender, age, marital status, income and occupation are factors which has an effect on the user acceptance of m-commerce (Okazaki, 2005). Therefore the demographic status mentioned above, was used in this study.

4.2.1 Gender Distribution

The gender distributions of the data samples from both countries are similar. Of the 220 South African data samples, 88 (40%) are from female participants while 132 (60%) are from males. The Nigerian data sample consists of 231 data samples of which 91(39%) are from females and 240 (61%) are from males. The gender distributions of data gathered in both countries are similar since both have a female to male ratio of approximately two to three (i.e. 2:3). The imbalances in gender distribution in both countries were due to low number of females in the sampled population. This is shown below in Figure 15.

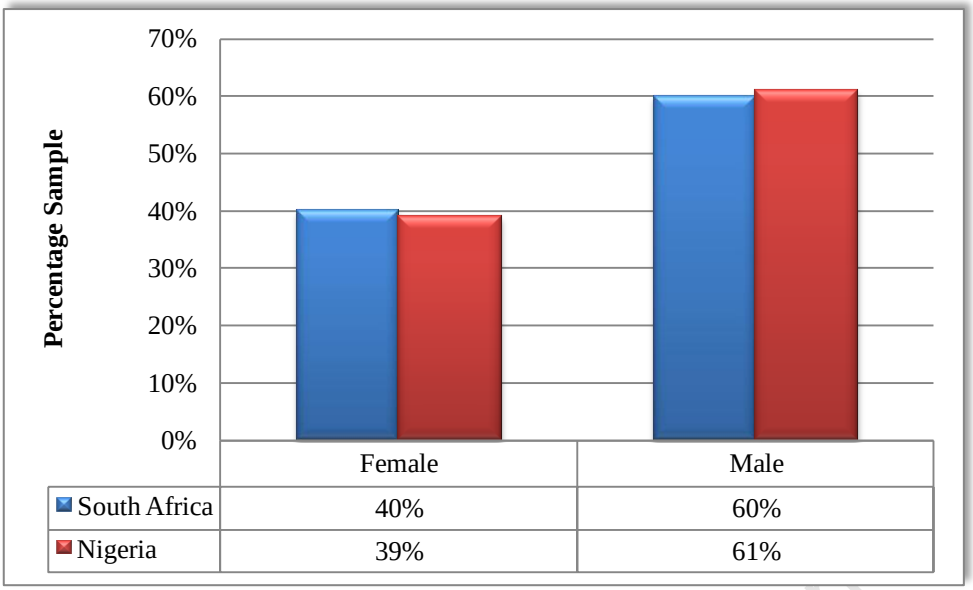
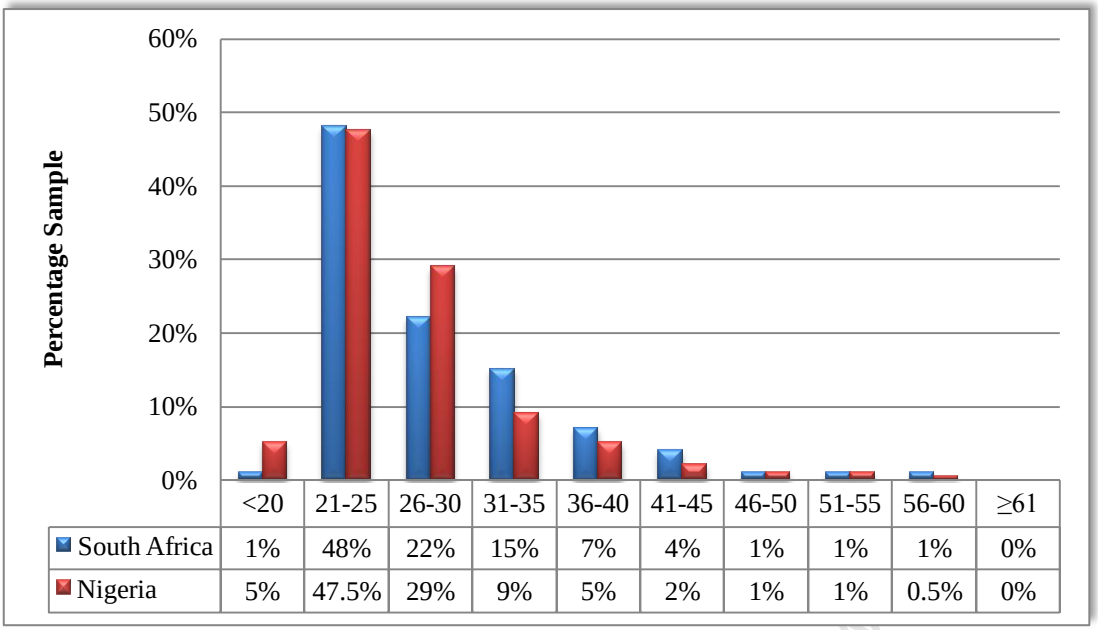


Figure 14: Gender Distribution

4.2.2 Age Group Distribution

The largest age group in the South African data sample was that of 21-25 years (48%) followed by those of 26-30 years (22%). The largest group in the Nigerian data sample was also 21-25 years (47.5%) followed by 26-30years (29%). Participants younger than 20 years of age were not largely represented. This was due to the condition that participants must have a bank account and be subscribed to m-banking services. Participants aged 30 years and younger were highly represented. The South African sample had a total of 71% while Nigeria had 81.5%. Judging from the graphical illustration of the participants, the ages least represented in the sampled data of both countries were those older than 40 years. There are no particular explanations for this observation. The age group distribution is shown in Figure 16.

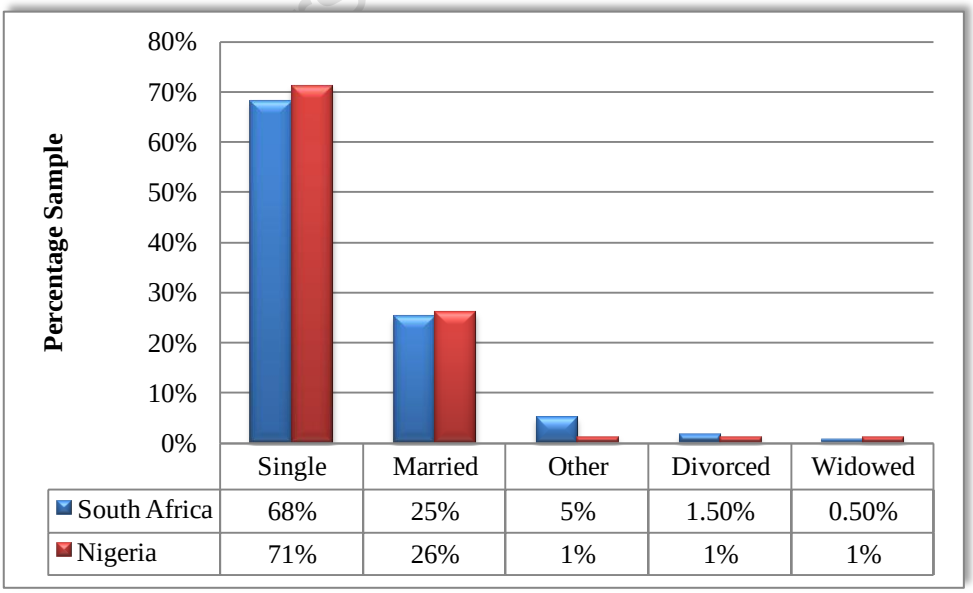


	<20	21-25	26-30	31-35	36-40	41-45	46-50	51-55	56-60	≥61
South Africa	1%	48%	22%	15%	7%	4%	1%	1%	1%	0%
Nigeria	5%	47.5%	29%	9%	5%	2%	1%	1%	0.5%	0%

Figure 156: Age Group Distribution

4.2.3 Marital Status Distribution

A total of 150 (68%) of the South African sample and 164 (71%) of the Nigerian data sample were single. The large number of single participants supports the age group of the distribution of the samples since majority of the participants are age 30 years and younger. The married participants in South Africa and Nigeria are 55 (25%) and 60 (26%) respectively. This is shown in Figure 17.

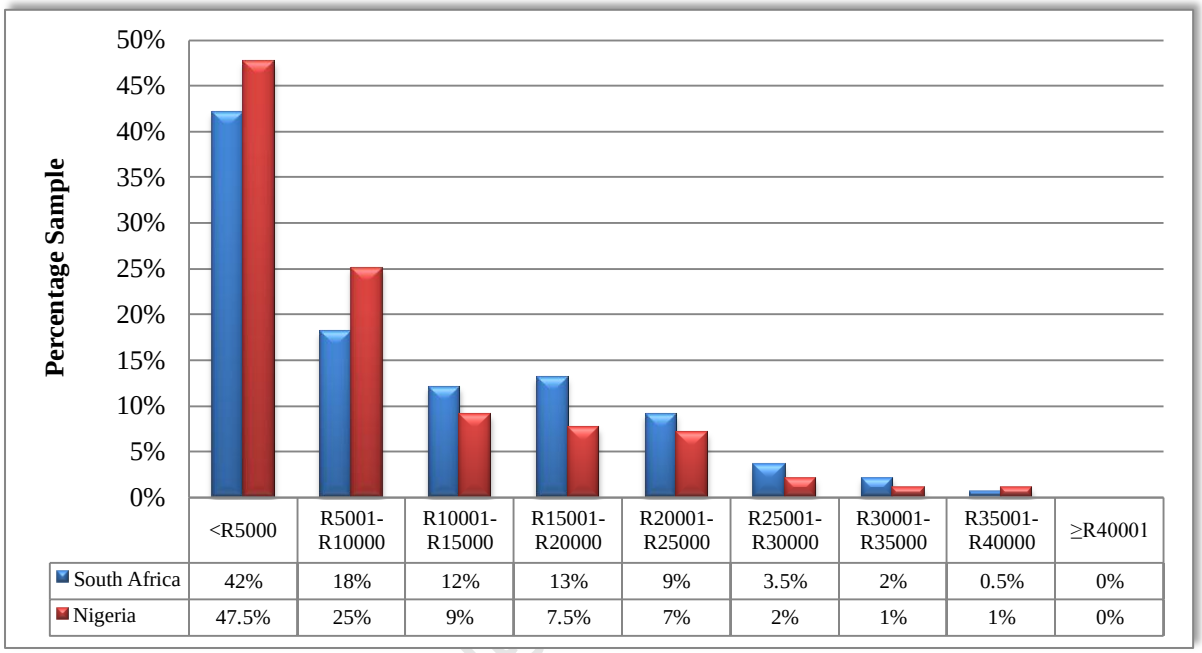


	Single	Married	Other	Divorced	Widowed
South Africa	68%	25%	5%	1.50%	0.50%
Nigeria	71%	26%	1%	1%	1%

Figure 17: Marital Status Distribution

4.2.4 Income Distribution

Judging by the monthly income, the largest group of participants from both countries earned less than 5000 rand a month: the South African sample recorded 93 (42%) while the Nigerian sample was 109 (47.5%). These percentages are accounted for by the student population and unskilled workers who earn minimum wages in both countries. It should however be noted that the Nigerian currency – naira, has been converted to rand. The standard exchange rate is one rand to twenty naira. Figure 18 shows the income distribution of the samples.



	<R5000	R5001-R10000	R10001-R15000	R15001-R20000	R20001-R25000	R25001-R30000	R30001-R35000	R35001-R40000	≥R40001
South Africa	42%	18%	12%	13%	9%	3.5%	2%	0.5%	0%
Nigeria	47.5%	25%	9%	7.5%	7%	2%	1%	1%	0%

Figure 168: Income Distribution

The occupational distribution consists of students and workers from diverse fields of employment. The South African and Nigerian student distribution are 56% and 45% respectively, while that of the employed are 44% and 55%. There are more employed participants in the Nigerian sample, while there are more students in the South African sample. This is illustrated in Figure 19.

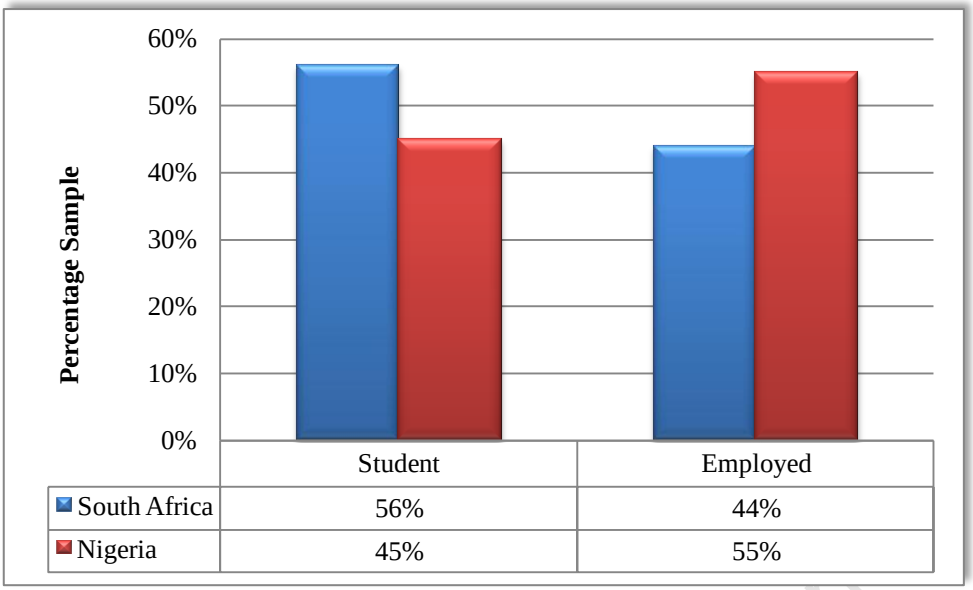
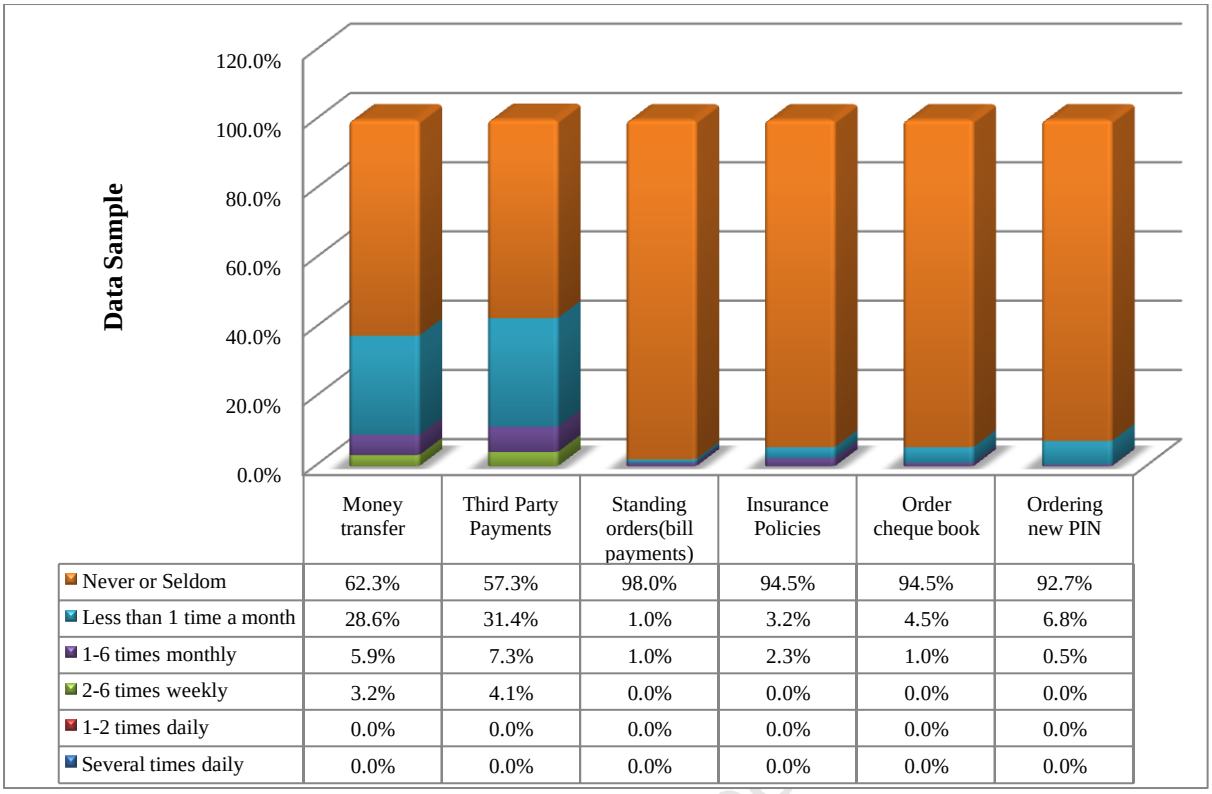


Figure 19: Occupation Distribution

4.3 M-Banking Services Usage

4.3.1 Mobile Accounting Usage in South Africa

The usage of money transfer and third party payments services were widely distributed in the frequency of use section of the survey. The number of participants that use money transfer and third party payments 2-6 times weekly are 7 (3.2%) and 9 (4.1%) respectively. This is shown in Figure 20.

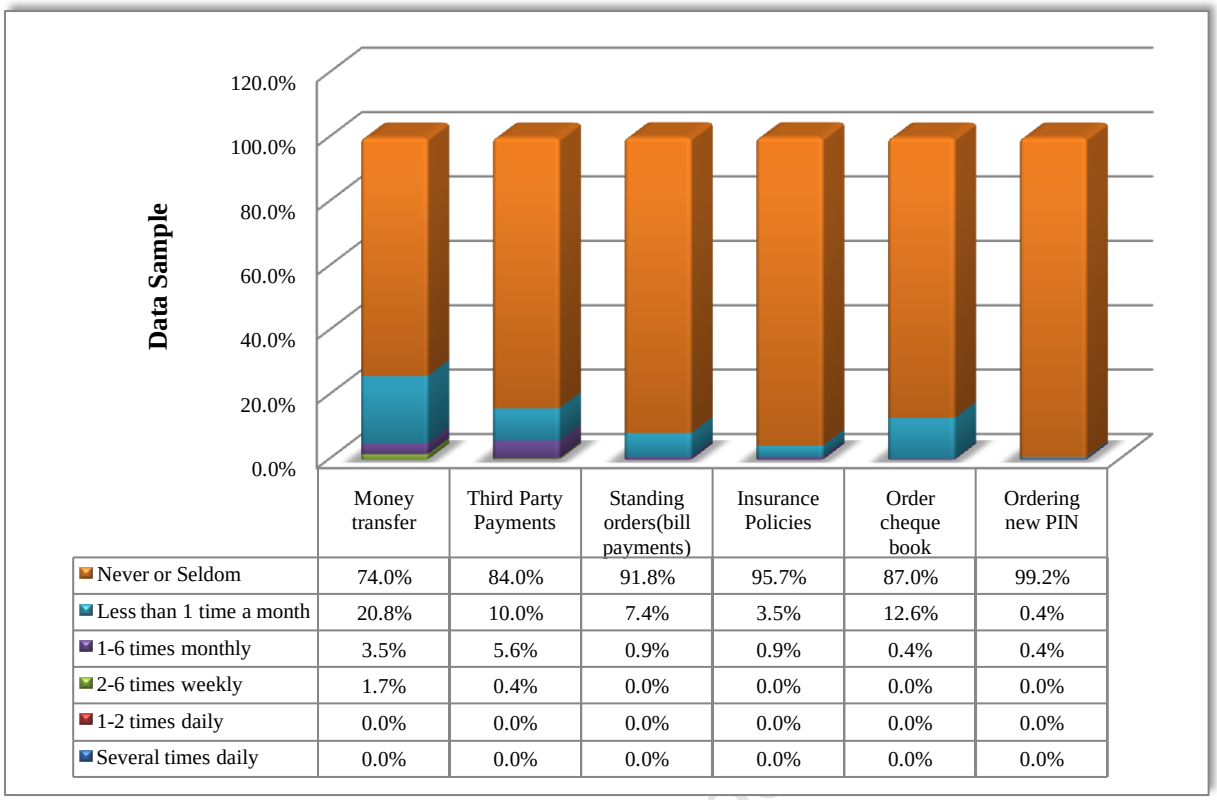


	Money transfer	Third Party Payments	Standing orders(bill payments)	Insurance Policies	Order cheque book	Ordering new PIN
Never or Seldom	62.3%	57.3%	98.0%	94.5%	94.5%	92.7%
Less than 1 time a month	28.6%	31.4%	1.0%	3.2%	4.5%	6.8%
1-6 times monthly	5.9%	7.3%	1.0%	2.3%	1.0%	0.5%
2-6 times weekly	3.2%	4.1%	0.0%	0.0%	0.0%	0.0%
1-2 times daily	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Several times daily	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%

Figure 20: Mobile Accounting Usage in South Africa

4.3.2 Mobile Accounting Usage in Nigeria

Of all the Nigerian participants, 48 (20.8%) use money transfer, 23 (10%) third party payments, 17(7.4%) standing orders (bill payments), 8 (3.5%) insurance policies and 29 (12.6%) order a cheque book, less than one time a month. Only 5 (2.1%) use any of the mobile accounting services 2-6 times weekly and this is distributed between money transfer, 4 (1.7%) and third party payments, 1 (0.4%). This is shown in Figure 21.

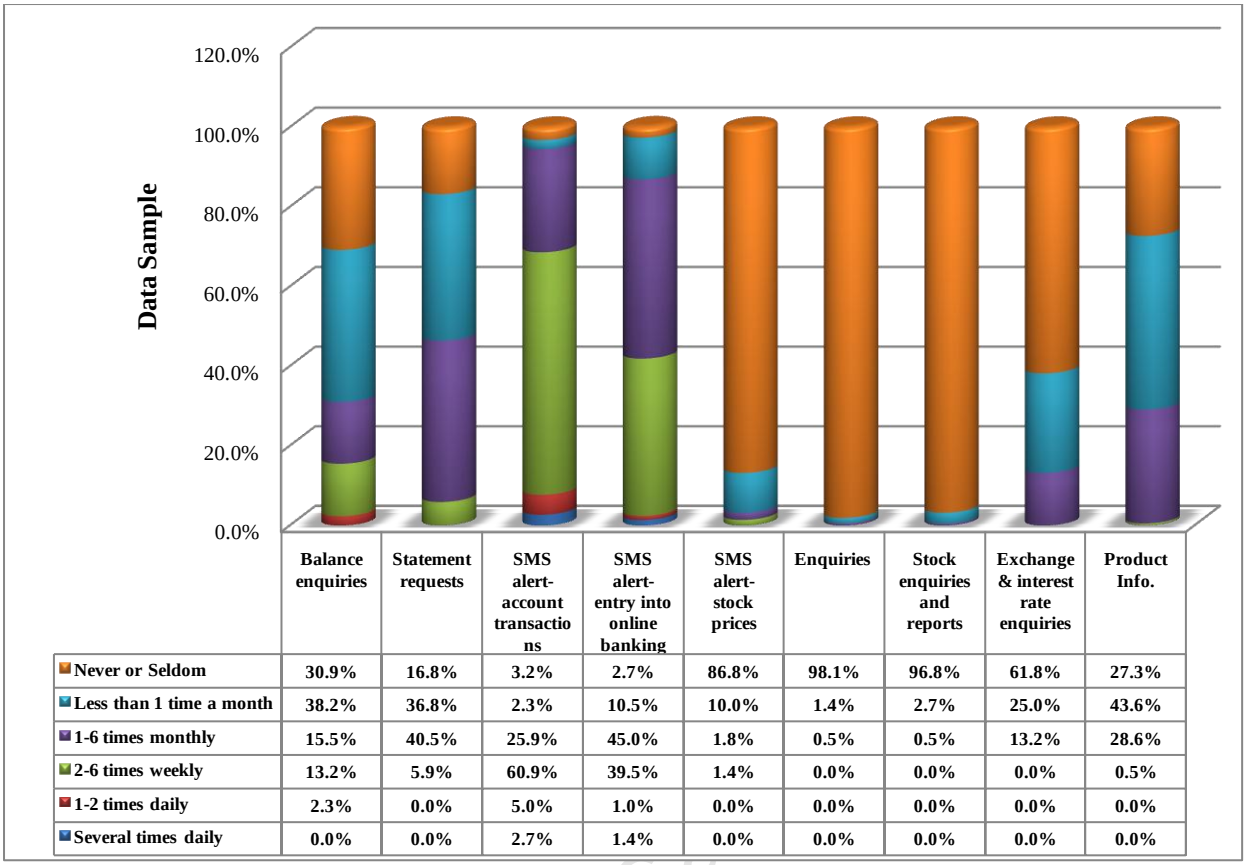


	Money transfer	Third Party Payments	Standing orders(bill payments)	Insurance Policies	Order cheque book	Ordering new PIN
Never or Seldom	74.0%	84.0%	91.8%	95.7%	87.0%	99.2%
Less than 1 time a month	20.8%	10.0%	7.4%	3.5%	12.6%	0.4%
1-6 times monthly	3.5%	5.6%	0.9%	0.9%	0.4%	0.4%
2-6 times weekly	1.7%	0.4%	0.0%	0.0%	0.0%	0.0%
1-2 times daily	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Several times daily	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%

Figure 21: Mobile Accounting Usage in Nigeria

4.3.3 Mobile Financial Information Usage in South Africa

Of the 220 samples, SMS alert for account transactions had a total of 208 (94.5%) and SMS alert for entry into online banking, a total of 191 (86.8%) participants using it on a 1-6 times monthly basis. SMS alert for stock price was less used by the participants; about 191 (86.8%) never or seldom use it. 84 (38.2%) participants use balance enquiries and 81 (36.8%) statement requests in less than once a month. Figure 22 shows the mobile financial usage in South Africa.

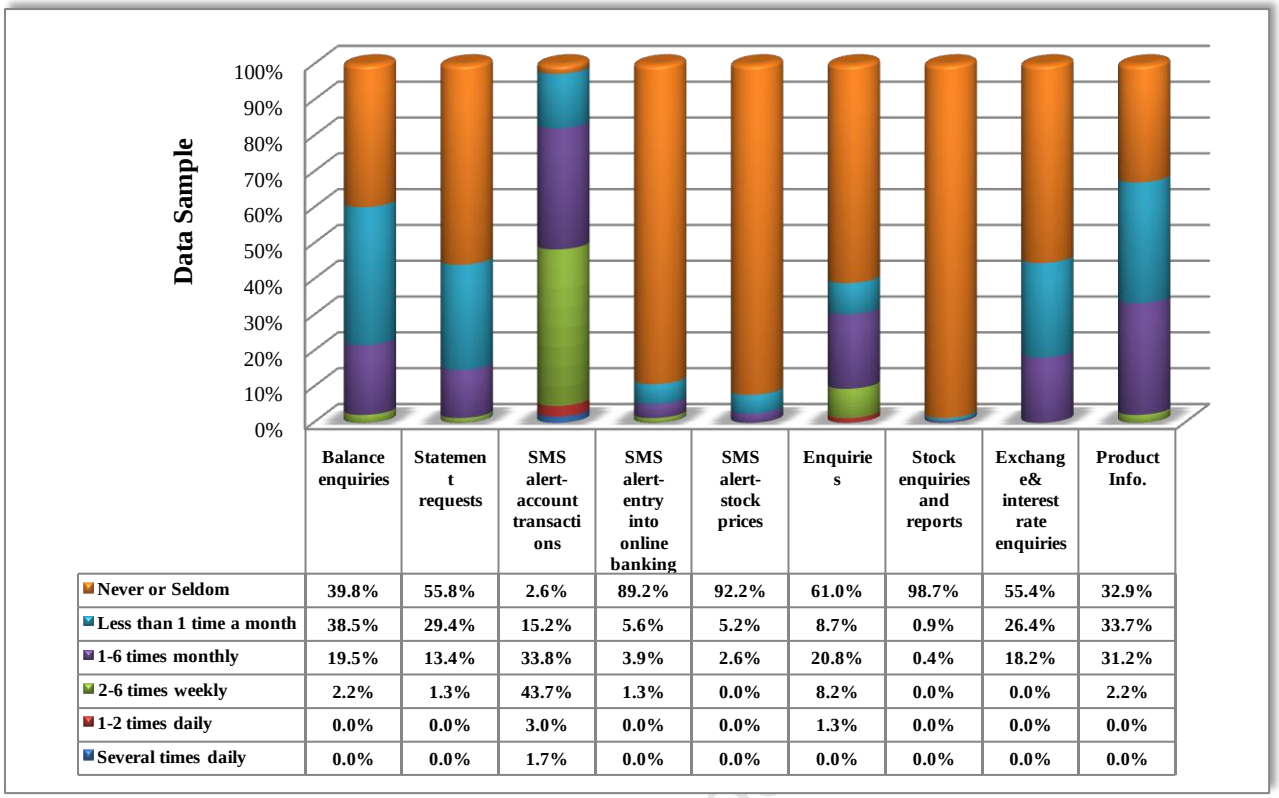


	Balance enquiries	Statement requests	SMS alert-account transactions	SMS alert-entry into online banking	SMS alert-stock prices	Enquiries	Stock enquiries and reports	Exchange & interest rate enquiries	Product Info.
Never or Seldom	30.9%	16.8%	3.2%	2.7%	86.8%	98.1%	96.8%	61.8%	27.3%
Less than 1 time a month	38.2%	36.8%	2.3%	10.5%	10.0%	1.4%	2.7%	25.0%	43.6%
1-6 times monthly	15.5%	40.5%	25.9%	45.0%	1.8%	0.5%	0.5%	13.2%	28.6%
2-6 times weekly	13.2%	5.9%	60.9%	39.5%	1.4%	0.0%	0.0%	0.0%	0.5%
1-2 times daily	2.3%	0.0%	5.0%	1.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Several times daily	0.0%	0.0%	2.7%	1.4%	0.0%	0.0%	0.0%	0.0%	0.0%

Figure 22: Mobile Financial Information Usage in South Africa

4.3.4 Mobile Financial Information Usage in Nigeria

The mobile financial information services were less frequently used by the Nigeria participants. Of the 231 sampled data, SMS alert for account transactions had a total of 190 (82.2%) participants that use the service more than 1-6 times monthly. Balance enquiries had a total number of 181 (78.3%) participants that never or seldom use, or use it less than once a month while statements enquiries had 197 (85.2%). Stock enquiries and reports services were less used by the participants. Figure 23 shows the mobile financial usage in Nigeria.

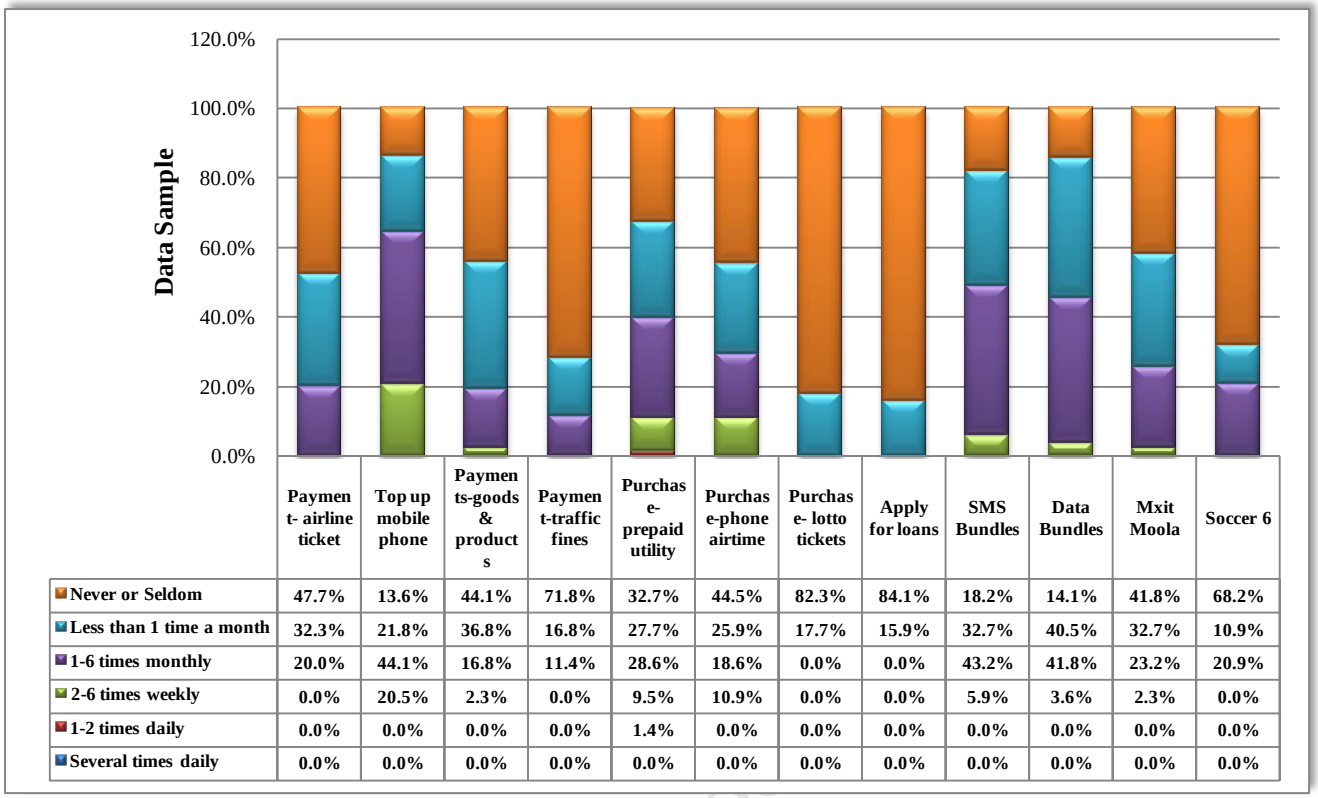


	Balance enquiries	Statement requests	SMS alert-account transactions	SMS alert-entry into online banking	SMS alert-stock prices	Enquiries	Stock enquiries and reports	Exchange& interest rate enquiries	Product Info.
Never or Seldom	39.8%	55.8%	2.6%	89.2%	92.2%	61.0%	98.7%	55.4%	32.9%
Less than 1 time a month	38.5%	29.4%	15.2%	5.6%	5.2%	8.7%	0.9%	26.4%	33.7%
1-6 times monthly	19.5%	13.4%	33.8%	3.9%	2.6%	20.8%	0.4%	18.2%	31.2%
2-6 times weekly	2.2%	1.3%	43.7%	1.3%	0.0%	8.2%	0.0%	0.0%	2.2%
1-2 times daily	0.0%	0.0%	3.0%	0.0%	0.0%	1.3%	0.0%	0.0%	0.0%
Several times daily	0.0%	0.0%	1.7%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%

Figure 23: Mobile Financial Information Usage in Nigeria

4.3.5 Other M-Banking Service Usage in South Africa

The use of mobile phone top up services is the most used with 97 (44.1%) participants using it on a 1-6 times monthly basis. Also, frequently used on a 1-6 times monthly basis are services of purchasing SMS and data bundles with 95 (43.2%) and 92 (41.8%) participants respectively. Other m-banking services that emerged from the survey were the purchase or mxit moola and soccer 6, each with 51 (23.2%) and 46 (20.9%) participants respectively using these functions on a 2-6 times a week. Figure 24 shows the usage of other m-banking services in South Africa.

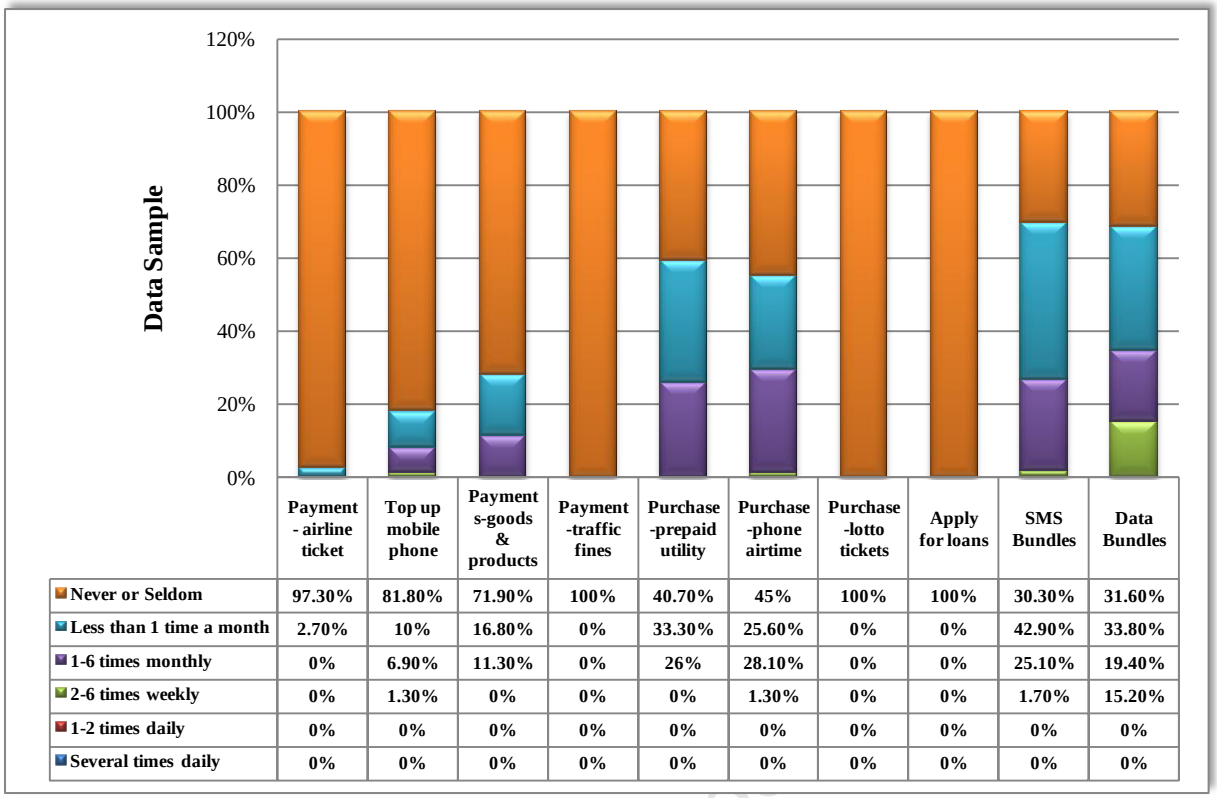


	Payment- airline ticket	Top up mobile phone	Payments-goods & products	Payment-traffic fines	Purchase-prepaid utility	Purchase-phone airtime	Purchase- lotto tickets	Apply for loans	SMS Bundles	Data Bundles	Mxit Moola	Soccer 6
Never or Seldom	47.7%	13.6%	44.1%	71.8%	32.7%	44.5%	82.3%	84.1%	18.2%	14.1%	41.8%	68.2%
Less than 1 time a month	32.3%	21.8%	36.8%	16.8%	27.7%	25.9%	17.7%	15.9%	32.7%	40.5%	32.7%	10.9%
1-6 times monthly	20.0%	44.1%	16.8%	11.4%	28.6%	18.6%	0.0%	0.0%	43.2%	41.8%	23.2%	20.9%
2-6 times weekly	0.0%	20.5%	2.3%	0.0%	9.5%	10.9%	0.0%	0.0%	5.9%	3.6%	2.3%	0.0%
1-2 times daily	0.0%	0.0%	0.0%	0.0%	1.4%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Several times daily	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%

Figure 17: Other M-Banking Service Usage in South Africa

4.3.6 Other M-Banking Service Usage in Nigeria

It emerged that the Nigerian participants never or seldom use m-banking services for the payment of traffic fines, the purchase of lotto tickets, or to apply for loans. A majority of the participants that use SMS bundles less than once a month and 1-6 times monthly are 99 (42.90%) and 58 (25.1%) respectively. Few of the participants use payments of airline tickets and top up. Each are 225 (97.3%) and 189 (81.8%) respectively. mobile phone Figure 25 shows the usage of other m-banking services in Nigeria.



	Payment - airline ticket	Top up mobile phone	Payments-goods & products	Payment -traffic fines	Purchase -prepaid utility	Purchase -phone airtime	Purchase -lotto tickets	Apply for loans	SMS Bundles	Data Bundles
Never or Seldom	97.30%	81.80%	71.90%	100%	40.70%	45%	100%	100%	30.30%	31.60%
Less than 1 time a month	2.70%	10%	16.80%	0%	33.30%	25.60%	0%	0%	42.90%	33.80%
1-6 times monthly	0%	6.90%	11.30%	0%	26%	28.10%	0%	0%	25.10%	19.40%
2-6 times weekly	0%	1.30%	0%	0%	0%	1.30%	0%	0%	1.70%	15.20%
1-2 times daily	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Several times daily	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%

Figure 18: Other M-Banking Service Usage in Nigeria

4.3.6 Mobile Brokerage Usage in South Africa and Nigeria

Majority of the participants in the sampled data of both countries do not use mobile brokerage services. Participants from both countries never or seldom use the ordering a new PIN service. Also, less than 10% of the participants use the selling and purchasing stocks service.

4.3.7 Summary of M-Banking Usage in South Africa and Nigeria

Several differences and similarities can been identified in comparing the usage of m-banking services in both countries. About 13% of the Nigerian participants use the order cheque book service. In Nigeria, cheque books are issued to account holders and are used for daily personal or business transactions. Thus explains the regular use of the ordering cheque books service in Nigeria. Money transfer and third party payments are more frequently used by the participants in South Africa than by those in Nigeria. Approximately 40% of South African participants use both services compared to less than 30% of the Nigerian participants.

Mobile brokerage services are scarcely used in either country. More than 90% of both samples never or seldom use the selling and purchasing stocks service. Also, 100% of the participants never or seldom order a new PIN for stock accounts. Table 8 shows a comparative summary of m-banking usage in South Africa and Nigeria.

Table 8: Percentage Comparison of M-Banking Usage in South Africa and Nigeria

	Several times daily (%)		1-2 times daily (%)		2-6 times weekly (%)		1-6 times monthly (%)		Less than 1 time a month (%)		Never or Seldom (%)	
	SA	**Nig**	**SA**	**Nig**	**SA**	**Nig**	**SA**	**Nig**	**SA**	**Nig**	**SA**	**Nig**
Mobile Accounting												
Money transfer	0.0	0.0	0.0	0.0	3.2	1.7	5.9	3.5	28.6	20.8	62.3	74.0
Third Party Payments	0.0	0.0	0.0	0.0	4.1	0.4	7.3	5.6	31.4	10.0	57.3	84.0
Standing orders(bill payments)	0.0	0.0	0.0	0.0	0.0	0.0	1.0	0.9	1.0	7.4	98.0	91.8
Insurance Policies	0.0	0.0	0.0	0.0	0.0	0.0	2.3	0.9	3.2	3.5	94.5	95.7
Order cheque book	0.0	0.0	0.0	0.0	0.0	0.0	1.0	0.4	4.5	12.6	94.5	87.0
Ordering new PIN	0.0	0.0	0.0	0.0	0.0	0.0	0.5	0.4	6.8	0.4	92.7	99.2
Mobile Brokerage												
Selling & Purchasing Stocks	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.4	6.8	0.9	93.2	98.7
Ordering new PIN	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	100.0	100.0
Mobile financial information												
Balance enquiries	0.0	0.0	2.3	0.0	13.2	2.2	15.5	19.5	38.2	38.5	30.9	39.8
Statement requests	0.0	0.0	0.0	0.0	5.9	1.3	40.5	13.4	36.8	29.4	16.8	55.8
SMS alert-account transactions	2.7	1.7	5.0	3.0	60.9	43.7	25.9	33.8	2.3	15.2	3.2	2.6
SMS alert-entry into online banking	1.4	0.0	1.0	0.0	39.5	1.3	45.0	3.9	10.5	5.6	2.7	89.2
SMS alert- stock prices	0.0	0.0	0.0	0.0	1.4	0.0	1.8	2.6	10.0	5.2	86.8	92.2
Enquiries	0.0	0.0	0.0	1.3	0.0	8.2	0.5	20.8	1.4	8.7	98.1	61.0
Stock enquiries and reports	0.0	0.0	0.0	0.0	0.0	0.0	0.5	0.4	2.7	0.9	96.8	98.7
Exchange& interest rate enquiries	0.0	0.0	0.0	0.0	0.0	0.0	13.2	18.2	25.0	26.4	61.8	55.4
Product Info.	0.0	0.0	0.0	0.0	0.5	2.2	28.6	31.2	43.6	33.7	27.3	32.9
Other M-banking functions												
Payment- airline ticket	0.0	0.0	0.0	0.0	0.0	0.0	20.0	0.0	32.3	2.7	47.7	97.3
Top up mobile phone	0.0	0.0	0.0	0.0	20.5	1.3	44.1	6.9	21.8	10.0	13.6	81.8
Payments-goods & products	0.0	0.0	0.0	0.0	2.3	0.0	16.8	11.3	36.8	16.8	44.1	71.9
Payment-traffic fines	0.0	0.0	0.0	0.0	0.0	0.0	11.4	0.0	16.8	0.0	71.8	100.0
Purchase-prepaid utility	0.0	0.0	1.4	0.0	9.5	0.0	28.6	26.0	27.7	33.3	32.7	40.7
Purchase-phone airtime	0.0	0.0	0.0	0.0	10.9	1.3	18.6	28.1	25.9	25.6	44.5	45.0
Purchase- lotto tickets	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	17.7	0.0	82.3	100.0
Apply for loans	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	15.9	0.0	84.1	100.0
SMS Bundles	0.0	0.0	0.0	0.0	5.9	1.7	43.2	25.1	32.7	42.9	18.2	30.3
Data Bundles	0.0	0.0	0.0	0.0	3.6	15.2	41.8	19.4	40.5	33.8	14.1	31.6
Mxit Moola	0.0	-	0.0	-	2.3	-	23.2	-	32.7	-	41.8	-
Soccer 6	0.0	-	0.0	-	0.0	-	20.9	-	10.9	-	68.2	-

In mobile financial information services, there is a similar usage pattern for the SMS alert-account transactions in both countries. The South African and Nigerian samples had 38.2% and 38.5% participants using it on a less than one time a month basis respectively. There is a major difference in the usage of SMS alert-entry into online banking. Compared to 2.7% of South African participants, 89.2% of Nigerian participants never or seldom use SMS alert- entry into online banking.

Other m-banking services such as payment of traffic fines, purchase of lotto tickets, and application for loans are barely used by the participants. All the Nigerian participants seldom use the above services. Approximately 55% of participants from each country use the purchase phone-airtime service. Few South African participants use other m-banking functions such as purchase of mxit moola and soccer 6 bets.

4.4 Perception of the Advantages and Disadvantages of M-Banking

4.4.1 Advantages of M-Banking

Figure 26 below illustrates the benefits users in South Africa and Nigeria derive from using m-banking. The majority of users in both countries identified its ubiquitous and immediacy (anywhere anytime) properties as the main advantages of m-banking. Transaction (SMS) alerts and convenience were also highly rated as advantages of m-banking.

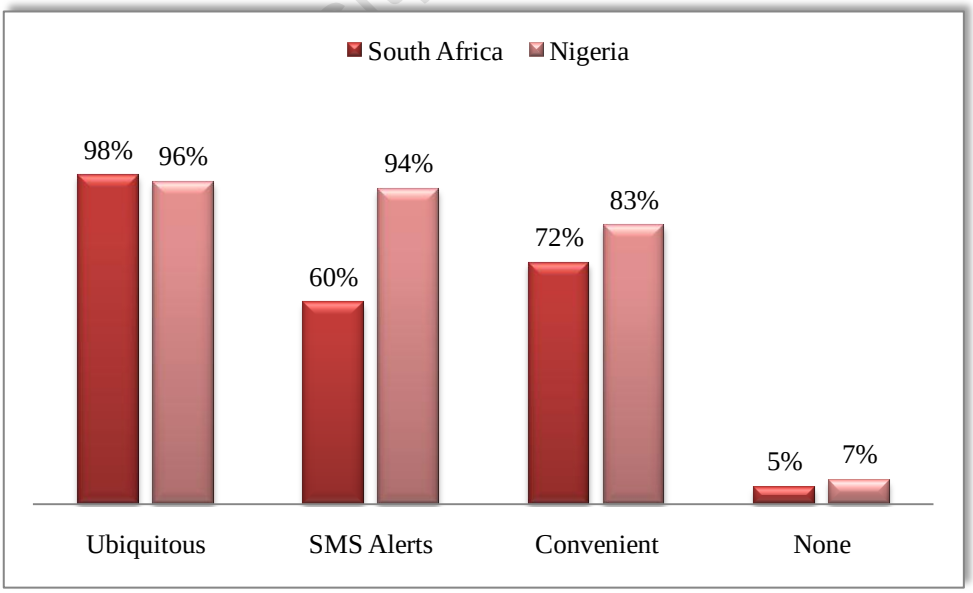


Figure 19: Advantages of M-Banking

Below are some responses from the interviewees.

> *"M-banking is an aspect of m-commerce. It means you can bank anywhere anytime. It is a very good aspect of mobile commerce that is functional and makes things easier for individuals."* – [SA1]

> *"The ease of use it is a service that is available anytime anywhere so long as you have got your mobile phone or device with you and it has got a service on it."* – [SA3]

> *"The advantages of m-banking are its easy accessibility and convenience. I can access my account immediately anywhere anytime."* – [SA6]

> *"The advantages are numerous you can do your banking transaction at anytime of the day and anywhere as well ... You can access your balance anytime any day."* – [NIG3]

> *"The use m-banking in Nigeria is wonderful. It is waxing stronger daily. It is getting more accessible. You can access your account anywhere you are in your country."* – [NIG7]

4.4.2 Disadvantages of M-Banking

Participants identified security risk as the major disadvantage of m-banking in both countries. The inconvenience of using a mobile device to access bank accounts and the expenses associated with subscribing to m-banking were not the major concerns of users. The graphical representation is shown in Figure 27.

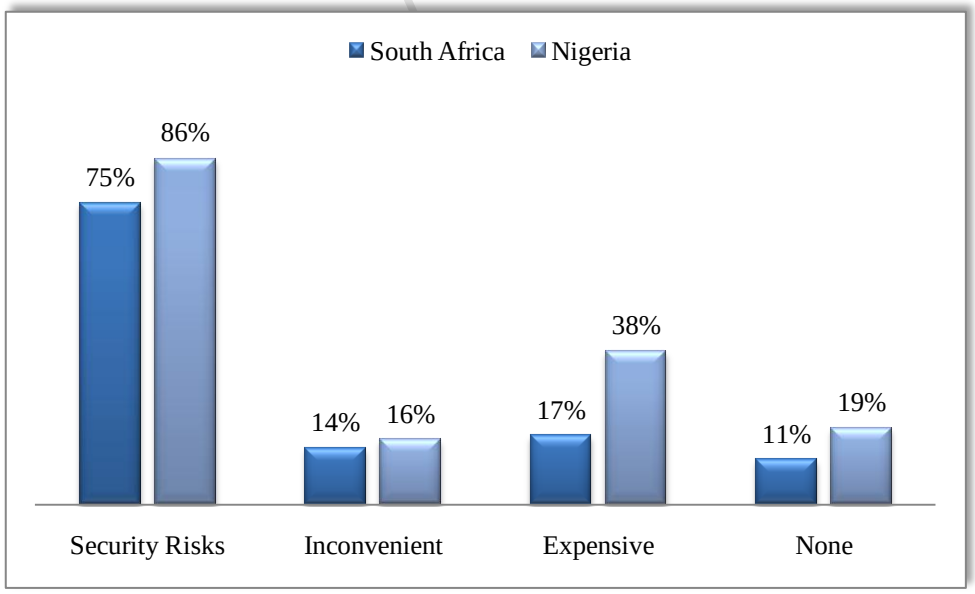


Figure 20: Disadvantages of M-Banking

The following are the statements by some interviewees in both countries:

> *"The disadvantage of mobile banking is that it can lead to a kind of security issue. ... Basically people feel threatened by security issues because of the possibility of losing their mobile phone, thereby exposing*

their passwords and bank details to fraudsters. That is the only disadvantage I have seen so far." – [SA1]

"In terms of disadvantages, I think what most of us are worried about is security." – [SA3]

"Security is a disadvantage. My phone can get stolen and all my account information will be available to another person." – [SA7]

"The disadvantage is that someone can steal your PIN, pose as you and steal your money from your account. The security concerns and fraud is a disadvantage." – [NIG3]

"Actually, I am not comfortable with such things in this environment because I have heard a lot about fraud. I am trying to find out and see if they are services I can use that will have maximum security of my account." – [NIG4]

"I am a bit sceptical about the security features that are already in place. I think customers need to be aware of security issues that can be performed through m-banking and also, customers need to be assured of more security on their accounts." – [NIG9]

4.4.3 Attractive Factors for M-Banking Acceptance

The participants identified high speed transactions as an attractive factor for accepting the use of m-banking. Other factors such as lower cost, better input and out interface were not as important as having a fast transaction with m-banking. This is shown in Figure 28.

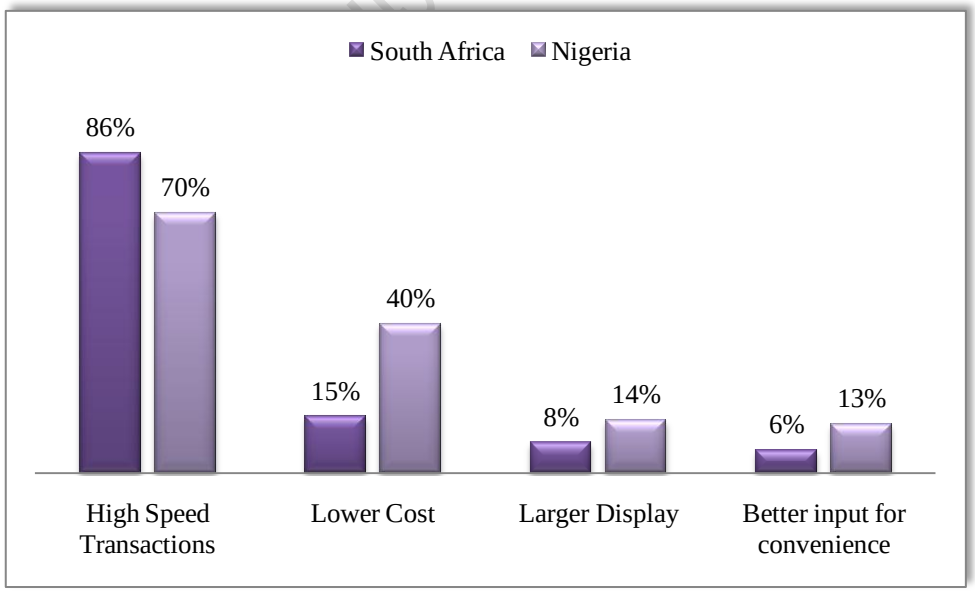


Figure 21: Attractive Factors of M-Banking

Below are few statements from the interviewees confirming the analysis illustrated above.

> *"...We need to let people know more about the service. Like I said, it is safe, it is secure and it is fast."* – [SA3]

> *"Mobile banking is very good. It is a fast way of making bank transactions. I like using it because it is very convenient to use."* – [SA9]

> *"The world has gone digital and you want to do your business fast. Mobile banking is something you cannot afford to toy with if you intend to do business in the 21st century. It is very fast, easy and convenient to use."* – [NIG1]

> *"...Mobile banking is very fast and easy to use."* – [NIG6]

4.5 Reliability Testing and Construct Validity

Reliability and construct validity were used to determine the consistency and regularity of the constructs of the survey questions. Cronbach alpha was used to test the reliability. Construct validity was also determined through the use of factor analysis. The reliability of the variables and construct validity were performed on the South African, Nigerian and the combined data set.

4.5.1 Construct Validity

Twelve factors were found to have Eigen values greater than 1.00 in each of the South African and Nigerian data sets. A scree test which is the cut off point of where a plot of the Eigen values declines also confirmed the same number of factors. A scree plot is the graphical representation of the Eigen values which determines the number of relevant factors when conducting the factor analysis of a data sample. The scree plot of the data of each country also identified twelve factors. The scree plot for the South African and Nigerian data are shown if Figures 29 and 30.

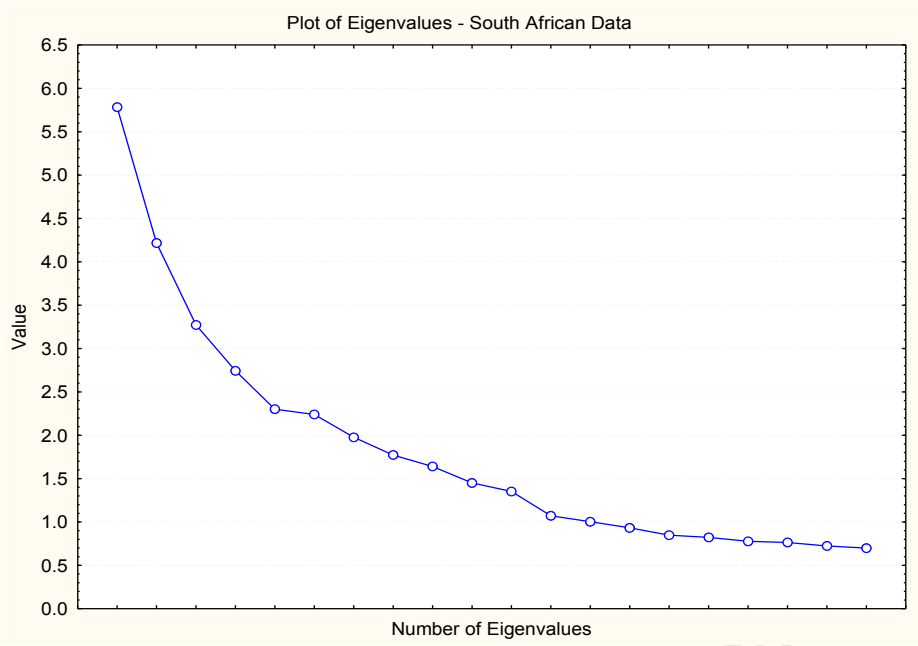


Figure 29: Scree Plot for South African Data Set

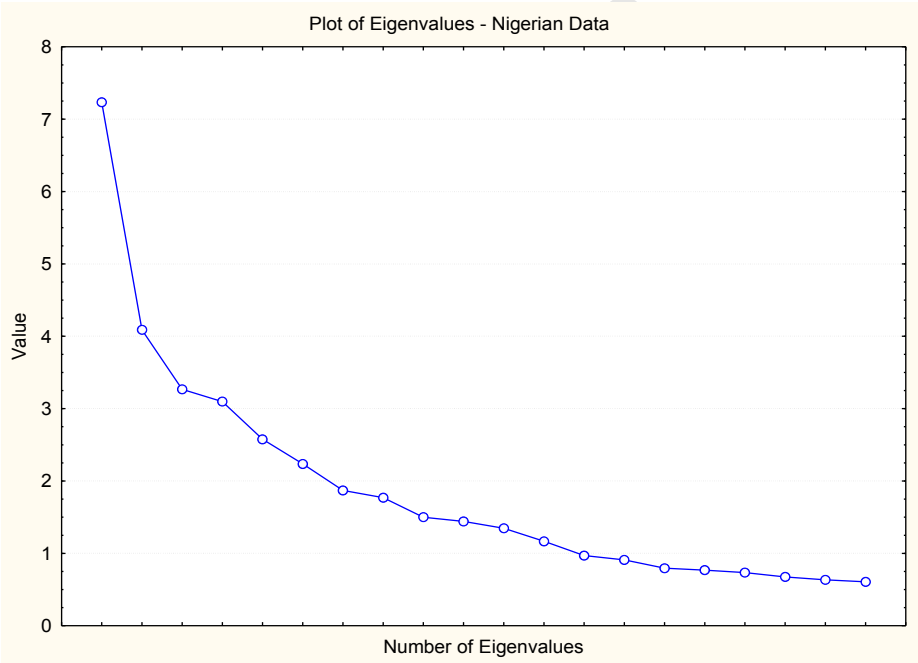


Figure 30: Scree Plot for Nigerian Data Set

Factor analysis with varimax normalized was performed to verify the validity of the constructs. Test items for trust, TP5; effort expectancy, EE2; behavioural intention, BI4 and user behaviour, UB4, did not load with other corresponding construct items. Therefore they were eliminated from the data in order to ensure validity of the constructs. A majority of the test items showed high loadings of more than 0.70. The test items of each construct loaded together on single

factors. Tables 9, 10, 11 and 12 shows the factor loadings achieved after the elimination of the non-valid items in the South African and Nigerian data sets.

Table 9: Factor Loading 1-6 (Varimax Normalized) of South Africa Data Set

Factor Loadings (Varimax normalized) (South Africa_Data.sta) Extraction: Principal components (Marked loadings are >.500000)						
	Factor 1	**Factor 2**	**Factor 3**	**Factor 4**	**Factor 5**	**Factor 6**
US1	0.776177	0.042153	-0.014600	0.133265	-0.083545	0.067831
US2	0.545347	0.061323	0.086581	0.083001	-0.089148	0.087703
US3	0.830747	0.016383	-0.091583	0.010295	-0.033858	-0.005932
US4	0.689642	0.074454	-0.099955	-0.167016	-0.101415	-0.115176
PD1	-0.045515	0.848493	0.174128	0.047648	0.036608	-0.114910
PD2	-0.029574	0.889532	0.053837	-0.040514	0.065317	-0.065258
PD3	-0.027353	0.875708	0.122919	-0.072070	0.145124	0.011682
PD4	-0.058590	0.871037	0.078832	0.003529	0.104100	0.034197
IDV1	-0.003523	-0.121240	0.836218	0.032122	0.054941	0.085860
IDV2	-0.083083	-0.045262	0.799509	0.113612	0.007663	0.097187
IDV3	-0.038499	-0.119900	0.801830	0.031084	0.096646	-0.038004
IDV1	-0.045255	-0.158679	0.814104	-0.001297	0.074796	-0.060542
CC1	0.075713	0.003412	0.002127	0.789664	0.078659	-0.047992
CC2	-0.001303	-0.030069	0.025444	0.742596	-0.025820	-0.049977
UA1	-0.022299	-0.126940	0.066073	-0.008887	0.703848	0.062849
UA2	-0.082451	-0.079500	0.046022	0.030005	0.807073	-0.124161
UA3	-0.022746	-0.122578	0.027496	-0.187135	0.805210	-0.093630
UA4	-0.108316	-0.036874	0.089278	0.162334	0.754110	0.041965
SF1	-0.068154	0.044739	0.001817	0.149418	0.000163	0.714466
SF2	0.030245	0.031016	0.082365	-0.001437	-0.066892	0.775039
SF3	0.081213	0.094184	-0.074910	-0.032279	-0.006259	0.681807
SF4	-0.048167	0.079403	0.043739	0.050954	-0.165025	0.748355
SF5	-0.015222	-0.032188	0.101281	0.007544	0.037858	0.768106
Expl.Var	2.578556	3.325514	2.927928	2.372482	2.604586	2.002369
Prp.Totl	0.056056	0.072294	0.063651	0.051576	0.056621	0.043530

Table 10: Factor Loading 7-12 (Varimax Normalized) of South Africa Data Set

Factor Loadings (Varimax normalized) (South Africa_Data.sta) Extraction: Principal components (Marked loadings are >.500000)						
	Factor 7	**Factor 8**	**Factor 9**	**Factor 10**	**Factor 11**	**Factor 12**
M/F1	0.619341	-0.042171	0.086604	0.125427	-0.067036	-0.069258
M/F2	0.666020	0.065650	0.097956	-0.001548	-0.087596	0.016635
M/F3	0.767716	0.083996	0.050977	0.041634	0.179467	-0.026207
M/F4	0.531676	0.094677	0.172426	0.195527	-0.175479	0.095311
BI1	-0.119642	0.817823	0.092157	0.151620	0.010822	0.043513
BI2	0.053511	0.828620	0.074868	0.020584	0.160682	0.009168
BI3	0.203881	0.794741	-0.021477	0.007194	0.136162	0.119975
TP1	0.024205	0.036354	0.694354	0.172059	0.134730	0.133479
TP2	0.132754	0.012367	0.627580	0.209969	0.138691	-0.088639
TP3	0.110767	0.045582	0.669114	-0.127187	0.010425	-0.021805
TP4	0.014680	0.082974	0.786579	0.087525	0.094860	0.000978
UE1	0.133688	0.227281	0.105412	0.511635	-0.160515	-0.055863
UE2	0.215071	0.135764	-0.035611	0.705838	0.129705	0.163940
UE3	-0.004624	-0.012441	0.209420	0.772110	0.118522	0.062031
UE4	-0.002611	-0.015946	0.050811	0.522022	0.464724	0.243815
EE1	0.138945	0.353774	0.174423	0.029567	0.561508	-0.098977
EE3	-0.148598	0.193533	0.202599	0.072203	0.676640	0.081095
EE4	0.026321	0.014254	0.049615	0.103208	0.707512	-0.041237
UB1	0.252166	-0.073513	-0.106976	0.178726	0.033143	0.620795
UB2	0.225834	0.203660	0.064738	-0.078725	0.096150	0.767149
UB3	0.079889	0.134752	0.113515	0.083094	0.075744	0.779489
Expl.Var	2.186911	2.507470	2.281869	2.289204	1.936819	1.607265
Prp.Totl	0.047542	0.054510	0.049606	0.049765	0.042105	0.034941

Table 11: Factor Loading 1-6 (Varimax Normalized) of Nigeria Data Set

Factor Loadings (Varimax normalized) (Nigeria_Data.sta) Extraction: Principal components (Marked loadings are >.500000)						
	Factor 1	**Factor 2**	**Factor 3**	**Factor 4**	**Factor 5**	**Factor 6**
US1	0.534994	0.209346	0.097613	-0.025142	-0.109634	0.163580
US2	0.742227	-0.186291	-0.085729	0.043313	0.054888	0.044953
US3	0.856468	-0.015471	0.029013	-0.032958	0.031715	0.078074
US4	0.793349	0.101600	0.042177	-0.039264	0.006121	0.009394
PD1	0.047450	0.891462	-0.059439	-0.002566	0.072664	-0.051537
PD2	-0.032878	0.866306	-0.051743	-0.017135	0.071689	-0.043952
PD3	-0.039355	0.883647	-0.045084	-0.053127	0.103114	0.069085
PD4	-0.005937	0.872902	-0.053994	-0.028185	0.060017	0.109138
CC1	-0.041244	-0.003424	0.865730	-0.082760	0.045288	0.046080
CC2	-0.029202	-0.061707	0.857612	0.109535	0.063906	0.032429
SF1	-0.028507	-0.025855	0.039769	0.736893	0.131610	-0.003875
SF2	-0.062029	0.102183	0.052262	0.816970	0.080998	0.080919
SF3	0.007154	-0.050386	-0.017354	0.787916	-0.107144	-0.010273
SF4	-0.018605	0.061424	-0.011896	0.781235	0.020323	0.083390
SF5	0.069924	0.024049	-0.016016	0.732468	-0.094559	-0.130523
IDV1	-0.088454	-0.119997	0.057153	0.006376	0.858429	-0.010320
IDV2	-0.018212	-0.043757	0.026185	0.036918	0.844933	-0.089873
IDV3	0.072924	0.004239	0.005573	0.014205	0.851289	-0.028547
IDV4	0.045533	-0.153058	0.054651	-0.037211	0.787156	0.001058
UA1	-0.049543	0.042127	0.090813	0.074072	0.041322	0.754007
UA2	0.074715	-0.004850	0.042390	-0.042387	-0.074804	0.818551
UA3	0.092613	-0.063982	0.047179	0.031438	-0.152487	0.821504
UA4	0.095568	-0.061986	-0.005011	-0.059080	0.028577	0.718907
Expl.Var	2.718406	3.426862	2.965246	3.215114	3.086101	2.696315
Prp.Totl	0.059096	0.074497	0.064462	0.069894	0.067089	0.058616

Table 12: Factor Loading 7-12 (Varimax Normalized) of Nigeria Data Set

Factor Loadings (Varimax normalized) (Nigeria_Data.sta) Extraction: Principal components (Marked loadings are >.500000)						
	Factor 7	**Factor 8**	**Factor 9**	**Factor 10**	**Factor 11**	**Factor 12**
BI1	0.748062	0.119450	0.176242	0.041306	0.122501	0.083608
BI2	0.870642	0.089825	0.016486	0.068413	0.064745	0.049121
BI3	0.768333	0.154845	0.021490	0.207122	0.085478	-0.049151
M/F1	0.036032	0.688346	-0.107127	0.082084	-0.004203	0.251823
M/F2	0.152810	0.707496	0.083455	0.070360	0.091568	0.035117
M/F3	0.189907	0.681084	0.123203	-0.026648	0.081302	0.144353
M/F4	0.010089	0.709155	0.040494	0.324165	0.132000	-0.089954
EE1	0.090608	0.107284	0.651492	0.204394	0.272297	0.115361
EE3	0.047134	0.114175	0.637294	0.049708	0.182869	0.167002
EE4	0.084098	-0.039548	0.755530	-0.010564	-0.102324	0.212966
UB1	0.034435	0.306869	0.107426	0.680499	0.103814	-0.012573
UB2	0.215245	0.026554	0.030253	0.789511	0.123186	0.057519
UB3	0.064991	0.063350	0.064421	0.755983	-0.028075	0.182673
UE1	0.327925	0.002112	-0.008296	0.121523	0.788444	0.350218
UE2	0.142849	0.110630	-0.173705	-0.026497	0.771356	0.419103
UE3	0.036934	0.119510	0.108434	0.016015	0.819357	0.090584
UE4	0.190642	0.122596	0.335125	0.217506	0.674957	-0.076784
TP1	0.184072	0.035922	0.207756	0.080051	-0.091697	0.646469
TP2	0.077078	0.082779	0.236412	-0.003018	0.080888	0.736680
TP3	-0.028521	0.125045	0.361386	0.142890	0.309169	0.535522
TP4	-0.187895	0.247535	0.117334	0.211463	0.084683	0.599206
Expl.Var	2.437308	2.364802	2.086662	2.152457	2.082449	2.361048
Prp.Totl	0.052985	0.051409	0.045362	0.046793	0.045271	0.051327

4.5.2 Reliability Testing

The constructs have a good degree of reliability. Several studies have used a Cronbach alpha score of 0.70 to indicate good reliability (Marchewka et al., 2007, Alawadhi &Morris, 2008). Some questions were negatively phrased for easy understanding. Therefore, transforming the values of the negatively phrased questions 23, 26, 31, 36 and 39, of section E of the questionnaire gave Cronbach alpha values which were well above 0.70. The Cronbach alpha for effort expectancy and cost in the South African data were slightly lower with values of 0.69 and 0.65 respectively. However, the comparison of the Cronbach alphas of both countries sets a comparable trend. Based on the factor analysis previously conducted, four of the test items were excluded from the data in order to achieve accurate and reliable data. The internal consistency of the constructs was therefore confirmed to be satisfactory. The reliability of the constructs is illustrated in Table 13.

Table 13: Reliability Summary - Cronbach Alpha of Constructs

Variables	Number of Test Items	Number of Valid Test Items	Cronbach Alpha of Valid Test Items		
			South Africa	Nigeria	Combined
User Satisfaction (US)	4	4	0.780145	0.788448	0.784441
Trust & Privacy (TP)	5	4	0.712368	0.754293	0.738477
Utility Expectancy (UE)	4	4	0.704629	0.719595	0.712499
Effort Expectancy (EE)	4	3	0.694506	0.715448	0.701077
Social Factors (SF)	5	5	0.724642	0.841570	0.823491
Cost (CC)	2	2	0.652060	0.851317	0.827016
Behavioural Intention (BI)	4	3	0.819040	0.811060	0.814980
Individualism (IDV)	4	4	0.853823	0.870060	0.862146
Power Distance (PD)	4	4	0.912302	0.913957	0.912902
Uncertainty Avoidance (UA)	4	4	0.796008	0.807761	0.817478
Masculinity/Femininity (M/F)	4	4	0.722308	0.732577	0.726026
User Behaviour (UB)	4	3	0.717452	0.716034	0.714357

4.6 Descriptive Statistics

The descriptive analysis revealed that the samples followed a normal distribution. However, it was observed that there was multimodality (i.e. multiple modes) of the distribution in the responses of both the user satisfaction (US) and masculinity/femininity (M/F) questions in the South African sample. This indicated that there was no homogeneity in the responses from participants. This result was not expected since the Nigerian sample showed the responses to the same questions were heterogeneously spread. The descriptive statistics of both Samples are shown in Table 14 and Table 15.

Table 14: Descriptive Statistics - South Africa

Variable	Descriptive Statistics (South_African_Ave.sta)									
	Valid N	Mean	Median	Mode	Frequency of Mode	Minimum	Maximum	Std.Dev.	Coef.Var.	Standard Error
US	220	2.711364	2.500000	Multiple	27	1.000000	6.000000	1.063168	39.21155	0.071516
TP	220	2.559091	2.400000	2.600000	29	1.000000	6.200000	0.850005	33.21511	0.057178
UE	220	2.868182	2.750000	2.250000	31	1.000000	7.000000	1.114323	38.85118	0.074957
EE	220	2.446591	2.250000	2.250000	31	1.000000	6.500000	0.950024	38.83051	0.063906
SF	220	2.423636	2.400000	2.600000	32	1.000000	6.400000	0.767632	31.67275	0.051637
CC	220	2.327273	2.000000	2.000000	52	1.000000	7.000000	1.029111	44.21963	0.069383
BI	220	3.273864	3.000000	2.500000	21	1.000000	7.000000	1.470833	44.92653	0.098939
IDV	220	4.437500	5.000000	5.500000	28	1.000000	7.000000	1.703376	38.38595	0.114582
PD	220	4.477273	5.000000	5.750000	24	1.000000	7.000000	1.679267	37.50647	0.112960
UA	220	2.223864	2.000000	2.000000	39	1.000000	7.000000	0.992671	44.63724	0.066774
M/F	220	3.185227	3.000000	Multiple	23	1.000000	6.500000	1.248662	39.20166	0.083994
UB	220	2.936364	2.750000	2.000000	28	1.000000	7.000000	1.350268	45.98435	0.090829

Table 15: Descriptive Statistics - Nigeria

Variable	Descriptive Statistics (Nigerian_Ave.sta)									
	Valid N	Mean	Median	Mode	Frequency of Mode	Minimum	Maximum	Std.Dev.	Coef.Var.	Standard Error
US	231	2.670996	2.500000	2.250000	44	1.000000	6.750000	1.144809	42.86075	0.075160
TP	231	3.009524	2.800000	2.400000	25	1.000000	5.800000	0.987934	32.82691	0.064861
UE	231	2.714286	2.500000	2.500000	31	1.000000	5.750000	0.963103	35.48272	0.063231
EE	231	2.683983	2.500000	2.250000	31	1.000000	7.000000	1.108176	41.28851	0.072755
SF	231	3.022511	2.600000	2.200000	27	1.000000	7.000000	1.214421	40.17921	0.079731
CC	231	3.456710	3.000000	3.000000	33	1.000000	7.000000	1.793184	51.87546	0.117983
BI	231	3.242424	3.000000	2.000000	23	1.000000	7.000000	1.325204	40.87078	0.087004
IDV	231	3.944805	3.500000	2.500000	25	1.000000	7.000000	1.714603	43.46484	0.112569
PD	231	4.531385	5.125000	5.500000	31	1.250000	7.000000	1.635754	36.09833	0.107393
UA	231	3.001082	2.750000	2.250000	28	1.000000	7.000000	1.383557	46.10194	0.090835
M/F	231	2.923160	2.750000	2.250000	37	1.000000	7.000000	1.205504	41.23976	0.079145
UB	231	2.797619	2.500000	2.500000	28	1.000000	6.500000	1.090794	38.99009	0.071614

4.7 Summary

This chapter provided the demographic distribution of the sampled data from each country. The usage patterns of m-banking services in both countries were also reported. In addition, scree plot diagrams, varimax normalised factor analysis, reliability tests and descriptive statistical analysis were used to establish the suitability of the data and survey items for the research analysis.

5 Regression Analysis and Hypotheses Testing

5.1 Introduction

This chapter presents the statistical analysis and hypotheses testing of the model. Standard multiple regression analysis was used to test the hypotheses in order to weigh the contribution of each independent variable on the dependent variable. The relationship between the independent and dependent variables is explained from the results of the analysis. A two-tailed test was employed to test the hypotheses with the p value significant at a level of 0.05, 0.01 and 0.001. Also, appropriate responses from the interviewees have been used to support the result of the statistical analysis.

5.2 Trust Construct

The relationship presented in hypothesis H_{2a} is shown in Figure 31.

H_{2a}: High uncertainty avoidance positively influences trust in m-banking

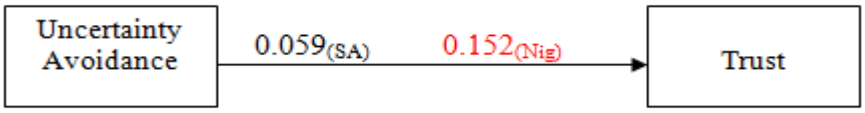


Figure 22: Uncertainty Avoidance vs. Trust Relationship

A comparison of the result shows that the Nigerian sample fully supports the uncertainty avoidance and trust relationship while the South African sample did not support it. A positive correlation exists between uncertainty avoidance (UA) and trust (TP) at $p<0.05$ in the Nigerian sample. In the South African sample, uncertainty avoidance had no significant correlation with trust. This is illustrated in Table 16. The lack of a significant relationship in the South African sample was not expected since several studies have shown the existence of a relationship between these constructs. Furthermore a fairly large number of the participants fall within the high uncertainty avoidance group.

Table 16: Uncertainty Avoidance vs. Trust Relationship Analysis

Independent Variable	Dependent Variable: Trust					
	South Africa: R^2=0.01			Nigeria: R^2=0.02		
	Beta (B)	t-value	p-value	Beta (B)	t-value	p-value
Uncertainty Avoidance (UA)	0.059	0.876	0.382	0.152*	2.335	0.020

*p<0.05; **p<0.01; ***p<0.001

For South Africa, the qualitative analysis showed a result in stark contrast with the statistical analysis. South Africa has been identified as a high uncertainty avoidance nation therefore this result was not expected. The interviewees held the view that due to security risk, there is anxiety about trusting the use of m-banking. It was clearly stated in the interviews that there is an association between fear and anxiety caused by high uncertainty avoidance and trust. Below is a statement by an interviewee.

> *"I think what most of us are worried about is security. People say they don't want to use internet banking because they don't want anything to happen with their account ... So if people won't use internet banking, how will they even have trust in mobile banking?"*- [SA3]

In Nigeria, the qualitative analysis supported the quantitative analysis. The interviewees acknowledge that there are risks involved with m-banking but the service providers in Nigeria enjoy a high level of trust. Some of the views of the interviewees are stated below.

> *"I think it is a little difficult for anybody to have access to my own personal account out of the millions or thousands of people that use it so I don't really consider that to be a security threat for me personally. And that is just about it the security threat. I trust my own bank enough not to disclose my personal information and that is just it."*- [NIG9]

> *"People consider the security issues in the sense that it is not safe to be moving cash around physically due to robbery attacks. People trust the services provided by the banks other than transferring funds by themselves."*- [NIG3]

5.3 User Satisfaction Construct

Figure 32 shows the diagrammatic relationship presented by hypotheses H_{1b} and H_{5a}.

> ***H_{1b}: Trust positively influences user satisfaction derived from m-banking***

> ***H_{5a}: Utility expectancy positively influences user satisfaction derived from m-banking***

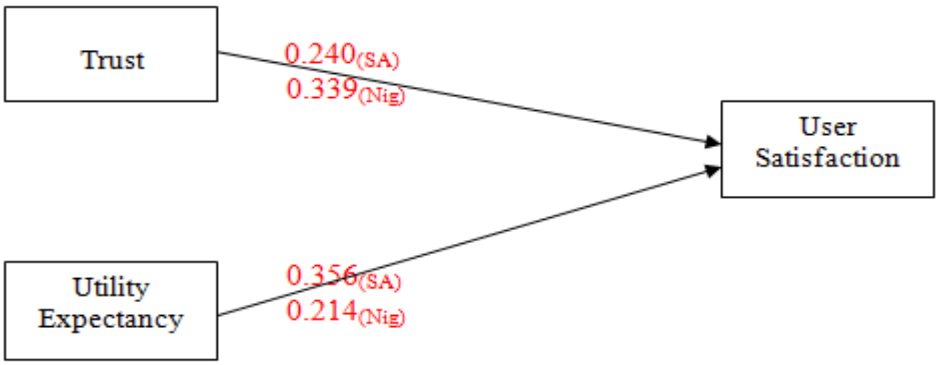


Figure 232: Associations with User Satisfaction

The result shows that user satisfaction (US) is highly associated with trust (TP) as well as utility expectancy (UE) of using m-banking in both countries. The beta values of trust and utility expectancy in both samples are very similar with a strong significance level at $p<0.001$. The relationships accounts for 23% of the variance in the model in South Africa and 24 % of the variance in Nigeria. This is illustrated in Table 17.

Table 17: Associations with User Satisfaction Analysis

Independent Variable	Dependent Variable: User Satisfaction					
	South Africa: $R^2=0.23$			Nigeria: $R^2=0.24$		
	Beta (B)	t-value	p-value	Beta (B)	t-value	p-value
Trust (TP)	0.240***	3.883	0.000	0.339***	5.012	0.000
Utility Expectancy (UE)	0.356***	5.744	0.000	0.214***	3.173	0.000

*p<0.05; **p<0.01; ***p<0.001

Trust

The qualitative analysis showed support for the above statistical analysis. The interviewees from both countries confirmed that a higher level of satisfaction is derived from increased trust in the use of m-banking. Some views are stated below.

> *"I think people have to be educated about the benefits. If people are educated and they are convinced that is a good option and they are not exposed to more risks than they normally would, then they probably would use it the more."*- [SA2]

> *"I am satisfied with the mobile banking I am using but if I can be assured of optimum security of my life savings, I will trust its use and will be willing to take up more of its services."*- [NIG8]

In order to ensure trust in the use of m-banking, users need to be informed about the available services and be assured that the security of their account is guaranteed. Trust in m-banking services increases as the number of unpleasant incidents experienced decreases. With increased trust, users derive more satisfaction and enjoyment from using m-banking.

Utility Expectancy

The statements of the interviewees substantiated the quantitative analysis. The interviewees associated the usefulness and convenience of m-banking with an increase in satisfaction derived. This is evidenced in the statements below:

> *"I am satisfied with all the mobile banking services I am using at the moment. Instead of going to the counter at the airport, you buy your air ticket with your mobile phone where ever you are. Also, instead of going to the bank and forming a queue to get serviced you can use your mobile banking services. It makes all your transactions things easy and convenient it saves you time and cost of travelling to the bank. You can top up your phone anytime and anywhere it makes life easy".* - [SA1]

> *"I feel the satisfaction of using it. It is a service that has to be spread all over and used by people. It makes life easy for instance; almost everybody has a cell phone nowadays. Even people in the rural villages have phones."*- [NIG4]

M-banking was viewed as a utility service by the interviewees. They identified m-banking as a useful and quality service. Increased satisfaction is derived when users perceive m-banking to be useful in their everyday life.

5.4 Utility Expectancy Construct

Figure 33 illustrates the relationships presented in the following hypotheses.

> ***H_{1c}: Trust positively influences utility expectancy of m-banking***

> ***H_{2b}: High uncertainty avoidance positively influences utility expectancy of m-banking***

> ***H_{3a}: Individualism positively influences utility expectancy of m-banking***

> ***H_{4a}: High masculinity positively influences utility expectancy of m-banking***

> ***H_{6a}: Effort expectancy positively influences utility expectancy of m-banking***

> ***H_{7a}: Social factors positively influence utility expectancy of m-banking***

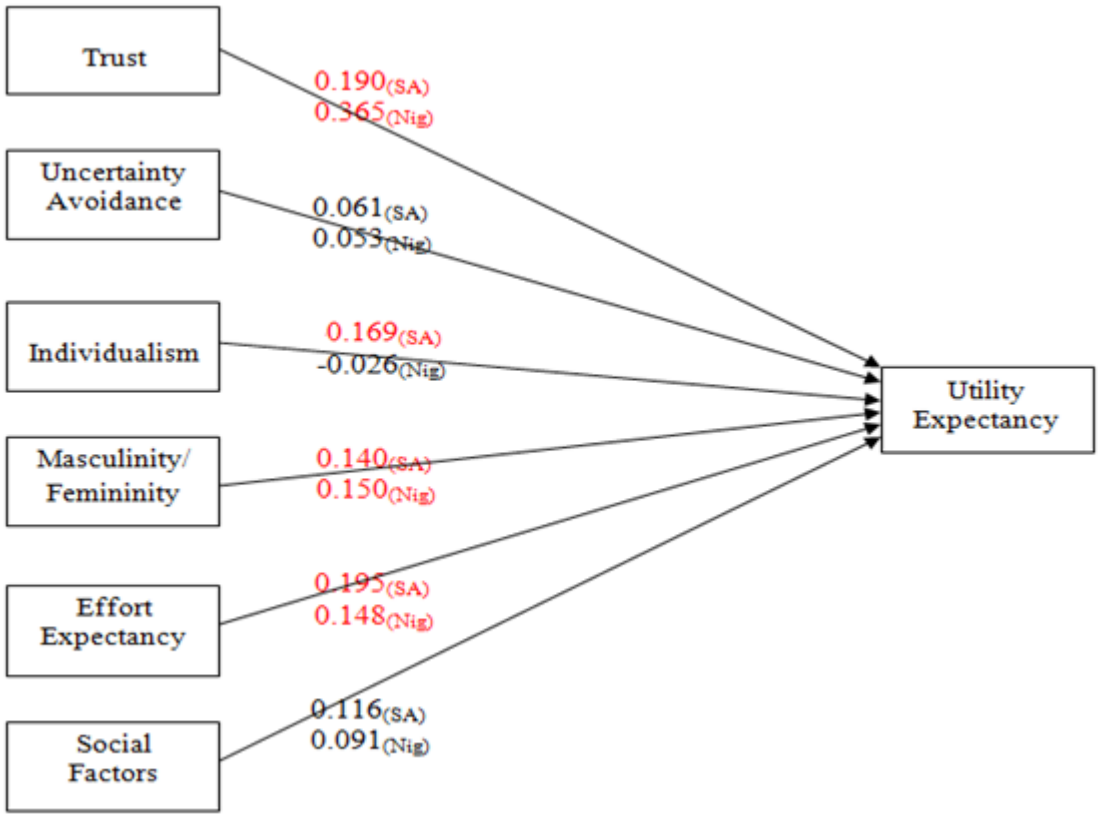


Figure 243: Associations with Utility Expectancy

Trust, masculinity and effort expectancy had positive correlations with utility expectancy in both samples. Individualism had a positive correlation coefficient in the South African sample. This means that low individualism influences the utility expectancy of using m-banking in South Africa. Individualism had no statistical significance in the Nigerian sample. Social factors showed no statistical association in the Nigerian sample. However, in the South African sample, social factors showed a positive correlation with a p level of 0.069, which is significant at $p<0.10$. Although, this relationship in not as pronounced as the others, it nonetheless shows some general influence on the sample. A larger sample would have provided a more significant relationship at either $p<0.05$ or $p<0.01$. Finally, uncertainty avoidance showed no statistical significance in either sample. Therefore, it can be argued that uncertainty avoidance is not an important predictor of utility expectancy. These relationships accounts for 18% of the variance in South Africa and 33 % of the variance in Nigeria. This is illustrated in Table 18.

Table 18: Associations with Utility Expectancy Analysis

Independent Variable	Dependent Variable: Utility Expectancy					
	South Africa: R^2=0.18			Nigeria: R^2=0.33		
	Beta (B)	t-value	p-value	Beta (B)	t-value	p-value
Trust (TP)	0.190**	2.857	0.005	0.365***	5.574	0.000
Uncertainty Avoidance (UA)	0.061	0.943	0.347	0.053	0.914	0.362
Individualism (IDV)	0.169**	-2.648	0.009	-0.026	-0.474	0.636
Masculinity (M/F)	0.140*	2.150	0.033	0.150**	2.517	0.013
Effort Expectancy (EE)	0.195***	2.981	0.003	0.148*	2.244	0.026
Social Factors (SF)	0.116	1.830	0.069	0.091	1.602	0.111

*p<0.05; **p<0.01; ***p<0.001

Trust

The interviewees in both countries state that trust issues are associated with the utility expectancy of their use of m-banking. When users place more trust in m-banking, it increases the usefulness they expect from its services.

"Although there are some security threats when using a technology like this, I still appreciate the quality of the service I am using." – [SA5]

"There will always be security, trust and privacy problems with things [Mobile banking] like this, but the importance of it use and satisfaction I enjoy is worth more than those." – [NIG8]

Uncertainty Avoidance

The quantitative analysis showed no support for the hypothesised relationship although the result of the qualitative analysis showed otherwise in the South African interviews. An interviewee voiced that the usefulness of m-banking comes into play when one experiences the convenience and satisfaction of being able to monitor ones account. A Nigerian interviewee believes that m-banking is risky and one needs to be assured of improved security before it can be adopted.

> *"I think it makes me very comfortable that whenever my account is entered into which should be by me, it makes me aware of it."* – [SA2]
>
> *"I am not comfortable ... I am trying to find out and see if they are services I can use that will have maximum security of my account."*- [NIG4]

Individualism

The qualitative analysis of the South African interviewees did not support the statistical analysis. A positive association was identified between individualism and utility expectancy. The views of

the interviewees in both countries were parallel in supporting the hypothesis that individualism is positively associated with the utility expectancy of m-banking.

> *Mobile banking is usually used by one person at a time which is the owner/subscriber. Logically, the usefulness and benefits of its use can only be experienced by the individual that owns it."*- [SA10]

> *"I think the decision to use mobile banking has got to be on a personal basis. This is because the usefulness or satisfaction obtained from using it can only be realised on an individual basis."*- [NIG7]

Masculinity

The responses from the interviewees showed both countries support the statistical analysis. Words such as "innovation" and "efficient" were used to describe the utility characteristic of m- banking usage.

> *"Mobile banking is a very good and innovative service offered by banks to their customers. It is an efficient means of performing banking activities."*- [SA7]

> "*I think it is a good innovation and something to be adopted by everyone..."*- [NIG4]

Most interviewees say that m-banking services are modern and an efficient means of managing their accounts. They associate the innovativeness of m-banking with the convenience derived.

Effort Expectancy

The qualitative analysis showed a strong support for the above statistical results. Majority of the interviewees from both countries stated that they enjoy the seemingly easy utilisation of m-banking services. This was clear from the participants views quoted below.

> *"I enjoy the ease and convenience of having access to my bank account at anyplace in time. I also like the SMS notification which gives me the transactions on my account."* - [SA7]

> *"Basically, I derive easy management of my account...."* - [NIG1]

Social Factors

While the statistical analysis showed no association between social influence and the utility of m-banking, the interviews revealed otherwise. The interviewees from both countries all agree that there is a level of association between these two constructs. This is evidenced from these statements.

> *"I think it is the social influence and what people say about the services. Their orientations have got to change."*- [SA3]

> *"Definitely some orientation will be necessary in order to effectively use those services"*- [SA2]

"I think many people might not have the awareness"- [NIG4]

"I think it is still not very popular. In Nigeria a lot of people open accounts in banks and their bankers fail to tell them that there is any service like that. So I think it is more of a customer service thing by the banks. If we can have more efficient customer service to make the service more popular by relating to customers on a day to day basis about developments in the mobile banking systems." - [NIG1]

5.5 Effort Expectancy Construct

Hypotheses H_{2c}, H_{3b} and H_{4b} present the relationships illustrated in Figure 34.

H_{2c}: High uncertainty avoidance positively influences effort expectancy of m-banking

H_{3b}: Individualism positively influences effort expectancy of m-banking

H_{4b}: High masculinity positively influences effort expectancy of m-banking

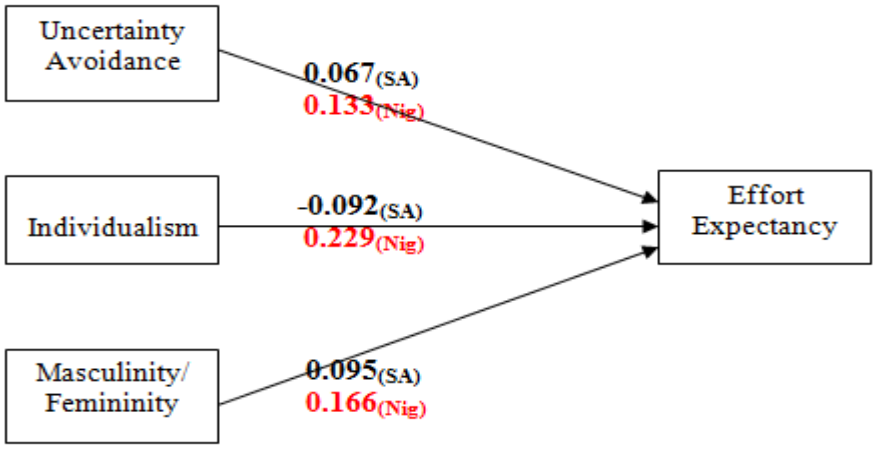


Figure 254: Associations with Effort Expectancy

Uncertainty avoidance, individualism and masculinity showed no statistical significance in the South African sample. In the Nigerian sample, there was a positive correlation between effort expectancy and uncertainty avoidance. This means that high uncertainty avoidance causes a positive influence on effort expectancy of using m-banking in Nigeria. These relationships register 1% of the variance in South Africa and 12 % of the variance in Nigeria. This is illustrated in Table 19.

Table 19: Associations with Effort Expectancy Analysis

Independent Variable	Dependent Variable: Effort Expectancy					
	South Africa: R^2=0.01			Nigeria: R^2=0.12		
	Beta (B)	t-value	p-value	Beta (B)	t-value	p-value
Uncertainty Avoidance (UA)	0.067	0.961	0.338	0.133*	-2.134	0.034
Individualism (IDV)	-0.092	-1.311	0.191	0.229***	3.558	0.000
Masculinity (M/F)	0.095	1.335	0.183	0.166**	2.585	0.010

*p<0.05; **p<0.01; ***p<0.001

The qualitative analysis revealed that the interviewees from both countries confirmed the hypothesised relationships in $H_{2c,}$ H_{3b} and $H_{4b.}$ However, these results are in contrast with the quantitative analysis. Below are the views of some interviewees.

Uncertainty Avoidance

Interviewees from both countries agreed that there are risks involved with using m-banking. Stolen or lost mobile phones, and fraudulent acts caused by compromised Personal Identification Number (PIN), are some of the threats identified by the interviewees. The Nigerian qualitative result, as opposed to the quantitative analysis, showed that there is a positive association between uncertainty avoidance and effort expectancy.

> *"Security is a disadvantage. My phone can get stolen and all my account information will be available to another person."* – *[SA7]*

> *"I feel mobile banking is not fool proof, it may be risky to use but people appreciate using it since it is very easy to use."* – [SA6]

> *I enjoy the ease and convenience of use of mobile banking although; many people consider it to be very risky."*- [NIG3]

Individualism

Interviewees from both countries stated avidly that the use of m-banking is a personal choice. It can only be used by one person at a time therefore it is not seen as a collective activity. Also, m-banking ethics require users to keep their access details and PIN private.

> *"Mobile banking is it is an individual activity which can be carried out easily on your own."* – [SA6]

> *"The idea behind mobile banking is to perform personal banking transactions easily with your mobile device which fortunately can be used by one person [yourself] alone."* – [NIG3]

Masculinity

The use of m-banking was seen as a means of easily maintaining ones account. Interviewees from both countries acknowledged this by making the following statements. This shows that both countries have masculine qualities in the use of m-banking.

> *"Ease of accessibility, ability to track and keep records of transactions. It is time saving, and life saving (especially in emergencies)."*- [SA4]

> *I and I think most people here [Nigerians] love to use innovative services, gadgets technologies and so on. I love to use mobile banking because it is easy to use, convenient and extremely efficient for the activities I perform."*- [NIG5]

The quantitative and qualitative analyses for the above relationships strongly contradict each other for the South African sample. This result was not expected as similar studies have shown there is an association between these constructs.

5.6 Behavioural Intention Construct

The relation identified by the following hypotheses is illustrated in Figure 35 below.

$H_{1a:}$ Trust positively influences behavioural intention to use m-banking

H_{5b}: Utility expectancy positively influences behavioural intention to use m-banking

H_{6b}: Effort expectancy positively influences behavioural intention to use m-banking

H_{7b}: Social factors positively influence behavioural intention to use m-banking

H_{8}: User satisfaction positively influences behavioural intention to use m-banking

H_{9}: High power distance positively influences behavioural intention to use m-banking

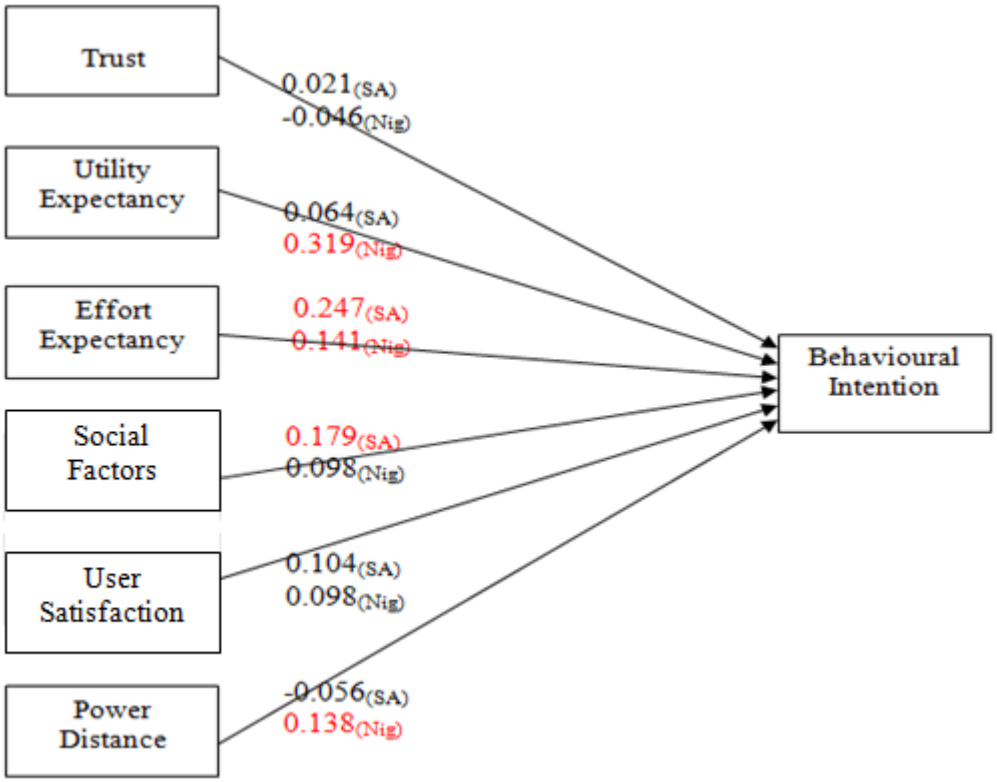


Figure 26: Associations with Behavioural Intention

Effort expectancy (EE) showed a positive correlation with behavioural intention (BI) in both samples. In the Nigerian sample, utility expectancy (UE) and power distance both had positive relationships with behavioural intention while in the South African sample, they showed no statistical significance. Social factors (SF) had positive influence with behavioural intention in the South African sample, while in the Nigerian sample, it had no significant correlation. Lastly, trust (TP) and user satisfaction (US) is not a convincing predictor of behavioural intention to use m-banking in either country. These relationships support 16% of the variance in South Africa and 21 % of the variance in Nigeria. Table 20 shows the result of the analysis.

Table 20: Associations with Behavioural Intention Analysis

Independent Variable	Dependent Variable: Behavioural Intention					
	South Africa: R^2=0.16			Nigeria: R^2=0.21		
	Beta (B)	t-value	p-value	Beta (B)	t-value	p-value
Trust (TP)	0.021	0.293	0.770	-0.046	-0.593	0.554
Utility Expectancy (UE)	0.064	0.879	0.380	0.319***	4.365	0.000
Effort Expectancy (EE)	0.247***	3.648	0.000	0.141*	1.977	0.049
Social Factors (SF)	0.179**	2.774	0.006	0.098	1.568	0.118
User Satisfaction (US)	0.104	1.435	0.153	0.098	1.420	0.157
Power Distance (PD)	-0.056	-0.865	0.388	0.138*	2.295	0.023

*p<0.05; **p<0.01; ***p<0.001

Trust and Privacy

The statistical analysis showed an opposing result to the qualitative analysis. While Nigerian interviewees stated that they trust m-banking services more than other forms of banking, South African interviewees were unconvinced and worried about a bank's trust, privacy and security issues.

> *"Generally speaking, most people will trust their banks and service providers not to divulge their bank details."*- [SA7]

> *"People consider the security issues in the sense that it is not safe to be moving cash around physically due to robbery attacks. People trust the services provided by the banks other than transferring funds by themselves."*- [NIG3]

The responses from these interviewees clearly show the dissimilar views of the participants in each country. The interviewees were able to identify that issues of trust and privacy are associated with m-banking. From their statements, it can be inferred that users do consider the issues of trust, privacy, safety and security of m-banking.

Utility Expectancy

The qualitative result confirmed the Nigerian statistical analysis. The responses of the interviewees showed that utility expectancy has an effect on the use of m-banking services. They identified the utility characteristic of m-banking and affirmed its value.

> *"I don't have to do anything extraordinary to get my transaction notification"* – [NIG3]

> *"Mobile banking is a very good and innovative service offered by banks to their customers."* – [SA7]

The qualitative result opposed the quantitative analysis in South Africa. The interviewees believe that there is a relationship between the perceived usefulness and intention to use m-banking.

Effort Expectancy

The qualitative analysis for effort expectancy validated the above statistics. Interviewees from both countries were able to confirm these results through their statements. A majority of the interviewees stated that m-banking services are easy to use and no training or extra skills are required to use the services. Below are some responses from the interviewees

> *"I don't think I'll need any training to use the other services as I wasn't trained to use the ones I currently use. Just getting to know their availability should be good enough, because I would expect them to work with simple stepwise instructions as the ones I currently use"* – [SA4]

> *"I know how to use electronic devices so I don't need to be trained on how to use a mobile phone to access my account."* – [NIG1]

Social Factors

The qualitative analysis verified the statistical analysis in the South African sample. Social factors were found to be associated with behavioural intention in South Africa. Interviewees in South Africa stated that social influence plays a role in the increased use of m-banking. The statistical analysis for the Nigerian social factors construct opposes the result from the interviews. Nigerian interviewees stated that low awareness may be a factor leading to the uncommon use of m-banking services.

> *"The use of m-banking is still growing in South Africa. Most customers are being introduced to mobile banking services and it use is on the increase."* – [SA9]

> *"...people have different reasons and are not influenced to use it."* – [NIG4]

Given that the qualitative result of the South African sample rightly confirms the quantitative result, and interviewees in both countries stated that influence is a factor, the contrasting result of the analysis of the Nigerian sample was not expected. The Nigerian survey participants may have perceived the social factor related questions in a different way.

User Satisfaction

The interview responses did not confirm the Statistical results for the relationship between user satisfaction and behavioural intention to use m-banking. The interviewees from both countries did not associate the satisfaction derived with the intention to use m-banking. Although, they agreed that the services are satisfactory and convenient to use.

> *"Convenience, satisfaction and the ease of accessing my bank account from anywhere and at anytime makes life easier. It makes information accessible,"* – [SA6]

> *"I feel the satisfaction of using it. It makes life easy for instance; almost everybody has a cell phone nowadays. Even people in the rural villages have phones."* – [NIG4]

Power Distance

The qualitative analysis confirmed the relationship between power distance and users attitude towards m-banking. The interviewees in each country had different views. Nigerians respect the opinion of others that are regarded as having a higher social status. This is not the case in South African where individuals do not feel obliged to accept such opinions.

> *"I am not sure if I will use a product, service or technology just because someone wants me to use it."* – [SA4]

> *"I prefer to seek the opinion of people that I respect and are using mobile banking to get their opinion before using it myself* – [NIG10]

5.7 User behaviour Construct

Figure 36 shows the relationship of the following hypotheses.

H_{10}: Cost influences user acceptance of m-banking

H_{11}: Behavioural intention influences user acceptance of m-banking

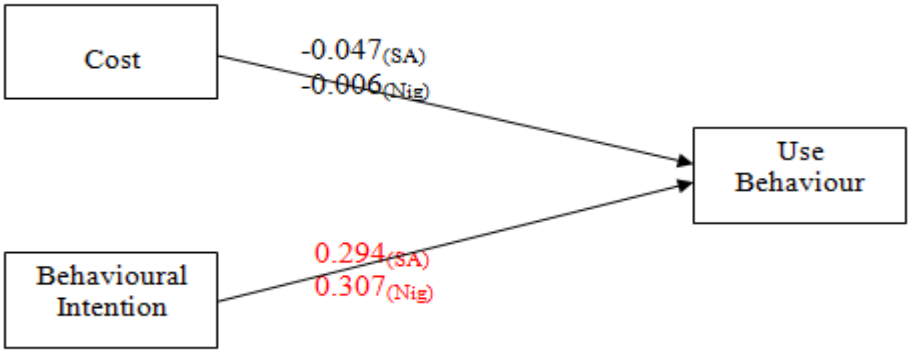


Figure 276: Associations with Use Behaviour

Cost (CC) showed no significant correlation with user behaviour towards m-banking regarding the hypothesised relationship in either country. This result was not expected since the cost variable has been validated in several IT adoption studies (Luarn & Lin, 2005). However, behavioural intention (BI) was highly associated with use behaviour in both countries. The relationship accounts for 8% of the variance in South Africa and 9% of the variance in Nigeria. This is illustrated in Table 21.

Table 21: Associations with Use Behaviour Analysis

Independent Variable	Dependent Variable: Use Behaviour					
	South Africa: R^2=0.08			Nigeria: R^2=0.09		
	Beta (B)	t-value	p-value	Beta (B)	t-value	p-value
Cost (CC)	-0.047	-0.710	0.478	-0.006	-0.098	0.922
Behavioural Intention (BI)	0.294***	4.450	0.000	0.307***	4.872	0.000

*p<0.05; **p<0.01; ***p<0.001

Cost

The qualitative analysis does not support the above statistical result. The interviewees from both countries stated that any increase in the cost of a service will make them stop using m-banking. The interviewees consider cost as a determinant of using m-banking. This was clear from the participant views quoted below

> *"I think the cost of mobile banking is the determining factor of use among individuals... influence people into using or not using mobile banking"* – [SA7]

> *"The cost of the mobile banking services is an important factor to consider because if the price is too high it will discourage customers from using it"* - [SA8]

> *"If the cost of using it is now becoming too much compared to the service I get from it I would stop it"* - [NIG5]

Behavioural Intention

Interviewees from both country stated several reasons for their usage patterns. Their intention to continue using m-banking was based on the different experiences they had with its use. A majority stated that the satisfaction derived from using m-banking makes them want to continue using the services.

> *"I don't think I would want to discontinue using it because it offers me the opportunity to know what transactions that are going on in my bank account such as when money is paid into my account or withdrawn, what charges and the likes. I can't discontinue using it. It is a great way of banking. I really like it"* – [SA3]

> *"I will be encouraged to use mobile banking the more if the bank charges are reduced. The ease of accessing my account also encourages me to continue to use mobile banking." – [SA8]*

> *"The factor that will make me to continue the using of m-banking is the overall convenience and the safety of my deposits." – [NIG9]*

5.8 Emerging Concepts

The qualitative analysis was able to reveal other factors that influence the use of m-banking. The interviewees identified ubiquity and immediacy, convenience, awareness and literacy level.

Ubiquity and Immediacy

Ubiquity and immediacy are the anywhere and anytime factor associated with m-banking. The interviewees identified them as an influencing determinant of m-banking usage in both countries.

> *"You can transact anywhere, anytime; anyhow, you get your balance without going to the bank. For instance, my bank is situated in Mowbray so if I need any transaction, I will now drive almost 45 minutes because my place is very far from my bank in Mowbray ... it makes your account accessible right there on your mobile anywhere you are in the world"*- [SA1]

> "*The convenience of not having to get home to open my laptop before I can perform a transaction since more often than not the mobile phone is very handy."*- [SA2]

The ability to monitor ones account from any part of the world at anytime provides easy access to ones account. This makes it possible to make financial transactions immediately. Below are the statements of the interviewees.

> *"Ease of accessibility, ability to track and keep records of transactions, time saving, and life saving (especially in emergencies)."*- [SA4]

> *"There are some business that must be transacted immediately; things that cannot wait a delay of some minutes can make one loose the opportunity in such instances, m-banking will be very good since one can always transact immediately on the phone"*- [SA2]

> *"The advantages are numerous you can do your banking transaction at anytime of the day and anywhere as well. Fast and easy money transfer between accounts. It reduces cash handling and the risk of being robbed off large amount of money. You can access your balance anytime any day."*- [NIG3]

> *"The use of m-banking in Nigeria is wonderful. It is waxing stronger daily. It is getting more accessible. You can access your account anywhere you are in your country."*- [NIG7]

Awareness

Awareness is a major factor of m-banking usage in both countries. The users are not getting the necessary information they need in order to use m-banking. The interviewees stated that they would like to use more m-banking services but are not aware of those that are available to them. The following are the views of the interviewees.

> *"I will like to use some other m-banking services but they are not available to me or I might know about them. For instance, the broadband services from FNB where you use your mobile phone to buy internet time in gigabytes are not available to me so I don't use it."*- [SA1]

> *"I do not have much information about them."*- [SA5]

> *"I would like to know more about the services m-banking offers because it seems I've got a limited knowledge and I've not been exploiting the maximal potential of these services."*- [SA4]

> *"I am not aware of other mobile banking services offered by my bank."*- [SA6]

> *"This is the only m-banking service that I am aware of. I do not know if there are other ones which I will love to know."*- [NIG2]

> *"In my experience ... Maybe the awareness is so poor or people have different reasons. Therefore, it is not as common as expected compared to developed countries."*- [NIG4]

The lack of awareness of m-banking is hindering its adoption in both countries.

Convenience

Convenience has been associated with the acceptance of m-banking. The convenience of using m-banking leads to the satisfaction derived.

> *"The convenience, since the mobile phone is more often than not in ones possession, the convenience of being able to transact business is probably a main factor of adoption of mobile banking."*- [SA2]

> *"It is very convenient for me to do all the transactions that I do through mobile banking."*- [SA10]

The interviewees confirmed that time and energy is saved when m-banking is used. M-banking saves effort and creates easy access to ones account. For instance, ones account balance can be checked from the convenience of one's home thereby saving time.

> *"It is convenient and it gives me a fast position about my bank account instead of me walking down to the bank to find out about my account, I can always get it immediately from the SMS notification."*- [NIG10]

> *"It is a lot convenient and easy to use. It makes ones bank account easily accessible."*- [NIG8]

> *"It is more convenient very easy than other methods of checking my account balance."*- [NIG9]

Literacy Level

Literacy level is linked directly to the use of m-banking. The acceptance of m-banking is determined by the amount of knowledge and exposure bank users posses. A majority of the interviewees identified literacy as an influential factor of m-banking usage. This is portrayed in the following statements.

> *"I don't think I need any extra training. I just need information about the services available on m-banking. Since I am literate, I don't think I require any extra skills."*- [SA1]

> *"The issues can be seen in two folds. Among the literates it will be security while among the illiterates, it will be the use of the technology. That is the technical knowhow. When it comes to the transferring of money using m-banking the bank usually gives you a token and in order to activate the token you have to go online to do that. It can be an overwhelming experience for an illiterate who is only familiar with using the phone for calls alone."*- [NIG6]

> "*In Nigeria, I will take it to be the literacy level. It is not everybody that is well enlightened about how m-banking can service them. So I just take it to be the literacy level and even when they enlighten them, people will always be scared of the risk involved because they do not have the full understanding of it."*- [NIG8]

These statements imply that when users are knowledgeable about m-banking services, they will not be apprehensive of its use.

5.9 Summary

This chapter provided the statistical and qualitative analysis of the research. It was revealed that the results from the qualitative analysis of the data from both countries support all the proposed hypotheses in this study. However, the results from the quantitative analysis do not always do so. The four dimensions of culture had some significance in the quantitative analysis. Also, users consider ubiquity and immediacy, awareness, convenience and literacy level to be the additional

factors that affect the use of m-banking. The comprehensive results of the analyses are reported in chapter 6.

CHAPTER 6

6 Results and Discussion

6.1 Introduction

This chapter presents the results of the analyses and a report on the findings of the study. The research findings reveal some implications of the research findings.

6.2 Restating the Research Questions Objectives

In order to present the results of this study, the research questions and objectives are hereby revisited:

Research Questions

What are the comparative differences/similarities of m-banking in South Africa and Nigeria? The secondary research questions are:

- Which m-banking services are used most by customers?
- What factors influences the user acceptance of m-banking?
- What are the emergent factors that can further influence the user acceptance of m-banking?
- What are the implications of the use of m-banking in South Africa and Nigeria?

Research Objectives

These are the objectives of this study:

- To determine the m-banking services that are mostly commonly used by customers.
- To further investigate additional factors that may influence the user acceptance of m-banking.
- To identify the advantages and disadvantages of m-banking in South Africa and Nigeria
- To validate the hypothesised associations between factors from prior studies

Recent studies of Gu et al. (2009) and Zhou et al. (2010) have investigated the adoption and behavioural intention towards m-banking. They analysed the use of m-banking through different modified technology adoption models and proposed several hypotheses to support their claims.

This study performed a comparative analysis of m-banking in South Africa and Nigeria. It introduced national culture as a construct and tried to validate identified associations between factors from prior studies. The inclusion of utility expectancy (perceived usefulness), effort

expectancy (perceived ease of use), trust, user satisfaction and cost into the model were adapted from the technology adoption model of Min et al. (2008).

6.3 Research Results

6.3.1 M-Banking Usage Results

The SMS alert for account transaction and the phone-airtime purchasing service are the most widely used m-banking services in South Africa and Nigeria. However, there is dissimilarity in the usage pattern of SMS alert-entry into online banking. South Africans use the SMS alert-entry into online banking service more than Nigerians since they regularly utilise online banking. Also, money transfer and third party payments are more frequently used by the participants in South Africa than those in Nigeria. Services such as payment of traffic fines, purchase of lotto tickets, and applying for loans are rarely used by the participants in either country. M-banking functions such as purchase of mxit moola and soccer 6 bets were found to be more popular amongst the younger age group in South Africa. Nigerians use the order cheque books service more often than South African. Lastly, mobile brokerage services were not popular amongst users in either country.

6.3.2 M-Banking Perception Results

This study identified the advantages, disadvantages and attractive properties of m-banking amongst users. A large percentage of users in each country considered the ubiquitous and immediacy (anywhere anytime) property of m-banking as it greatest advantage. However, transaction (SMS) alerts and convenience were also highly rated as two of its advantages. Security risk was found to be the major disadvantage of m-banking in both countries. High speed transactions were favoured as the most attractive property of m-banking.

6.3.3 Data Analysis Results

The quantitative and qualitative analyses have identified the existing relationships between the factors that determine the user acceptance of m-banking in South Africa and Nigeria. A summary of the quantitative and qualitative findings follows:

Findings A

Hypotheses	**Quantitative Findings**		**Qualitative Findings**	
	South Africa	Nigeria	South Africa	Nigeria
H_{2a}: High uncertainty avoidance positively influences trust in m-banking	Not Supported	Supported	Supported	Supported

The findings showed that there is significant influence of uncertainty avoidance on trust in m-banking thereby confirming hypothesis H_{2a}.

Findings B

Hypotheses	Quantitative Findings		Qualitative Findings	
	South Africa	Nigeria	South Africa	Nigeria
H_{1b}: Trust positively influences user satisfaction derived from m-banking	Supported	Supported	Supported	Supported
H_{5a}: Utility expectancy positively influences user satisfaction derived from m-banking	Supported	Supported	Supported	Supported

Both quantitative and qualitative findings confirmed the hypotheses H_{1b} and H_{5a}. Trust and utility expectancy have high associations with user satisfaction. Therefore both have a high impact on satisfaction derived.

Findings C

Hypotheses	Quantitative Findings		Qualitative Findings	
	South Africa	Nigeria	South Africa	Nigeria
H_{1c}: Trust positively influences utility expectancy of m-banking	Supported	Supported	Supported	Supported
H_{2b}: High uncertainty avoidance positively influences utility expectancy of m-banking	Not Supported	Not Supported	Supported	Supported
H_{3a}: Individualism positively influences utility expectancy of m-banking	Supported	Not Supported	Supported	Supported
H_{4a}: High masculinity positively influences utility expectancy of m-banking	Supported	Supported	Supported	Supported
H_{6a}: Effort expectancy positively influences utility expectancy of m-banking	Supported	Supported	Supported	Supported
H_{7a}: Social factors positively influences utility expectancy of m-banking	Not Supported	Not Supported	Supported	Supported

The quantitative and qualitative findings confirmed the hypotheses H_{1c}, H_{4a} and H_{6a} across both country samples. Hypothesis H_{3a} also showed there is a relationship between individualism and utility expectancy. Hypotheses H_{2b} and H_{7a} were not supported through the quantitative findings.

Findings D

Hypotheses	Quantitative Findings		Qualitative Findings	
	South Africa	Nigeria	South Africa	Nigeria
H_{2c}: High uncertainty avoidance positively influences effort expectancy of m-banking	Not Supported	Supported	Supported	Supported
H_{3b}: Individualism positively influences effort expectancy of m-banking	Not Supported	Supported	Supported	Supported
H_{4b}: High masculinity positively influences effort expectancy of m-banking	Not Supported	Supported	Supported	Supported

The qualitative findings of both samples and the quantitative findings of the Nigerian sample all confirmed hypotheses H_{2c}, H_{3b} and H_{4b}.

Findings E

Hypotheses	Quantitative Findings		Qualitative Findings	
	South Africa	Nigeria	South Africa	Nigeria
H_{1a}: Trust positively influences behavioural intention to use m-banking	Not Supported	Not Supported	Supported	Supported
H_{5b}: Utility expectancy positively influences behavioural intention to use m-banking	Not Supported	Supported	Supported	Supported
H_{6b}: Effort expectancy positively influences behavioural intention to use m-banking	Supported	Supported	Supported	Supported
H_{7b}: Social factors positively influences behavioural intention to use m-banking	Supported	Not Supported	Supported	Supported
H_{8}: User satisfaction positively influences behavioural intention to use m-banking	Not Supported	Not Supported	Supported	Supported
H_{9}: High power distance positively influences behavioural intention to use m-banking	Not Supported	Supported	Not Supported	Supported

The findings showed that hypotheses H_{5b}, H_{6b} and H_{7b} were supported especially by the qualitative analyses. The qualitative findings showed support for the quantitative results when H_9 was tested. However, only the Nigerian sample confirmed hypothesis H_9.

Findings F

Hypotheses	Quantitative Findings		Qualitative Findings	
	South Africa	Nigeria	South Africa	Nigeria
H_{10}: Cost influences user acceptance of m-banking	Not Supported	Not Supported	Supported	Supported
H_{11}: Behavioural intention influences user acceptance of m-banking	Supported	Supported	Supported	Supported

The quantitative finding was supported by the qualitative result of the relationship between behavioural intention and the user acceptance of m-banking thereby confirming hypothesis H_{11}.

6.4 Implications of Findings

The relationships between the factors which determine the user acceptance of m-banking were identified through the findings of the quantitative and qualitative tests. Although not all the hypothesised associations were validated, through this study, even so there was significant evidence of the influence of the identified factors on the user acceptance of m-banking in South Africa and Nigeria. The quantitative testing established the associations between the factors in each country through statistical analysis. The quantitative results from each country differ from each other. Nevertheless, some important conclusions which justify the hypothesised relationships were made from the results. Qualitative analysis was performed to further confirm the statistical analysis. It was observed that there are differences in the factors that influence the user acceptance of m-banking in each country. The socio-cultural formation and ideology of each country may be a determinant of this. The qualitative results provided the much needed practical explanation for the variety of statistical results.

Despites differences in the geographical, technological, and socio-cultural factors, South Africans and Nigerians have similar views of the factors that influence the use of m-banking. This was reflective through the interviews conducted in both countries. However, the major difference was in the usage pattern of m-banking services in each country.

Services such as soccer 6 bets and the purchase of mxit moola are common amongst the younger age group in South Africa. In Nigeria, the availability of m-banking has made remote banking more accessible to customers who do not have fixed broadband. SMS alert for account transactions was found to be the most popular service, especially in Nigeria. Although security risk was identified as the major disadvantage in both countries, users were willing to accept these risks because of the advantages of m-banking such as its usefulness, convenience, ease of use and the satisfaction derived.

This research also provides an understanding of the emergent factors that influence the acceptance of m-banking. **Ubiquity** and **immediacy**, **awareness**, **convenience** and **literacy level** were noted to be such factors. These factors need to be incorporated into technology adoption models in order to conduct studies of this nature.

Finally, m-banking has not been used at its full potential, according to the findings of this study. Although the technological platforms for various m-banking services are available in South Africa, customers prefer to perform bank transactions from their home computers since this seems safer than m-banking in terms of loss of phone. This may be the reason for the not maximising the use of m-banking services in South Africa. In the Nigerian the use of some m-banking services such as payment of traffic fines and purchasing airtime tickets are not popular amongst users. This should be due to reasons that are best investigated through research, as the lifestyle or standard of living of Nigerians may be different from that of South Africans.

7 Conclusion

7.1 Introduction

This chapter provides the conclusion of the study. It presents the summary of the findings of the research. The limitations of the study and areas for future research are also reported.

7.2 Limitations of the Study

There exist some limitations to this study. The sampled data was limited to individuals that own a bank account, a mobile device and perform m-banking activities. The participants were employees and university student with a demographic distribution that is fairly representative of m-banking users in both countries, since the selection criteria for the research participants were drawn from classes of individuals with varied gender, marital status, occupation, age group and income bracket.

The researcher experienced what can be termed as a geographical limitation in the data gathering process of the research. To overcome this, questionnaires were sent in advance to the participants in Nigeria and the interviews were conducted later. However, this limitation was not experienced for the data gathering process in South Africa, since the researcher resides there.

This study employed a cross-sectional timeframe. It would have been interesting to conduct the interviews and the survey through a longitudinal timeframe in order to obtain more diversified responses. However a cross-sectional study provides a specified scope for an in-depth examination of the gathered data.

The quantitative and qualitative approaches employed in this study were rigorous and time consuming. Nevertheless, adopting both approaches was advantageous to this research since the qualitative approach was used to provide support for the results of the quantitative approach. Few of the quantitative and qualitative results contradicted each other. However, this has not distorted the findings of this study rather it has created a stronger argument for the ensuing conclusion of this research.

7.3 Areas of Further Research

This study has been able to integrate the four dimensions of national culture and investigate their indirect impact on the acceptance of m-banking in each country. Future research could be conducted to examine the moderating effect of culture in other IT adoption researches.

Further studies must be performed by properly formulating research questions and methodologies which are appropriate for a research of this nature. Longitudinal time frame and focus group studies can be used to examine different m-banking studies.

Additional attempt can be made to conduct a similar study in other countries in order to identify the factors that influence the acceptance of technologies such as m-banking. The banking industry can also be included in the research population in order to better understand the use of m-banking from the perspectives of the service providers.

7.4 Recommendations

This research was able to identify the factors that impact the acceptance of m-banking. The results of the study proffered an explanation of the acceptance and usage patterns in South Africa and Nigeria. M-banking service providers should to be aware of the needs and expectations of their users.

The major problem in both countries is security risk. Therefore, stakeholders in the m-banking industry need to earn the trust of users. Orientation scheme for users on how they can minimize the security risk associated with m-banking needs to be implemented.

Non accessibility and lack of awareness of service are also problems. The knowledge and exposure user's posses are important in the acceptance of m-banking. The literacy level of users needs to be considered in using m-banking. Hence informative and educative advertisements which would benefit the least literate in the society should be implemented. Also, an effective customer service operation should be in place to inform prospective users of the advantages of m-banking services, and the security features must be explained to safeguard users from fraudsters.

7.5 Conclusions

This study explains the acceptance of m-banking by creating a conceptual model from related literature. The model was employed to make clear the comparative differences and similarities of m-banking acceptance in South Africa and Nigeria. The results provide strong support for the validity of the generated hypotheses.

There were several differences and similarities between m-banking users in South Africa and Nigeria. There are similarities in the usage patterns of SMS alert for account transaction and the purchasing of phone-airtime. These are the most widely used m-banking services in each country. There were also, similarities in the perceptions of the advantages, disadvantages and

attractive properties of m-banking in both countries. The difference in m-banking usage between both countries was evident in the making of payments and purchasing of items services. South Africans use more of such services than Nigerians. Nigerians are rather content with the use of account information services than the transactional services. It was observed that the major users of m-banking services were younger age groups of both countries.

This study revealed that uncertainty avoidance has positive influence trust in m-banking. Although the South African quantitative result showed otherwise, the qualitative result was in agreement with the Nigerian quantitative and qualitative results. Trust and utility expectancy has a positive influence on the satisfaction users derive from using m-banking in both countries. Trust, high masculinity and effort expectancy also has effect on the utility expectancy of m-banking in both countries.

In South Africa, the quantitative result showed that high uncertainty avoidance, individualism and high masculinity were of no influence on effort expectancy. However, the qualitative result showed otherwise. In Nigeria, these factors have effect on the effort expectancy of m-banking. In each country, effort expectancy positively affects the behavioural intention to use m-banking. Also, behavioural intention influenced the acceptance of m-banking in both countries.

The result of the analysis further suggests that culture has an indirect effect on the use and acceptance of m-banking. This accounted for some of the differences in the user acceptance and level of usage of m-banking in South Africa and Nigeria. Several emergent factors which influence the acceptance of m-banking were also identified from the qualitative analysis. In conclusion, this study describes m-banking acceptance in South Arica and Nigeria from a comparative perspective.

References

Adelaar, T., Bouwman, H., & Steinfield, C. (2004). Enhancing Customer Value Through Click-and-Mortar E-commerce: Implications for Geographical Market Reach and Customer Type. *Telematics and Informatics*, 21, 167–182.

Agarwal, R., Rastogi, S., & Mehrotra, A. (2009). Customers' Perspectives Regarding E-banking in an Emerging Economy. *Journal of Retailing and Consumer Services*, 16(5), 340-351.

Agboola, A. A. (2006). Electronic Payment Systems and Tele-banking Services in Nigeria. *Journal of Internet Banking and Commerce,* 11(3). Retrieved May 23, 2009, from http://www.arraydev.com/commerce/jibc/

Aggelidis, V., & Chatzoglou, P. D. (2008). Using a Modified Technology Acceptance Model in Hospitals. *International Journal of Medical Informatics*, 78, 115-126.

Ajzen, I. (1991).The Theory of Planned Behaviour. *Organisational Behaviour and Human Decision Processes*, 50(2), 179-211.

Alawadhi, S., & Morris, A. (2008, August, 6-9). *The Use of the UTAUT Model in the Adoption of E-government Services in Kuwait*. Paper Presented at the 2008 41st Hawaii International Conference on System Science, San Francisco, California. Retrieved November 18, 2009, from http://www.computer.org/portal/web/csdl/proceedings/h#4

Amin, H. (2008). Factors Affecting the Intentions of Customers in Malaysia to use Mobile Phone Credit Cards. *Management Research News*. 31(7), 493-503.

Ammenwerth, E., Buchauer, A., Bludau, B., & Haux, R. (2000). Mobile Information and Communication Tools in the Hospital. *International Journal of Medical Informatics*, 57(2000), 21-40.

Anandarajan, M., Igbaria, M., & Anakwe, U. P. (2002). IT Acceptance in Less Developed Country: A Motivational Factor Perspective. *International Journal of Information Management*, 22, 47-65.

Anderson, J. E., & Schwager, P. H. (2008, February 17). *SME Adoption of Wireless LAN Technology: Applying the UTAUT Model.* Paper Presented at the 2000 7th Annual Conference of the Southern Association for Information Systems, Savannah, GA. Retrieved May 10, 2009, from Scientific Literature Digital Library and Search Engine.

Armitage, C. J., & Conner, M. (2001). Efficacy of the Theory of Planned Behaviour: A Meta-Analytic Review. *British Journal of Social Psychology*, 40, 471–499.

Ayo, C. K., Ekong, U. O., Fatudimu, I. T., & Adebiyi, A. A. (2007). M-Commerce Implementation in Nigeria: Trends and Issues. *Journal of Internet Banking and Commerce,* 12(2). Retrieved May 23, 2009, from http://www.arraydev.com/commerce/jibc

Ayo, C., Adebiyi, A. A., Fatudimu, I. T., & Ekong, U. O. (2008). A Framework for E-Commerce Implementation: Nigeria a Case Study. *Journal of Internet Banking and Commerce,* 13(2). Retrieved May 21, 2009, from http://www.arraydev.com/commerce/jibc/

Bagchi, K., Cerveny, R., Hart, P., & Peterson, M. (2003). *The Influence of National Culture in Information Technology Product Adoption*. Paper Presented at the 2003 9th Americas Conference on Information Systems, USA. Retrieved May 10, 2010, from http://aisel.aisnet.org/cgi/viewcontent.cgi?article=1585&context=amcis2003

Bandura, A. (1989). *Social Cognitive Theory*. Greenwich, CT: JAI Press.

Bauer, H. H., Reichardt, T., Barnes, S. J., & Neumann, M. M. (2005). Driving Consumer Acceptance of Mobile Marketing: A Theoretical Framework and Empirical Study. *Journal of Electronic Commerce Research*, 6(3), 181-92.

Bhattacherjee, A. (2001). An Empirical Analysis of the Antecedents of Electronic Ecommerce Service Continuace. *Decision Support Systems*, 32(2), 201-214.

Boadi, R. A., Boateng, R., Hinson, R., & Opoku, R. A. (2007). Preliminary Insights into M-commerce Adoption in Ghana. Retrieved May 21, 2009, from http://idv.sagepub.com/cgi/content/abstract/23/4/253

Brown, I., & Jayakody, R. (2008). B2C E-Commerce Success: A Test and Validation of a Revised Conceptual Model. *The Electronic Journal Information Systems Evaluation,* 11(3), 167-184.

Brown, I., & Molla, A. (2005). Determinants of internet and cell phone banking adoption in South Africa. *Journal of Internet Banking and Commerce,* 10(1). Retrieved May 21, 2009, from http://www.arraydev.com/commerce/JIBC/2005-02/brown.HTM

Brown, I., Cajee, Z., Davies, D., & Stroebel, S. (2003). Cell Phone banking Predictors of Adoption in South Africa – An Exploratory Study. *International Journal of Information Management*, 23(3), 381-393.

Brown, I., Field, A., Hill, B., & Wessels, G. (2006, September 6-8). *The Role of Uncertainty Avoidance and Trust in On-line Shopping Adoption*, Paper Presented at the 2005 8th Annual Conference on WWW Applications, Bloemfontein, South Africa.

Brown, I., Gordon, C., Janik, N., & Meyer, M. (2005, November 29). *Investigating Adoption/Non-adoption of Cell Phones for Financial Transactions in South Africa.* Paper Presented at the 2005 16th Australasian Conference on Information Systems, Sydney, Australia. Retrieved May 10, 2009, from Conference CD Pack.

Bruner G. C., & Kumar, A. (2005). Explaining Consumer Acceptance of Handheld Internet Devices. *Journal of Business Research,* 58(5), 553– 558.

Büyüközkan, G. (2009). Determining the Mobile Commerce User Requirements Using an Analytical Approach. *Computer Standards &Interfaces*, 3(1), 144-152.

Camponovo, G. (2002). Mobile Commerce Business Models. Retrieved June 26, 2009, from http://inforge.unil.ch/aosterwa/Documents/workshop/Camponovo.pdf

Camponovo, G., & Pigneur, Y. (2002). *Analyzing the Actor Game in M-Business.* Paper Presented at the 2002 1st M-business Conference, Athens, Greece. Retrieved June 26, 2009, from Scientific Literature Digital Library and Search Engine.

Carlsson, C., Carlsson, J., Hyvönen, K. Puhakainen, J., & Walden, P. (2006, January 4). *Adoption of Mobile Devices/Services – Searching for Answers with the UTAUT.* Paper Presented at the 2006 39th Hawaii International Conference on System Sciences, Hawaii, USA. Retrieved June 26, 2009, from E-journal Portal, UCT Libraries.

Chen, L., & Frolick, M. (2004). Assessing M-commerce Opportunities. *Information Systems Management*, 21(2), 53-61.

Chiemeke, S. C., Evwiekpaefe, A. E., & Chete, F. O. (2006). The Adoption of Internet Banking in Nigeria: An Empirical Investigation. *Journal of Internet Banking and Commerce,* 11(3).

Clarke, R. (1999). A Primer in Diffusion of Innovations Theory. Retrieved July 1, 2009, from http://www.rogerclarke.com/SOS/InnDiff.html

Cody-Allen, E., & Kishore, R. (2006, April 13). *An Extension of the UTAUT Model with E-Quality, Trust, and Satisfaction Constructs.* Paper Presented at the 2006 ACM SIGMIS CPR

Conference on Computer Personnel Research, Claremont, California, USA. Retrieved June 26, 2009, from The ACM Digital Library.

Coursaris, C., & Hassanein, K. (2002). Understanding M-commerce: A consumer-centric Model. *Quarterly Journal of Electronic Commerce,* 3(3), 247–271.

Coursaris, C., Hassanein, K., & Head, M. (2003). M-commerce in Canada: An Interaction Framework for Wireless Privacy. *Canadian Journal of Administrative Sciences,* 20(1), 54-63.

Davis, F.D., Bagozzi, R. P., & Warshaw, P.R. (1989). User Acceptance of Computer Technology: a Comparison of Two Theoretical Models. *Management Science*, 35(8), 982-1002.

Donner, J. (2007). M-banking and M-payments Services in Developing World: Complements or Substitutes for Trust and Social Capital? Retrieved May 18, 2009, from http://www.informaworld.com/smpp/title~content=t713684587~db=all

Faber, E., Ballon, P., Bouwman, H., Haaker, T., Rietkerk, O., & Steen, M. (2003, June 9). *Designing Business Models for Mobile ICT Services.* Paper Presented at the 2003 16th Bled Electronic Commerce Conference, E-Transformation, Bled, Slovenia. Retrieved June 26, 2009, from http://www.mozaiek.dds.nl/docs/PanelBled03.pdf

Facer, K., Joiner, R., Stanton, D., Reidz, J., Hullz, R., & Kirk, D. (2004). Savannah: Mobile Gaming and Learning? *Journal of Computer Assisted Learning,* 20, 399-409.

Fanawopo, S. (2006, August 16). Mobile Banking on the Rise - Glo Mobile Records 200,000 Hits on Mobile Banking Daily. *The Sun News On-line.* Retrieved June 27, 2009, from http://www.sunnewsonline.com/webpages/features/suntech/2006/aug/16/suntech-16-08-2006-001.htm

Fereday, J., & Muir-Cochrane, E. (2006). Demonstrating Rigor Using Thematic Analysis: A Hybrid Approach of Inductive and Deductive Coding and Theme Development. *International Journal of Qualitative Methods* 5(1), 1-11.

FinMark Trust (2007). Just How Transformational is M-Banking? Retrieved May 21, 2009, from http://www.finmark.org.za/Documents/transformational_mbanking.pdf

Funk, J. L. (2005). The Future of the Mobile Phone Internet: An Analysis of Technological Trajectories and Lead Users in the Japanese Market. *Technology in Society,* 27, 69-83.

Gefen, D., Karahanna, E., & Straub, D. (2003). Trust and TAM in Online Shopping: An Integrated Model. *MIS Quarterly*, 27(1), 51-90.

GlobalTrends (2007). Rethinking Banking: Innovation in Financial Services. Retrieved June 28, 2009, from http://serviciodeestudios.bbva.com/TLBB/fbin/ITEND_070205_global trends_12_tcm268-145417.pdf

Grabner-Krauter, S. & Kaluscha, E. (2003). Empirical Research in On-line Trust: A Review and Critical Assessment. *International Journal of Human-Computer Studies*, 58, 783-812.

Gu, J., Lee, S., & Suh, Y. (2009). Determinants of Behavioural Intention to Mobile Banking. *Expert Systems with Applications*, 36(1), 11605-11616.

Gupta, P. (2005). Web Services: An Enabler for Mobile Banking. *An Intellect White Paper*. Retrieved May 18, 2009, from http://www.prdomain.com/upload/100/10032034.pdf

Hall, E.T. (1976). *Beyond Culture*. New York: Anchor Books/Doubleday.

Han, W. Y., Kwon, O. C., Park, J. H., & Kang, J. (2005). A Gateway and Framework for Telematics Systems Independent on Mobile Networks. *ETRI Journal*, 27(1), 106-109.

Harris, P., Rettie, R., & Kwan, C. C. (2005). Adoption and Usage of M-Commerce: A Cross-Cultural Comparison of Hong Kong and the United Kingdom. *Journal of Electronic Commerce Research*, 6(3), 210-224.

Hofstede, G. (1980). *Cultural Consequences: International Differences in Work Related Values*. Beverly Hills: Sage.

Hofstede, G. (1997). *Cultures and Organisations: Software of the Mind*. London: Mc Graw Hill.

Hofstede, G. (2001). *Cultural Consequences : Comparing Values, Behaviours, Institutions, and organisations across Nations*. Thousand Oaks: Sage.

Hofstede, G., Neuijen, B., & Ohavy, D. D. (1990). Measuring Organisational Cultures: A Qualitative and Quantitative Study Across Twenty Cases. *Administrative Science Quarterly*, 35, 286-316.

Hussey, J., & Hussey, R. (2003). *Business Research: A Practical Guide for Undergraduate and Postgraduate Students*. (2nd ed.). Basingstoke: Palgrave Macmillan.

ITU (2007). *Telecommunication/ICT Market Trends in Africa 2007*. Retrieved May 21, 2009, from http://www.itu.int/ITU-D/ict/statistics/material/af_report07.pdf

ITU (2008, March 11). *End-User Sharing*. Paper Presented at the 2008 8th Global Symposium for Regulators, Pattaya, Thailand. Retrieved June 28, 2009, from http://icttoolkit.infodev.org/en/Document.3483.pdf

Kijsanayotin, B., Pannarunothai, S., & Speedie, S. M. (2008). Factors Influencing Health Information Technology Adoption in Thailand's Community Health Centres: Applying the UTAUT Model. *International Journal of Medical Informatics*, 78(2009), 404-416.

Kim, H., Oh, R., Lee, S., Kim, T., Lee, S., Chung, Y., & Cho, C. (2008). A Fingerprint-based User Authentication Protocol Considering both the Mobility and Security in the Telematics Environment. *Computer Standards & Interfaces*, 31(6), 1098-1107.

Kurkovsky, S., & Harihar, K. (2006). Using Ubiquitous Computing in Interactive Mobile Marketing. *Personal and Ubiquitous Computing*, 10(4), 227-240.

Ladipo, M. (2009). Access to Financial Services in Nigeria. Retreieved June 26, 2009, from http://www.efina.org.ng/reports_publications.html

Lee, K. C., & Chung, N. (2009). Understanding FactorsAffecting Trust in and Satisfaction with Mobile Banking in Korea: A Modified Delone and McLean's Model Perspective. *Interacting with Computers*, 21(5), 385-392.

Lee, M. (2009). Factors Influencing the Adoption of Internet Banking: An Integration of TAM and TPB with Perceived Risk and Perceived Benefit. *Electronic Commerce Research and Applications,* 8, 130-141.

Lee, M. S. Y., McGoldrick, P. J., Keeling, K. A., & Doherty, J. (2003). Using ZMET to Explore Barriers to the Adoption of 3G Mobile Banking Services. *International Journal of Retail & Distribution Management*, 31(6), 340-348.

Li, Y., & Yeh, Y. (2010). Increasing Trust in Mobile Commerce Through Design Aesthetics. *Computers in Human Behaviour*, 26(4), 673-684.

Lu, Y., Xiao, Y., Sears, A., & Jacko, J. A. (2005). A Review and a Framework of Handheld Computer Adoption in Healthcare. *International Journal of Medical Informatics*, 74(5), 409-422.

Luarn, P., & Lin, H. (2005). Toward an Understanding of Behavioural Intention to Use Mobile Banking. *Computers in Human Behaviour,* 21(6), 873-891.

Luo, X., Li, H., Zhang, J., & Shim, J. P. (2010). Examining Multi-Dimensional Trust and Multi-Faceted Risk in Initial Acceptance of Emerging Technologies: An Empirical Study of Mobile Banking Services. *Decision Support Systems*, 49(2), 222-234.

Mallat, N., Rossi, M., & Tuunainen, V. K. (2004). Mobile Banking Services: Adopting New and Innovating Mobile Financial Applications and Service Provisioning Methods. *Communications of the ACM,* 47(5), 42-46.

Mallat, N., Rossi, M., Tuunainen, V. K., & Öörni, A. (2008). An Empirical Investigation of Mobile Ticketing Service Adoption in Public Transportation. *Personal and Ubiquitous Computing*, 12(1), 57-65.

Maña, A., Martínez, J., Matamoros, S., & Troya, J. M. (2001, June 20) *GSM-Ticket: Generic Secure Mobile Ticketing Service*. Paper Presented at the 2001 Gemplus Developer Conference, Paris, France. Retrieved June 24, 2009, from http://citeseerx.ist.psu.edu/viewdoc/download?doi=10.1.1.16.1693&rep=rep1&type=pdf

Marchewka, J. T., Liu, C., & Kostiwa, K. (2007). An Application of the UTAUT Model for Understanding Student Perceptions Using Course Management Software. *Communications of the IIMA,* 7(2), 93-103.

Merchant, L. (2007). Exploring the Influence of Cultural Values on the Acceptance of Information Technology: An Application of the Technology Acceptance Model. *Issues in Informing Science and Information Technology,* 4, 431-443.

Min, Q., Ji, S., & Qu, G. (2008). Mobile Commerce User Acceptance Study in China: A Revised UTAUT Model. *Tsinghua Science and Technology,* 13(3), 257-264.

MMA: Mobile Marketing Association (2009). Mobile Banking Overview. Retrieved May 21, 2009, from http://www.mmaglobal.com/mbankingoverview.pdf

Molla, A., & Licker, P. S. (2001). E-commerce Systems Success: An Attempt to Extend and Respecify the Delone and Maclean Model of IS Success. *Journal of Electronic Commerce Research*, 2(4), 131-141.

M-pay Nigeria Conference (2009, June 2). Retrieved April 28, 2009, from http://mpay.financialtechnologyafrica.com/news.html

MTN Rolls Out Fundamo's Mobile Wallet in Africa. (2009, March 16). *Mobile Marketing Magazine.* Retrieved June 28, 2009, from http://www.mobilemarketingmagazine.co.uk/2009/03/mtn-rolls-out-fundamos-mobile-wallet-in-africa.html

Muganda, N. O., Bankole, F. O. & Brown, I. (2008). *Internet Diffusion in Nigeria: is the 'Giant of Africa' Waking Up?* Paper Presented at the 10th Annual Conference on World Wide Web Applications, www2008, University of Cape Town, September 3-5, 2008, South Africa [978-0-620-42642-8].

Myers, M. D. (2009). *Qualitative Research in Business Management.* London: Sage.

Myers, M.D (1997). Qualitative Research in Information Systems. *MIS Quarterly Discovery,* 21(2), 241-242.

Ndukwe, E. (2005). *Telecom Liberalization in Nigeria: Opening up the Market and Sector Reform*. Paper presented at the 2005 SATCOM Conference. Retrieved April 27, 2009.

Ngai, E. W. T., & Gunasekaran, A. (2005). A Review for Mobile Commerce Research and Applications. *Decision Support Systems*, 43(1), 3-15.

Okazaki, S. (2005). New Perspectives on M-Commerce Research. *Journal of Electronic Commerce Research*, 6(3). 160- 165.

Opara, S. (2009, April 13). Zain, MTN apply for mobile banking licences. *The Punch.* Retrieved June 27, 2009, from http://www.punchontheweb.com/Article-print2.aspx?theartic=Art20090413356150

Orlikowski, W. J. & Baroudi, J. J. (1991). Studying Information Technology in Organisations: Research Approaches and Assumptions. *Information Systems Research*, 2 (1), 1-28.

Oshlyansky, L., Cairns, P., & Thimbleby, H. (2007, September 3). *Validating the Unified Theory of Acceptance and Use of Technology (UTAUT) Tool Cross-culturally*. Paper Presented at the 2007 21st BCS HCI Group Conference, Lancaster University, UK. Retrieved May 10, 2009, from The ACM Digital Library.

Parikh, T. S., & Lazowska, E. D. (2006, May 23). *Designing an Architecture for Delivering Mobile Information Services to the Rural Developing World.* Paper Presented at the 2006 15th International Conference on World Wide Web, Edinburgh, Scotland. Retrieved May 18, 2009, from The ACM Digital Library.

Patel, K. (2009). *Investigating multi-channel banking adoption in South Africa.* Masters Thesis. University of Cape Town.

Patrikakis, C. Z., Fafali, P., Minogiannis, N., & Kourbelis, N. (2009). Ubiquitous Access to Information Through Portable, Mobile and Handheld Devices. Retrieved October 2, 2009, from http://www.igi-global.com/downloads/excerpts/8381.pdf

Phan, D. D. (2001). E-business Development for Competitive Advantages: A Case Study. *Information & Management,* 40(6), 581–590.

Pousttchi, K., & Wiedemann, D. G. (2006, June 26). *A Contribution to Theory Building for Mobile Marketing: Categorizing Mobile Marketing Campaigns through Case Study Research*. Paper Presented at the 2006 International Conference on Mobile Business, Copenhagen, Denmark. Retrieved May 18, 2009, from Computer Society Digital Library.

Ramburn, A. (2007). *Understanding Use and Adoption of Mobile Data Services in Two African Countries*. Masters Thesis. University of Cape Town.

Riivari, J. (2005). Mobile Banking: A Powerful New Marketing and CRM Tool for Financial Services Companies all over Europe. *Journal of Financial Services Marketing,* 10(1), 11-20.

Rogers, E. M. (2002). Diffusion of Preventive Innovations. *Addictive Behaviours,* 27, 989–993.

Rogers, E. M. (2003). *Diffusion of innovations* (5th ed.). New York: Free Press.

Romano. N. C., & Fjermestad, J. (2003). Electronic Commerce Customer Relationship Management: A Research Agenda. *Information Technology and Management*, 4, 233–258.

Sarrazin, P., Vallerand, R., Guillet, E., Pelletier, L., & Cury, F. (2002). Motivation and Dropout in Female Handballers: A 21-month Prospective Study. *European Journal of Social Psychology*, 32, 395–418.

Schein, E. (1985). *Organisational Culture and Leadership*, Jossey-Bass: San Fransisco.

Schwabe, G., & Göth, C. (2005). Mobile Learning with a Mobile game: Design and Motivational Effects. *Journal of Computer Assisted learning*, 21, 204-216.

Scornavacca, E., & Hoehle, H. (2006). *Mobile Banking in Germany*. Retrieved May 18, 2009, from http://project.hkkk.fi/helsinkimobility/papers/Mobile%20Applications_1_2.pdf

Shin, D. (2009). Towards an Understanding of the Consumer Acceptance of Mobile Wallet. *Computers in Human Behaviour*, 25, 1343-1354.

Srite, M., & Karahanna, E. (2006). The Role of Espoused National Cultural Values in Technology Acceptance. *MIS Quarterly*, 30(3), 670-704.

Straub, D., Keil, M., & Brenner, W. (1997). Testing the Technology Acceptance Model Accross Cultures: A Three Country Study. *Information and Management*, 33, 1-11.

Sung, T. K. (2006). E-commerce Critical Success Factors: East Vs. West. *Technological Forecasting & Social Change*, 73(9), 1161–1177.

Suoranta, M. (2003). *Adoption of Mobile Banking in Finland*. Doctoral Dissertation. Jyväskylä University Printing House, Jyväskylä and ER-paino, Lievestuore.

Tae-gyu, K. (2004). South Korea Sets Trends in Global Mobile Banking. Retrieved May 18, 2009, from http://times.hankooki.com/

Taylor, S., & Todd, P.A. (1995). Understanding Information Technology Usage: A Test of Competing Models. *Information Systems Research*, 6, 144-176.

Teo, T. S. H., & Pok, S. H. (2003). Adoption of WAP-Enabled Mobile Phones among Internet Users. *International Journal of Management Science,* Omega 31(6), 483– 498.

The African Executive (2009). Banking the Unbanked: Going Mobile in Africa. Retrieved May 23, 2009, from http://www.africanexecutive.com/modules/magazine/articles.php?article=3541#

Thompson, R. L., Higgins, C. A., & Howell, J. M. (1991). Personal Computing: Toward a Conceptual Model of Utilisation. *MIS Quarterly*, 15(1), 125-143.

Tiwari, R., & Buse, S. (2007). *The Mobile Commerce Prospects: A Strategic Analysis of Opportunities in the Banking Sector*. Hamburg, Germany: Hamburg University Press.

Triandis, C. H. (1980). Values, attitudes, and interpersonal behaviour, Nebraska Symposium on Motivation, 1979: Beliefs, Attitudes, and Values, University of Nebraska Press, Lincoln, NE.

Trompenaars, F., & Hampden-Turner, C. (1998). *Riding The Waves Of Culture*, London: Nicholas Bearley.

UNCTAD: 2004. United Nations Conference on Trade and Development. E-commerce and Development Report 2004. New York and Geneva. Retrieved June 26, 2009, from. http://www.unctad.org/en/docs/ecdr2004_en.pdf

UNCTAD: 2007. United Nations Conference on Trade and Development. Science and Technology for Development: A New Paradigm for ICT. *Information Economy Report 2007-2008*. New York.

Vallerand, R. J. (2000). Deci and Ryan's Self-Determination Theory: A View from the Hierarchical Model of Intrinsic and Extrinsic Motivation. *Psychological Enquiry,* 11(4), 312-318.

Van Biljon, J., & Kotzé, P. (2007). Modelling the Factors that Influence Mobile Phone Adoption. *ACM International Conference Proceeding Series*, 226, 152-161.

Varshney, U., & Vetter, R. (2002). Mobile Commerce: Framework, Applications and Networking. *Mobile Networks and Applications*, 7(3), 185-198.

Veiga, J. F., Floyd, S., & Dechant, K. (2001). Towards Modelling the Effects of National Culture on It Implementation and Acceptance. *Journal of Information Technology,* 16, 145-158.

Venkatesh, V., & Davis, F.D. (2000). A Theoretical Extension of the Technology Acceptance Model: Four Longitudinal Field Studies. *Management Science*, 46(2), 186-204.

Venkatesh, V., & Speier, C. (1999). Computer Technology Training in the Workplace: A Longitudinal Investigation of the Effect of Mood. *Organisational Behaviour and Human Decision Processes*, 79(1), 1–28.

Venkatesh, V., Morris, M. G., Davis G. B., & Davis, F. D. (2003). User Acceptance of Information Technology: Toward a unified view. *MIS Quarterly*, 27(3), 425-478.

Vijayasarathy, L. R. (2004). Predicting Consumer Intentions to Use On-line Shopping: The Case for an Augmented Technology Acceptance Model. *Information and Management*, 41(6), 747-762.

Wang, H., & Yang, H. (2005). The Role of Personality Traits in UTAUT Model under Online Stocking. *Contemporary Management Research*, 1(1), 69-82.

Wei, J., & Ozok, A. (2005). Development of a Web-based Mobile Airline Ticketing Model with Usability Features. *Industrial Management & Data Systems*, 105(9), 1261-1277.

Wei, J., Stankosky, M., Calabrese, F., & Lu, L. (2008). A Framework for Studying the Impact of National Culture on Knowledge Sharing Motivation in Virtual Teams. *The Journal of Information and Knowledge Management Systems*, 38(2), 221-231.

Wong, C. C., & Hiew, P. L. (2005, August 15). *Correlations between Factors affecting the Diffusion of Mobile Entertainment in Malaysia.* Paper Presented at the 2005 7th International Conference on Electronic Commerce, 2005, August 15-17, Xi'an, China. Retrieved June 18, 2009, from The ACM Digital Library.

Wood, R., & Bandura, A. (1989). Social Cognitive Theory of Organisational Management. *The Academy of Management Review*, 14(3), 361-384.

Wray, R. (2008, June 17). Cash In Hand: Why Africans are Banking on the Mobile Phone. *The Guardian*. Retrieved June 28, 2009, from http://www.kiwanja.net/database/article/article_cash_hand_banking.pdf

Wu, J., & Wang, Y. (2006). Development of a Tool for Selecting Mobile Shopping Site: A Customer Perspective. *Electronic Commerce Research and Applications*, 5(3), 192–200.

Wu, Y. L., Tao, Y. H., & Yang, P. C. (2008). The Use of Unified Theory of Acceptance and Use of Technology to confer the Behavioural Model of 3G Mobile Telecommunication Users. *Journal of Statistics & Management Systems,* 11(5), 919–949.

Xu, S. X., Yan, X. & Zheng, X. (2008). Communication Platforms in Electronic Commerce: A Three-Dimension Analysis. *Info*, 10(2), 47-56.

Yang, K. C. C. (2005). Exploring Factors Affecting the Adoption of Mobile Commerce in Singapore. *Telematics and Informatics,* 22(3), 257–277.

Yang, W., Cheng, H. & Dia, J. (2008). A Location-aware Recommender System for Mobile Shopping Environments. *Expert Systems with Applications,* 34, 437–445.

Yu, J., Ha, I., Choi, M. & Rho, J. (2005). Extending the TAM for a t-commerce. *Information and Management,* 42(7), 965-976.

Zakour, A. B. (2004). *Cultural Differences and Information Technology Acceptance*. Paper Presented at the 2004 7th Annual Conference of the Southern Association for Information Systems. Retrieved June 10, 2009, from http://sais.aisnet.org/sais 2004/.%5CZakour.pdf

Zhou, T., Lu, Y., & Wang, B. (2010). Integrating TTF and UTAUT to Explain Mobile Banking User Adoption. *Computers in Human Behaviour*, 26(4), 760-767.

Appendix A: Cover Letter for Participation in Questionnaire Survey

Department of Information Systems

Leslie Commerce Building
Engineering Mall, Upper Campus
OR Private Bag, Rondebosch 7701
Cape Town
Tel: 650-2261
Fax No: (021) 650-2280

Request to participate in a research survey

Dear Participant,

I am an Information Systems Masters student at the University of Cape Town. I am conducting a research on a comparative study of mobile banking in South Africa and Nigeria. Mobile banking is one of the value-added service provided by the banking industry to their customers.
The study will involve gathering information with the use of questionnaires. This is to request your participation as a participant in the questionnaire survey. This questionnaire takes up to 15 minutes to complete. The data collected will be kept confidential. Your identity will be kept anonymous as no identifiable information such as names, contact phone and address will be requested. Also, data gathered will be treated with strict confidentiality.

Participation in this survey is strictly voluntary. The set of questions have been approved by Commerce Faculty Ethics in Research Committee. A copy will be made available to you, should you request the final result of the survey. Thank you for your anticipated participation.

Kind Regards,

Omolola Bankole
Masters Student
University of Cape Town

For any queries, please contact:
E-mail: omolola.bankole@uct.ac.za
Cell: +27 767 22 4072

OR

Research Supervisor:
Dr. Eric Cloete
Senior Lecturer
Department of Information Systems
University of Cape Town
E-Mail: eric.cloete@uct.ac.za
Phone: +2721 650 2280

CONSENT FORM
Signing this form indicates your participation in the research "Mobile Banking: A Comparative Study of South Africa and Nigeria".

Signature:.....

Date: .....

Appendix B: Survey Questions

A. Demographic Information (*Please select as appropriate*)

Gender

☐Female ☐Male

Age

☐<20 ☐ 21-25 ☐ 26-30 ☐31-35 ☐36-40 ☐41-45 ☐46-50 ☐51-55 ☐56-60 ☐≥61

Marital Status

☐ Widowed ☐ Married ☐ Divorcee ☐ Single ☐ Other

Nationality

☐ South African Citizen ☐Nigerian Citizen ☐ Other Country's Citizens

Monthly net income

☐ < R5000
☐ R5001 - R10000
☐ R10001 - R15000
☐ R15001 - R20000
☐ R20001 - R25000
☐ R25001 - R30000
☐ R30001 - R35000
☐ R35001 - R40000
☐ ≥ R40001

Occupation

☐ Student
☐ Academic
☐ Private employee
☐ Government employee
☐ Entrepreneur
☐ Manager
☐ Self employed
☐ Other please specify_____

B. Multiple choice questions (*Please select one or more options*)

What are the advantages of your use of mobile banking?

☐ Ubiquitous-conducting banking activities anywhere, anytime
☐ SMS alerts
☐ Fast and convenient banking transactions
☐ None
☐ Other please specify_____

What are the disadvantages of your use of mobile banking?

☐ Security risk
☐ Inconvenient to use mobile devices for banking activities
☐ Too expensive
☐ None
☐ Other please specify_____

In your opinion, what could attract users into accepting mobile banking services?

- ☐ Mobile devices with better input for convenience of use
- ☐ Lower cost of utilisation
- ☐ Mobile devices with larger display
- ☐ Higher speed in banking transaction
- ☐ Other please specify_____

C. Mobile Banking Information (*Please tick as appropriate*)

Do you own a bank account? ☐Yes ☐ No
Do you have a mobile phone? ☐Yes ☐No
Do you have a PDA or a similar device? ☐ Yes ☐ No
Do you use internet banking services? ☐ Yes ☐ No
Do you access your bank account via the internet on a mobile device? ☐Yes ☐ No
Does your bank provide mobile (or SMS) banking services? ☐Yes ☐ No
Do you use mobile banking services? ☐Yes ☐ No
If 'No' are you planning to use it in the nearest future? ☐Yes ☐ No

D. Mobile banking Functions (*Please tick as appropriate*)

How often do you perform the following on a mobile device?	Several times daily	1-2 times daily	2-6 times weekly	1-6 times monthly	Less than 1 time a month	Never or Seldom
Mobile Accounting						
Interbank & intra bank money transfer	Several times daily	1-2 times daily	2-6 times weekly	1-6 times monthly	Less than 1 time a month	Never or Seldom
Payments to a third party	Several times daily	1-2 times daily	2-6 times weekly	1-6 times monthly	Less than 1 time a month	Never or Seldom
Standing orders for bill payments	Several times daily	1-2 times daily	2-6 times weekly	1-6 times monthly	Less than 1 time a month	Never or Seldom
Subscribing for insurance policies (e.g. travel insurance)	Several times daily	1-2 times daily	2-6 times weekly	1-6 times monthly	Less than 1 time a month	Never or Seldom
Order cheque book administration	Several times daily	1-2 times daily	2-6 times weekly	1-6 times monthly	Less than 1 time a month	Never or Seldom
Access administration (e.g. ordering new PIN)	Several times daily	1-2 times daily	2-6 times weekly	1-6 times monthly	Less than 1 time a month	Never or Seldom
Mobile Brokerage						
Selling & purchasing stocks & securities	Several times daily	1-2 times daily	2-6 times weekly	1-6 times monthly	Less than 1 time a month	Never or Seldom
Access administration (e.g. ordering new PIN)	Several times daily	1-2 times daily	2-6 times weekly	1-6 times monthly	Less than 1 time a month	Never or Seldom

Mobile banking Functions Continued (*Please tick as appropriate*)

Mobile Financial Information						
Balance enquiries	Several times daily	1-2 times daily	2-6 times weekly	1-6 times monthly	Less than 1 time a month	Never or Seldom
Statement requests	Several times daily	1-2 times daily	2-6 times weekly	1-6 times monthly	Less than 1 time a month	Never or Seldom
SMS alert for account transactions	Several times daily	1-2 times daily	2-6 times weekly	1-6 times monthly	Less than 1 time a month	Never or Seldom
SMS alert for logging in/entry into online banking	Several times daily	1-2 times daily	2-6 times weekly	1-6 times monthly	Less than 1 time a month	Never or Seldom
SMS alert for stock prices	Several times daily	1-2 times daily	2-6 times weekly	1-6 times monthly	Less than 1 time a month	Never or Seldom
Enquiry of branch & ATM locations	Several times daily	1-2 times daily	2-6 times weekly	1-6 times monthly	Less than 1 time a month	Never or Seldom
Stock market enquires and reports	Several times daily	1-2 times daily	2-6 times weekly	1-6 times monthly	Less than 1 time a month	Never or Seldom
Exchange rate & interest rate enquiries	Several times daily	1-2 times daily	2-6 times weekly	1-6 times monthly	Less than 1 time a month	Never or Seldom
Product information, current offers & conditions	Several times daily	1-2 times daily	2-6 times weekly	1-6 times monthly	Less than 1 time a month	Never or Seldom
Other Mobile banking Functions						
Payment for airline ticket	Several times daily	1-2 times daily	2-6 times weekly	1-6 times monthly	Less than 1 time a month	Never or Seldom
Top up mobile phone airtime (e.g. MTN, Vodacom, e.t.c)	Several times daily	1-2 times daily	2-6 times weekly	1-6 times monthly	Less than 1 time a month	Never or Seldom
Payment for goods & products	Several times daily	1-2 times daily	2-6 times weekly	1-6 times monthly	Less than 1 time a month	Never or Seldom
Payment of Traffic fines	Several times daily	1-2 times daily	2-6 times weekly	1-6 times monthly	Less than 1 time a month	Never or Seldom
Purchase of prepaid utility (e.g. electricity)	Several times daily	1-2 times daily	2-6 times weekly	1-6 times monthly	Less than 1 time a month	Never or Seldom
Purchase of prepaid/post-paid phone (e.g. Telkom/Globel recharge)	Several times daily	1-2 times daily	2-6 times weekly	1-6 times monthly	Less than 1 time a month	Never or Seldom
Purchase of lotto tickets	Several times daily	1-2 times daily	2-6 times weekly	1-6 times monthly	Less than 1 time a month	Never or Seldom
Apply for loans	Several times daily	1-2 times daily	2-6 times weekly	1-6 times monthly	Less than 1 time a month	Never or Seldom

Fill in other mobile banking services you use which have not been mentioned above

Please specify other mobile banking functions (for example: SMS bundles, Mxit Moola, Soccer 6, e.t.c)						
_____	Several times daily	1-2 times daily	2-6 times weekly	1-6 times monthly	Less than 1 time a month	Never or Seldom
_____	Several times daily	1-2 times daily	2-6 times weekly	1-6 times monthly	Less than 1 time a month	Never or Seldom
_____	Several times daily	1-2 times daily	2-6 times weekly	1-6 times monthly	Less than 1 time a month	Never or Seldom
_____	Several times daily	1-2 times daily	2-6 times weekly	1-6 times monthly	Less than 1 time a month	Never or Seldom

E. Technology Acceptance Information (*Please select as appropriate*)

1 = Strongly agree; 2 = Agree; 3 = Somewhat agree; 4 = Not applicable; 5 = Somewhat disagree; 6 = Disagree; 7 = Strongly disagree		**1**	**2**	**3**	**4**	**5**	**6**	**7**
1	[US1] Mobile banking services are reliable and easy to use	1	2	3	4	5	6	7
2	[US2] I derive pleasure from using mobile banking services because I can use it anytime and anywhere	1	2	3	4	5	6	7
3	[US3] I like using mobile banking because it provides me with accurate and timely information on my account	1	2	3	4	5	6	7
4	[US4] I am content with using mobile banking services	1	2	3	4	5	6	7
5	[TP1] I believe my mobile service provider adheres to a set of rules which protects my bank details	1	2	3	4	5	6	7
6	[TP2] I believe my mobile service provider is competent and trustworthy	1	2	3	4	5	6	7
7	[TP3] I believe my personal and bank information are well protected by my mobile service provider	1	2	3	4	5	6	7
8	[TP4] I believe privacy is assured with my mobile service provider	1	2	3	4	5	6	7
9	[TP5] I trust my bank's security features	1	2	3	4	5	6	7
10	[UE1] I find using mobile banking services at my leisure useful in my everyday life	1	2	3	4	5	6	7
11	[UE2] I find using mobile banking to be very flexible and comfortable to use	1	2	3	4	5	6	7
12	[UE3] Mobile banking helps me in attaining personal satisfaction	1	2	3	4	5	6	7
13	[UE4] I derive utmost enjoyment in using mobile banking services	1	2	3	4	5	6	7
14	[EE1] I have a clear understanding of mobile banking services	1	2	3	4	5	6	7

Technology Acceptance Information Continued (*Please select as appropriate*)

1 = Strongly agree; 2 = Agree; 3 = Somewhat agree; 4 = Not applicable; 5 = Somewhat disagree; 6 = Disagree; 7 = Strongly disagree		**1**	**2**	**3**	**4**	**5**	**6**	**7**
15	[EE2] It is easy for me to develop the skill I need to use mobile banking services	1	2	3	4	5	6	7
16	[EE3] I find mobile banking easy to use	1	2	3	4	5	6	7
17	[EE4] Learning to operate mobile devices for banking services is easy for me	1	2	3	4	5	6	7
18	[SF1] People who influence my behaviour think that I should use mobile banking	1	2	3	4	5	6	7
19	[SF2] People who are important to me think that I should use mobile banking	1	2	3	4	5	6	7
20	[SF3] My bank provides mobile banking applications	1	2	3	4	5	6	7
21	[SF4] My bank has been very supportive of mobile banking	1	2	3	4	5	6	7
22	[SF5] My bank encourages me to use mobile banking services	1	2	3	4	5	6	7
23	[CC1] I consider mobile banking services to be expensive	1	2	3	4	5	6	7
24	[CC2] I am willing to pay more for my mobile banking services	1	2	3	4	5	6	7
25	[CC3] I find mobile banking very convenient to use	1	2	3	4	5	6	7
26	[CC4] Performing banking activities with the aid of a mobile device is extremely uncomfortable	1	2	3	4	5	6	7
27	[BI1] I intend to use mobile banking in the next 7 days	1	2	3	4	5	6	7
28	[BI2] I predict I will use mobile banking in the next 7 days	1	2	3	4	5	6	7
29	[BI3] I plan to use mobile banking in the next 7 days	1	2	3	4	5	6	7
30	[BI4] I intend to keep using mobile banking in the next 2 - 5 years	1	2	3	4	5	6	7
31	[IDV1] Using mobile banking services is a personal decision	1	2	3	4	5	6	7
32	[IDV2] I use mobile banking services because other people expect me to use it	1	2	3	4	5	6	7
33	[IDV3] The opinion of my family or friends have an impact on my intention to use mobile banking	1	2	3	4	5	6	7
34	[IDV4] The collective opinions of others would strongly influence my intention to use mobile banking	1	2	3	4	5	6	7
35	[PD1] I like being dependent on others	1	2	3	4	5	6	7
36	[PD2] I value the use of more innovative mobile banking services	1	2	3	4	5	6	7
37	[PD3] I normally agree to the expectations or suggestions of others who are seen as important or influential (e.g. my boss/employer)	1	2	3	4	5	6	7
38	[PD4] There is a strong association from social influences (e.g. family, friends, boss or employer) and my intention to use mobile banking	1	2	3	4	5	6	7
39	[UA1] I use mobile banking less often than I need to	1	2	3	4	5	6	7
40	[UA2] I use some mobile banking services more than others	1	2	3	4	5	6	7
41	[UA3] I feel comfortable when I try to use mobile banking services, I find it clear and simple to use.	1	2	3	4	5	6	7

Technology Acceptance Information Continued (*Please select as appropriate*)

1 = Strongly agree; 2 = Agree; 3 = Somewhat agree; 4 = Not applicable; 5 = Somewhat disagree; 6 = Disagree; 7 = Strongly disagree		**1**	**2**	**3**	**4**	**5**	**6**	**7**
42	[UA4] I am conversant/familiar/up-to-date with the use of mobile banking or other IT services	1	2	3	4	5	6	7
43	[M/F1] I like to show a firm statement about my character and individuality	1	2	3	4	5	6	7
44	[M/F2] Mobile banking services are highly efficient and will improve my quality of life	1	2	3	4	5	6	7
45	[M/F3] I place a great value on services and the functions that can be achieved through using mobile banking	1	2	3	4	5	6	7
46	[M/F4] I place a great value on the improved quality of life, personal relationship and other personal gains that can be achieved from using mobile banking services	1	2	3	4	5	6	7
47	[UB1] I use mobile banking to manage my account	1	2	3	4	5	6	7
48	[UB2] I use mobile banking in my everyday life	1	2	3	4	5	6	7
49	[UB3] I use some of the mobile banking services because I have need for them	1	2	3	4	5	6	7
50	[UB4] I strongly recommend others to use mobile banking	1	2	3	4	5	6	7

Is there any other information on your use of mobile banking services you may like to add?

_____

_____

_____

_____

_____

_____

_____

Would you like to receive a copy of the result of this survey? □ **Yes** □ **No**

If 'Yes' please provide your email address_____

Thank you for your time and participation in this survey

Appendix C: Semi Structured Interview

Interview Number:	
Country:	
Date:	
Duration:	

A. Introduction

Introduction and greetings

The purpose of the interview will be stated

The interviewee will be briefed on the ethical measures put in place concerning the information gathered from the interview. The interviewee will be assured of anonymity and confidentiality concerns.

B. Rights of the interviewee

The interviewee is provided with the following information

1. The interviewee may decline the answer to any question
2. The interviewee may decline being recorded
3. The interviewee may provide information at a later time in order to be 100 percent sure of an answer
4. The interviewee may request the a copy of the research findings
5. The interviewee will be forwarded the notes or recordings from the interview for confirmation

C. General information on the interviewee

Gender.....

Age Group.....

□ <20 □ 21-25 □ 26-30 □31-35 □36-40 □41-45 □46-50 □51-55 □56-60 ≥□61

Marital Status.....

Monthly Net Income.....

- ☐ < R5000
- ☐ R5001 - R10000
- ☐ R10001 - R15000
- ☐ R15001 - R20000
- ☐ R20001 - R25000
- ☐ R25001 - R30000
- ☐ R30001 - R35000
- ☐ R35001 - R40000
- ☐ ≥ R40001

Occupation.....

Please state your job function.....

D. General Theme Framework

1. What opinion do you have about the use of m-banking?
2. Which m-banking services do you use?
3. Why do you use these m-banking services?
4. Do you find m-banking easy to use?
5. Why do you not use other m-banking services?
6. What extra skills or training do you require in order to use other m-banking services?
7. In your opinion, what are the advantages of m-banking?
8. In your opinion, what are the disadvantages of m-banking?
9. What do you derive from using m-banking services?

10. What are the main factors that influence the use m-banking
11. What factors do you consider to be the most important when using m-banking?
12. Which factors discourages you from using m-banking?
13. Which factors encourages you to use m-banking?
14. How do you see the cost of m-banking services?
15. Do you any bad experience with using any of the m-banking services you are using? If yes did it affect how you use it now?
16. What issues do you see surrounds m-banking user adoption among individuals?
17. How do you see the use of m-banking in South Africa/ Nigeria?
18. In your opinion, what are the likely m-banking services most used by individuals?
19. Is there anything else you would like to tell me?

E. Conclusion

A brief review of the interview is discussed

F. Appreciation

Appreciate and thank the interviewee

Appendix D: Sample Interview

Interview Number: NIG1
Country: South Africa
Date: 08/03/2010
Duration: 18min 10secs

1. What opinion do you have about the use of m-banking?

M-banking is an aspect of m-commerce. It means you can bank anywhere anytime. It is a very good aspect of mobile commerce that is functional and makes things easier individuals

2. Which m-banking services do you use?

I use SMS alert. For instance, when I transfer money from one account to another through online banking, it notifies me on my mobile phone that the transaction has taken place. Also, when money is deposited into my account, it alerts me on my mobile phone. I also use it to top up my phone airtime and to pay for my Kulula air travel tickets.

3. Why do you use these m-banking services?

It is easy to use. I can check my balance on my phone and know what is in my account. It makes transactions convenient that is why I use it

4. Do you find m-banking easy to use?

Yes it is very easy to use like if you want to recharge your phone, you don't have to the airtime vendors for a top up. You can just use your mobile banking top up service to recharge your phone. If you are at home you don't have to drive out to buy recharge card it is very easy to use because you can do all your transactions at home instead of going to the bank.

5. Why do you not use other m-banking services?

Maybe because they are not available to me basically because of the information maybe I don't know them, so I might not use them. I use the one I really need. The ones that are important and you have at hand. I will like to use some other m-banking services but they are not available to me or I might know about them For instance, the broadband services from First National Bank (FNB) where you use your mobile phone to buy internet time in gigabytes is not available to me so I don't use it

6. What extra skills or training do you require in order to use other m-banking services?

I don't think I need any extra training. I just need information about the services available on m-banking. Since I am literate, I don't think I require any extra skills

7. In your opinion, what are the advantages of m-banking?

It has so many advantages. You can transact anywhere, anytime; anyhow, you get your balance without going to the bank. For instance, my bank is situated in Mowbray so if I need any transaction, I will now drive almost 45 minutes because my place is very far from my bank in Mowbray. Mobile banking makes all this things accessible to me. I don't have to go into the bank I can do whatever I want to do, check my account details, balance and other things through the SMS alert. It has so many advantages it makes life easier, it makes information accessible; it makes your accessible right there on your mobile anywhere you are in the world. I think it is very good. It is a very good aspect of mobile commerce

8. In your opinion, what are the disadvantages of m-banking?

Basically if you look at the advantages of m-banking, far surpasses the disadvantages. The disadvantage of mobile banking is that it can lead to a kind of security issue. That is the only disadvantage but I think all the financial institutions have a way of going about curbing such security issues in recent times. Basically people feel threatened by security issues because of the possibility of losing their mobile phone, thereby exposing their passwords and bank details to fraudsters. That is the only disadvantage I have seen so far.

9. What do you derive from using m-banking services?

I derive satisfaction. I am satisfied with all the mobile banking services I am using at the moment. Instead of going to the counter at the airport, you buy your air ticket with your mobile phone where ever you are. Also, instead of going to the bank and forming a queue to get serviced you can use your mobile banking services. It makes all your transactions things easy and convenient it saves you time and cost of travelling to the bank. You can top up your phone anytime and anywhere it makes life easy.

10. What are the main factors that influence the use m-banking?

It is the accessibility. When people can access what they need at anytime. Accessibility makes people to adopt m-banking. They have access to all their transaction at anytime. Instead of going to Shoprite and queuing up to buy airtime, it is what you can do lying down on your bed

11. What factors do you consider to be the most important when using m-banking?

Cost is a factor to consider. They will look at the cost if it is cost effective. Security is also a factor. They will want to know if their transactions and banking details are secured. I think

people first look at the cost and if the cost is okay, then they look at the security issues that surround it.

12. Which factors discourages you from using m-banking?

Security and cost are discouraging factors. If the cost is okay people will not get discouraged with m-banking. People will look at the cost and in as much as m-banking is interesting is it cost effective to use it? For instance, I use FNB mobile banking services with no charges attached to the services but if I use it with my Standard bank account they charge me per SMS, so I decided not to use m-banking on the Standard account. Instead of using SMS alert on my Standard bank account as well I don't use it because of the cost. Cost is one of the factors users consider. If you are doing a lot of transactions and they are charging you a lot of money you can just imagine how much money will be losing. It you are transferring money to like 20 people just imagine how that will cost you for the SMS alert alone. People also look at the security issue.

13. Which factors encourages you to use m-banking?

It is convenient for me. I know the amount I have in my bank account through SMS alerts and account notifications. If I want to buy my air ticket I do my transaction on the phone through the FNB pay gate and everything is secured. They send me an alert and send the ticket to my email address. It is a good thing.

14. How do you see the cost of m-banking services?

M-banking services in South Africa like FNB is inclusive into your monthly account charges, so it is cost effective

15. Do you any bad experience with using any of the m-banking services you are using? If yes did it affect how you use it now?

No. None at all.

16. What issues do you see surrounds m-banking user adoption among individuals?

Information, people are not really informed about mobile banking and its services. I think that is the main thing that is affecting its use. People need to be informed with what they can do with their mobile without going to the bank

17. How do you see the use of m-banking in South Africa?

The use of mobile banking in South Africa is growing at a rapid rate people are now getting used to it. The banks are also encouraging it. If you open an account today, they will make sure you

open an account that is mobile banking compliant. This meaning that some mobile banking services are included in the account opening package. I think it is growing at a rapid rate

18. In your opinion, what are the likely m-banking services most used by individuals?

SMS alert. This is because any for account you open, SMS alert is included. For example FNB always has the SMS alert as a feature in the account they open for their customers this makes people use SMS alert a lot. Also, the airtime top up service

19. Is there anything else you would like to tell me?

South Africa is an emerging market so m-banking is growing in South Africa and I think it's good when compared to any other African country. M-banking in South Africa is growing coupled with the economic standard of the country

Appendix E: Combined Excel Spread Sheet of Data

P1 | UE1

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	AV	AW	AX	AY
1	QUST NO.	GENDER	AGE	MARITAL	INCOME	OCCUPAT	US1	US2	US3	US4	TP1	TP2	TP3	TP4	TP5	UA4	M/F1	M/F2	M/F3
2	QS1	Female	21-25	Single	<R5000	Student	2	1	2	2	1	1	1	1	1	1	3	2	2
3	QS2	Male	31-35	Divorced	R15001-R20000	Employed	4	4	1	3	1	1	2	2	3	2	5	5	5
4	QS3	Female	31-35	Married	R15001-R20000	Employed	1	2	2	2	1	1	1	2	2	1	2	2	2
5	QS4	Female	26-30	Married	R10001-R15000	Employed	2	2	2	2	1	1	2	2	3	2	2	2	2
6	QS5	Male	51-55	Married	R35001-R40000	Employed	1	1	1	2	1	2	1	2	1	2	2	2	2
7	QS6	Male	26-30	Other	R15001-R20000	Employed	2	1	1	1	1	2	2	2	2	3	2	3	3
438	QN437	Female	21-25	Single	<R5000	Student	4	1	3	2	2	2	3	2	1	1	2	2	3
439	QN438	Female	21-25	Single	R5001-R10000	Employed	3	2	3	3	3	3	4	4	5	2	2	2	2
440	QN439	Female	31-35	Married	R15001-R20000	Employed	2	3	3	3	3	3	3	3	3	3	2	3	3
441	QN440	Female	21-25	Single	<R5000	Student	1	1	2	2	1	2	1	2	3	3	2	3	2
442	QN441	Male	26-30	Married	R20001-R25000	Employed	4	3	3	3	3	2	1	2	3	1	2	2	2
443	QN442	Male	26-30	Married	R20001-R25000	Employed	2	3	3	3	3	3	3	3	2	2	1	1	3
444	QN443	Female	26-30	Married	R20001-R25000	Employed	3	1	1	2	1	1	1	1	2	3	1	3	1
445	QN444	Male	26-30	Single	R5001-R10000	Employed	3	2	2	3	2	2	2	3	3	2	3	3	4
446	QN445	Male	26-30	Married	R20001-R25000	Employed	2	1	2	2	3	3	3	7	2	2	3	2	2
447	QN446	Female	26-30	Married	R20001-R25000	Employed	3	1	2	3	3	3	3	3	2	7	3	3	1
448	QN447	Male	26-30	Married	R20001-R25000	Employed	3	4	4	5	2	2	2	2	7	1	2	2	2
449	QN448	Male	26-30	Married	R20001-R25000	Employed	4	4	4	4	4	4	4	4	4	4	2	2	5
450	QN449	Female	26-30	Married	R5001-R10000	Employed	3	2	2	2	2	2	2	2	2	7	3	3	5
451	QN450	Male	<20	Single	<R5000	Student	3	3	6	3	3	3	3	3	6	6	3	6	3
452	QN451	Male	31-35	Married	R30001-R35000	Employed	4	2	1	2	2	1	2	1	1	6	1	3	1

Appendix F: Factor Loadings of Nigerian Data – Screen Shot

Factor Loadings (Varimax normalized) (Relevant_Nigerian_Data.sta)
Extraction: Principal components
(Marked loadings are >.500000)

Variable	Factor 1	Factor 2	Factor 3	Factor 4	Factor 5	Factor 6	Factor 7	Factor 8	Factor 9	Factor 10	Factor 11	Factor 12
US1	0.534994	0.209346	0.097613	-0.025142	-0.109634	0.163580	0.024403	-0.080100	0.316370	0.012852	0.055923	0.216112
US2	0.742227	-0.186291	-0.085729	0.043313	0.054888	0.044953	0.068943	0.108890	-0.052355	0.087756	0.250208	0.070888
US3	0.856468	-0.015471	0.029013	-0.032958	0.031715	0.078074	0.039372	0.150204	0.083067	0.022813	0.058295	0.102493
US4	0.793349	0.101600	0.042177	-0.039264	0.006121	0.009394	0.100637	0.093862	0.053479	0.116911	0.016136	0.211621
TP1	0.398910	0.029931	0.029171	0.089515	-0.089477	-0.002818	0.184072	0.035922	0.207756	0.080051	-0.091697	0.646469
TP2	0.213734	0.084856	0.071694	0.066947	-0.021379	0.041880	0.077078	0.082779	0.236412	-0.003018	0.080888	0.736680
TP3	0.077144	-0.117000	-0.060294	-0.039073	-0.007337	0.074079	-0.028521	0.125045	0.361386	0.142890	0.309169	0.535522
TP4	0.066927	0.077462	-0.082789	0.166571	-0.134115	0.029640	-0.187895	0.247535	0.117334	0.211463	0.084683	0.599206
UE1	0.183263	0.091173	0.117337	0.130654	-0.118539	0.106603	0.327925	0.002112	-0.008296	0.121523	0.788444	0.350218
UE2	0.147497	0.174135	0.041500	0.125501	-0.098222	0.055483	0.142849	0.110630	-0.173705	-0.026497	0.771356	0.419103
UE3	0.034501	0.041689	-0.073623	0.043822	-0.033579	0.111287	0.036934	0.119510	0.108434	0.016015	0.819357	0.090584
UE4	0.227680	0.056188	-0.022884	0.109026	0.016091	-0.013309	0.190642	0.122596	0.335125	0.217506	0.674957	-0.076784
EE1	0.122935	0.067343	-0.022396	0.127067	-0.131022	0.041781	0.090608	0.107284	0.651492	0.204394	0.272297	0.115361
EE3	0.133467	0.001762	0.147348	0.201990	-0.137041	0.109786	0.047134	0.114175	0.637294	0.049708	0.182869	0.167002
EE4	0.009172	0.006199	0.087333	0.029254	0.019014	0.097341	0.084098	-0.039548	0.755530	-0.010564	-0.102324	0.212966
SF1	-0.028507	-0.025855	0.039769	0.736893	0.131610	-0.003875	0.165856	0.056593	0.105103	-0.040800	0.015942	-0.023883
SF2	-0.062029	0.102183	0.052262	0.816970	0.080998	0.080919	0.129715	0.009425	0.047594	-0.007313	-0.020233	0.119234
SF3	0.007154	-0.050386	-0.017354	0.787916	-0.107144	-0.010273	-0.091969	0.111701	0.005341	0.042246	0.105737	0.027265
SF4	-0.018605	0.061424	-0.011896	0.781235	0.020323	0.083390	0.097149	-0.002404	0.025985	0.178011	0.026144	0.151614
SF5	0.069924	0.024049	-0.016016	0.732468	-0.094559	-0.130523	-0.099114	0.028507	0.071802	0.055897	0.075926	-0.015663
CC1	-0.041244	-0.003424	0.865730	-0.082760	0.045288	0.046080	-0.070964	-0.034459	0.078428	-0.032205	0.045179	0.088907
CC2	-0.029202	-0.061707	0.857612	0.109535	0.063906	0.032429	-0.034144	0.013966	-0.027620	0.028150	0.110375	0.049681
CON1	0.029384	0.127847	0.815574	0.001150	0.060684	0.050257	0.098763	0.063847	0.075856	0.000438	-0.064673	-0.070342
CON2	0.094160	0.154921	0.799374	0.016318	-0.025902	0.043532	-0.044404	0.007316	0.046900	0.005629	-0.136454	-0.035713
BI1	0.129581	-0.088103	0.010739	0.008201	0.136480	0.036860	0.748062	0.119450	0.176242	0.041306	0.122501	0.083608
BI2	0.071929	-0.106242	0.018632	0.081402	0.033257	0.004980	0.870642	0.089825	0.016486	0.068413	0.064745	0.049121
BI3	0.016964	-0.039697	-0.107619	0.071896	0.000130	0.110617	0.768333	0.154845	0.021490	0.207122	0.085478	-0.049151
IDV1	-0.088454	-0.119997	0.057153	0.006376	0.858429	-0.010320	0.075920	0.000341	-0.045647	-0.062997	-0.022071	-0.034268
IDV2	-0.018212	-0.043757	0.026185	0.036918	0.844933	-0.089873	-0.033878	-0.070302	-0.127655	0.021891	0.003973	0.038133
IDV3	0.072924	0.004239	0.005573	0.014205	0.851289	-0.028547	0.113897	0.040680	-0.002749	0.012030	0.004529	-0.067886
IDV4	0.045533	-0.153058	0.054651	-0.037211	0.787156	0.001058	-0.008953	0.024940	0.002004	-0.084350	-0.093887	-0.129689
PD1	0.047450	0.891462	-0.059439	-0.002566	0.072664	-0.051537	0.094577	-0.064581	-0.034040	-0.044235	-0.071661	-0.084547
PD2	-0.032878	0.866306	-0.051743	-0.017135	0.071689	-0.043952	0.060420	-0.028105	-0.033760	-0.022043	-0.100433	-0.034372
PD3	-0.039355	0.883647	-0.045084	-0.053127	0.103114	0.069085	0.018633	0.083477	0.024576	-0.007463	0.011378	0.031617
PD4	-0.005937	0.872902	-0.053994	-0.028185	0.060017	0.109138	0.040660	0.030018	-0.017203	0.007806	0.009132	-0.052655
UA1	-0.049543	0.042127	0.090813	0.074072	0.041322	0.754007	-0.019062	0.125323	-0.025363	-0.085862	-0.021902	0.085750
UA2	0.074715	-0.004850	0.042390	-0.042387	-0.074804	0.818551	0.053183	0.095615	0.091620	0.211331	-0.004424	0.029281
UA3	0.092613	-0.063982	0.047179	0.031438	-0.152487	0.821504	0.111871	0.072739	0.011290	0.142400	0.073010	0.063165
UA4	0.095568	-0.061986	-0.005011	-0.059080	0.028577	0.718907	0.020764	0.061683	0.162720	0.004121	0.134255	-0.051730
M/F1	0.066688	-0.009955	0.092702	0.065783	-0.086066	0.145765	0.036032	0.688346	-0.107127	0.082084	-0.004203	0.251823
M/F2	0.077151	0.012987	-0.106298	0.051253	0.065860	0.173288	0.152810	0.707496	0.083455	0.070360	0.091568	0.035117
M/F3	0.021950	0.080419	0.114099	0.009961	0.043611	0.117034	0.189907	0.681084	0.123203	-0.026648	0.081302	0.144353
M/F4	0.199186	-0.169559	-0.035688	0.111338	-0.028806	-0.062909	0.010089	0.709155	0.040494	0.324165	0.132000	-0.089954
UB1	0.114473	0.045889	-0.045456	0.092310	-0.200420	0.066162	0.034435	0.306869	0.107426	0.680499	0.103814	-0.012573
UB2	0.077106	-0.025904	0.067979	0.037962	0.037402	0.053933	0.215245	0.026554	0.030253	0.789511	0.123186	0.057519
UB3	0.037734	0.057891	-0.022209	0.081372	-0.000247	0.119731	0.064991	0.063350	0.064421	0.755983	-0.028075	0.182673
Expl.Var	2.718406	3.426862	2.965246	3.215114	3.086101	2.696315	2.437308	2.364802	2.086662	2.152457	2.082449	2.361048
Prp.Totl	0.059096	0.074497	0.064462	0.069894	0.067089	0.058616	0.052985	0.051409	0.045362	0.046793	0.045271	0.051327

Appendix G: Factor Loadings of South African Data – Screen Shot

Factor Loadings (Varimax normalized) (Relevant_SouthAfrican_Data.sta)
Extraction: Principal components
(Marked loadings are >.500000)

Variable	Factor 1	Factor 2	Factor 3	Factor 4	Factor 5	Factor 6	Factor 7	Factor 8	Factor 9	Factor 10	Factor 11	Factor 12
US1	0.776177	0.042153	-0.014600	0.133265	-0.083545	0.067831	-0.027962	0.030872	0.153389	0.058646	0.059535	0.059358
US2	0.545347	0.061323	0.086581	0.083001	-0.089148	0.087703	-0.042494	0.004702	0.094778	0.464150	0.129461	-0.153394
US3	0.830747	0.016383	-0.091583	0.010295	-0.033858	-0.005932	0.066701	0.082368	0.048995	0.056026	-0.010023	0.009129
US4	0.689642	0.074454	-0.099955	-0.167016	-0.101415	-0.115176	0.124580	0.059341	0.186486	0.165247	0.008954	-0.033948
TP1	0.242152	-0.159408	0.021498	-0.051195	0.027220	-0.041734	0.024205	0.036354	0.694354	0.172059	0.134730	0.133479
TP2	0.163054	0.026560	0.001178	-0.112283	0.050244	-0.056719	0.132754	0.012367	0.627580	0.209969	0.138691	-0.088639
TP3	0.166728	0.061070	0.005699	0.116286	-0.081878	0.056744	0.110767	0.045582	0.669114	-0.127187	0.010425	-0.021805
TP4	-0.071863	0.014877	-0.046976	0.123406	0.129086	0.048370	0.014680	0.082974	0.786579	0.087525	0.094860	0.000978
UE1	0.309873	0.106628	0.013668	-0.115149	0.031095	0.086893	0.133688	0.227281	0.105412	0.511635	-0.160515	-0.055863
UE2	0.224786	0.038836	-0.141325	0.097087	0.065159	-0.062068	0.215071	0.135764	-0.035611	0.705838	0.129705	0.163940
UE3	-0.000661	0.083781	-0.022183	0.020971	-0.047300	0.042282	-0.004624	-0.012441	0.209420	0.772110	0.118522	0.062031
UE4	0.128921	0.045694	-0.040211	-0.038822	0.111609	-0.001747	-0.002611	-0.015946	0.050811	0.522022	0.464724	0.243815
EE1	0.138345	-0.036360	-0.130365	0.096920	0.061179	0.022939	0.138945	0.353774	0.174423	0.029567	0.561508	-0.098977
EE3	0.005172	0.007087	-0.084719	0.013586	0.046029	-0.048963	-0.148598	0.193533	0.202599	0.072203	0.676640	0.081095
EE4	-0.010717	-0.085456	0.063274	0.027148	-0.094281	0.162182	0.026321	0.014254	0.049615	0.103208	0.707512	-0.041237
SF1	-0.068154	0.044739	0.001817	0.149418	0.000163	0.714466	0.009993	0.144532	0.057760	0.153793	0.095973	0.264009
SF2	0.030245	0.031016	0.082365	-0.001437	-0.066892	0.775039	-0.038421	0.025929	-0.041469	0.044048	-0.065715	0.262824
SF3	0.081213	0.094184	-0.074910	-0.032279	-0.006259	0.681807	0.188277	-0.053144	0.007273	0.096125	-0.178031	0.182004
SF4	-0.048167	0.079403	0.043739	0.050954	-0.165025	0.748355	-0.065601	0.017332	0.041431	-0.038902	0.173227	0.093711
SF5	-0.015222	-0.032188	0.101281	0.007544	0.037858	0.768106	0.068240	0.114003	-0.029568	0.005760	0.136371	0.192448
CC1	0.075713	0.003412	0.002127	0.789664	0.078659	-0.047992	0.120949	0.037600	-0.035364	0.024086	0.066658	0.027933
CC2	-0.001303	-0.030069	0.025444	0.742596	-0.025820	-0.049977	0.020899	-0.050556	0.005480	-0.071245	0.078552	0.168985
CON1	-0.124095	0.039256	0.023440	0.690109	-0.022673	0.098860	-0.002648	0.124968	0.111622	-0.065375	0.025549	-0.012713
CON2	0.122364	0.063240	0.157790	0.657211	-0.037750	0.046613	-0.092054	0.184183	0.012359	0.273435	-0.152074	-0.108551
BI1	0.070177	-0.049357	-0.039944	0.054176	-0.072524	0.104241	-0.119642	0.817823	0.092157	0.151620	0.010822	0.043513
BI2	0.055301	0.041557	0.074122	0.080964	0.009861	0.021480	0.053511	0.828620	0.074868	0.020584	0.160682	0.009168
BI3	0.040892	0.054751	0.034536	0.099495	-0.022253	-0.041706	0.203881	0.794741	-0.021477	0.007194	0.136162	0.119975
IDV1	-0.003523	-0.121240	0.836218	0.032122	0.054941	0.085860	0.146062	-0.009205	-0.086245	-0.002496	-0.028611	-0.115542
IDV2	-0.083083	-0.045262	0.799509	0.113612	0.007663	0.097187	0.031605	0.069969	0.035648	0.000669	0.095011	-0.154278
IDV3	-0.038499	-0.119900	0.801830	0.031084	0.096646	-0.038004	0.019981	0.069674	-0.007400	-0.055322	-0.082210	0.236672
IDV4	-0.045255	-0.158679	0.814104	-0.001297	0.074796	-0.060542	0.100405	-0.071608	0.026079	-0.045347	-0.074583	0.136609
PD1	-0.045515	0.848493	0.174128	0.047648	0.036608	-0.114910	0.000915	-0.071176	0.022420	-0.005678	0.062657	-0.001882
PD2	-0.029574	0.889532	0.053837	-0.040514	0.065317	-0.065258	0.006408	0.016592	-0.031459	-0.051479	0.029658	0.055980
PD3	-0.027353	0.875708	0.122919	-0.072070	0.145124	0.011682	0.020526	-0.029200	-0.007507	-0.105178	0.017061	-0.109805
PD4	-0.058590	0.871037	0.078832	0.003529	0.104100	0.034197	-0.121484	0.025784	0.040779	-0.046122	-0.013319	-0.024204
UA1	-0.022299	-0.126940	0.066073	-0.008887	0.703848	0.062849	-0.109691	-0.241189	0.095172	-0.037357	-0.152166	-0.124346
UA2	-0.082451	-0.079500	0.046022	0.030005	0.807073	-0.124161	-0.106157	0.002300	0.032899	-0.087164	0.002873	-0.014986
UA3	-0.022746	-0.122578	0.027496	-0.187135	0.805210	-0.093630	0.022928	0.041681	-0.009012	0.018330	0.081061	0.127111
UA4	-0.108316	-0.036874	0.089278	0.162334	0.754110	0.041965	-0.084152	0.072837	0.007274	0.146183	0.049067	-0.055180
M/F1	0.038580	-0.055339	-0.023651	0.070642	-0.081970	-0.068220	0.619341	-0.042171	0.086604	0.125427	-0.067036	-0.069258
M/F2	0.063547	0.025009	0.201184	-0.027034	-0.118391	0.132093	0.666020	0.065650	0.097956	-0.001548	-0.087596	0.016635
M/F3	0.118244	0.179811	0.070984	0.043257	-0.048752	0.098418	0.767716	0.083996	0.050977	0.041634	0.179467	-0.026207
M/F4	-0.219676	-0.192468	0.150965	0.081431	-0.155952	-0.010334	0.531676	0.094677	0.172426	0.195527	-0.175479	0.095311
UB1	0.186468	0.117028	0.055147	-0.087099	0.000143	0.120661	0.252166	-0.073513	-0.106976	0.178726	0.033143	0.620795
UB2	0.006333	0.038300	0.061591	0.061660	0.045370	0.010667	0.225834	0.203660	0.064738	-0.078725	0.096150	0.767149
UB3	0.110245	0.022780	0.010842	-0.017600	-0.017079	0.152336	0.079889	0.134752	0.113515	0.083094	0.075744	0.779489
Expl.Var	2.578556	3.325514	2.927928	2.372482	2.604586	2.002369	2.186911	2.507470	2.281869	2.289204	1.936819	1.607265
Prp.Totl	0.056056	0.072294	0.063651	0.051576	0.056621	0.043530	0.047542	0.054510	0.049606	0.049765	0.042105	0.034941

Appendix H: Correlation Coefficients of Nigerian Data – Screen Shot

Correlations (Nigerian_Ave.sta)
Marked correlations are significant at p < .05000
N=231 (Casewise deletion of missing data)

Variable	Means	Std.Dev.	US	TP	UE	EE	SF	CC	CON	BI	IDV	PD	UA	M/F	UB
US	2.670996	1.147295	1.000000	0.449643	0.389825	0.337971	0.021830	0.026596	0.069778	0.245360	-0.035303	-0.042599	0.186589	0.276344	0.252179
TP	3.009524	0.990079	0.449643	1.000000	0.518347	0.491480	0.192788	0.054600	0.000201	0.236640	-0.185611	-0.108275	0.152172	0.332480	0.322357
UE	2.714286	0.965194	0.389825	0.518347	1.000000	0.403652	0.224982	0.049972	-0.009777	0.391331	-0.124405	-0.152139	0.193534	0.333910	0.321747
EE	2.683983	1.110583	0.337971	0.491480	0.403652	1.000000	0.255062	0.139649	0.121792	0.298492	-0.154565	-0.046620	0.282216	0.227087	0.331629
SF	3.022511	1.217058	0.021830	0.192788	0.224982	0.255062	1.000000	0.036906	0.024382	0.190551	-0.000859	-0.060829	0.027682	0.161450	0.157196
CC	3.456710	1.793184	0.026596	0.054600	0.049972	0.139649	0.036906	1.000000	0.689349	0.006480	0.081767	-0.046126	0.095321	0.020033	-0.004212
CON	3.467532	1.563172	0.069778	0.000201	-0.009777	0.121792	0.024382	0.689349	1.000000	0.015327	0.052139	-0.176906	0.101820	0.034934	0.030805
BI	3.242424	1.328082	0.245360	0.236640	0.391331	0.298492	0.190551	0.006480	0.015327	1.000000	0.068522	0.077620	0.201433	0.329214	0.307026
IDV	3.944805	1.718327	-0.035303	-0.185611	-0.124405	-0.154565	-0.000859	0.081767	0.052139	0.068522	1.000000	0.184680	-0.080953	-0.019592	-0.115049
PD	4.531385	1.639307	-0.042599	-0.108275	-0.152139	-0.046620	-0.060829	-0.046126	-0.176906	0.077620	0.184680	1.000000	0.028079	0.034839	-0.071652
UA	3.001082	1.386562	0.186589	0.152172	0.193534	0.282216	0.027682	0.095321	0.101820	0.201433	-0.080953	0.028079	1.000000	0.255869	0.225498
M/F	2.923160	1.208122	0.276344	0.332480	0.333910	0.227087	0.161450	0.020033	0.034934	0.329214	-0.019592	0.034839	0.255869	1.000000	0.437343
UB	2.797619	1.093163	0.252179	0.322357	0.321747	0.331629	0.157196	-0.004212	0.030805	0.307026	-0.115049	-0.071652	0.225498	0.437343	1.000000

Appendix I: Correlation Coefficients of South African Data – Screen Shot

Correlations (South_African_Ave.sta)
Marked correlations are significant at p < .05000
N=220 (Casewise deletion of missing data)

Variable	Means	Std.Dev.	US	TP	UE	EE	SF	CC	CON	BI	IDV	PD	UA	M/F	UB
US	2.711364	1.065592	1.000000	0.342544	0.424699	0.146467	0.030916	0.022514	0.077774	0.187169	-0.105653	-0.133679	-0.155738	0.149198	0.202515
TP	2.559091	0.851943	0.342544	1.000000	0.287282	0.304068	0.060835	0.067422	0.130012	0.159481	-0.014951	0.018933	0.059068	0.216346	0.152978
UE	2.868182	1.116864	0.424699	0.287282	1.000000	0.264390	0.182455	0.031746	0.096359	0.220840	-0.084115	-0.154635	0.005874	0.204980	0.265179
EE	2.446591	0.952190	0.146467	0.304068	0.264390	1.000000	0.112677	0.057528	0.048822	0.301608	-0.062805	0.074921	0.037380	0.062942	0.158133
SF	2.423636	0.769383	0.030916	0.060835	0.182455	0.112677	1.000000	0.063427	0.104843	0.228774	0.080389	-0.109071	-0.097912	0.146471	0.263256
CC	2.327273	1.029111	0.022514	0.067422	0.031746	0.057528	0.063427	1.000000	0.521026	0.185576	0.083166	0.000030	0.010622	0.062624	0.007645
CON	2.275000	1.017232	0.077774	0.130012	0.096359	0.048822	0.104843	0.521026	1.000000	0.219029	0.124644	-0.073010	-0.031215	0.088929	0.026452
BI	3.273864	1.474188	0.187169	0.159481	0.220840	0.301608	0.228774	0.185576	0.219029	1.000000	0.116709	-0.080295	-0.086354	0.231168	0.285568
IDV	4.437500	1.707261	-0.105653	-0.014951	-0.084115	-0.062805	0.080389	0.083166	0.124644	0.116709	1.000000	0.247897	0.139492	0.210202	0.098196
PD	4.477273	1.683097	-0.133679	0.018933	-0.154635	0.074921	-0.109071	0.000030	-0.073010	-0.080295	0.247897	1.000000	0.221707	-0.033219	-0.133195
UA	2.223864	0.994935	-0.155738	0.059068	0.005874	0.037380	-0.097912	0.010622	-0.031215	-0.086354	0.139492	0.221707	1.000000	-0.178076	-0.053804
M/F	3.185227	1.251510	0.149198	0.216346	0.204980	0.062942	0.146471	0.062624	0.088929	0.231168	0.210202	-0.033219	-0.178076	1.000000	0.518380
UB	2.936364	1.353347	0.202515	0.152978	0.265179	0.158133	0.263256	0.007645	0.026452	0.285568	0.098196	-0.133195	-0.053804	0.518380	1.000000

Appendix J: Summary of Regression Analysis of the Nigerian Data – Screen Shot

Statistic	Summary Statistics; DV:
	Value
Multiple R	0.152172067
Multiple R²	0.0231563379
Adjusted R²	0.0189091916
F(1,230)	5.45221097
p	0.0204049554
Std.Err. of Estimate	0.978548707

N=232	Regression Summary for Dependent ' R= .15217207 R²= .02315634 Adjuste F(1,230)=5.4522 p<.02040 Std.Error			
	b*	Std.Err. of b*	b	Std.E of
Intercept			2.683429	0.153
UA	0.152172	0.065170	0.108659	0.046

Statistic	Summary Statistics; DV:
	Value
Multiple R	0.485570179
Multiple R²	0.235778399
Adjusted R²	0.229103975
F(2,229)	35.3256525
p	4.25217045E-14
Std.Err. of Estimate	1.00515002

N=232	Regression Summary for Dependent ' R= .48557018 R²= .23577840 Adjuste F(2,229)=35.326 p<.00000 Std.Error			
	b*	Std.Err. of b*	b	Std.E of
Intercept			0.798816	0.232
TP	0.338539	0.067552	0.392296	0.078
UE	0.214344	0.067552	0.254784	0.080

Statistic	Summary Statistics; DV:
	Value
Multiple R	0.577205887
Multiple R²	0.333166636
Adjusted R²	0.315384413
F(6,225)	18.7359385
p	1.18947174E-17
Std.Err. of Estimate	0.796885481

N=232	Regression Summary for Dependent ' R= .57720589 R²= .33316664 Adjuste F(6,225)=18.736 p<.00000 Std.Error			
	b*	Std.Err. of b*	b	St
Intercept			0.676553	0.2
TP	0.365284	0.065529	0.356103	0.0
UA	0.053204	0.058233	0.037036	0.0
IDV	-0.026451	0.055749	-0.014858	0.0
M/F	0.150072	0.059620	0.119896	0.0
EE	0.147687	0.065823	0.128353	0.0
SF	0.091166	0.056921	0.072299	0.0

Statistic	Summary Statistics; DV:
	Value
Multiple R	0.350466956
Multiple R²	0.122827087
Adjusted R²	0.111285339
F(3,228)	10.6419823
p	0.00000141775945
Std.Err. of Estimate	1.04469642

N=232	Regression Summary for Dependent ' R= .35046696 R²= .12282709 Adjuste F(3,228)=10.642 p<.00000 Std.Error			
	b*	Std.Err. of b*	b	St
Intercept			2.026230	0.2
IDV	-0.132775	0.062230	-0.085815	0.0
UA	0.229023	0.064361	0.183438	0.0
M/F	0.165886	0.064162	0.152493	0.0

Statistic	Summary Statistics; DV:
	Value
Multiple R	0.457576972
Multiple R²	0.209376685
Adjusted R²	0.188293397
F(6,225)	9.93093112
p	0.00000000101176412
Std.Err. of Estimate	1.19393935

N=232	Regression Summary for Dependent ' R= .45757697 R²= .20937668 Adjuste F(6,225)=9.9309 p<.00000 Std.Error			
	b*	Std.Err. of b*	b	St
Intercept			0.652507	0.4
TP	-0.045797	0.077201	-0.061431	0.1
UE	0.319154	0.073112	0.439147	0.1
EE	0.140569	0.071088	0.168099	0.0
SF	0.097976	0.062466	0.106914	0.0
US	0.097765	0.068850	0.113171	0.0
PD	0.137895	0.060086	0.111715	0.0

Statistic	Summary Statistics; DV:
	Value
Multiple R	0.307088225
Multiple R²	0.094303178
Adjusted R²	0.086358469
F(2,228)	11.8699349
p	0.0000124751032
Std.Err. of Estimate	1.04489538

N=231	Regression Summary for Dependent ' R= .30708823 R²= .09430318 Adjuste F(2,228)=11.870 p<.00001 Std.Error			
	b*	Std.Err. of b*	b	St
Intercept			1.991163	0.2
CC	-0.006201	0.063028	-0.003780	0.0
BI	0.307066	0.063028	0.252750	0.0

Appendix K: Summary of Regression Analysis of the South African Data – Screen Shot

Statistic	Summary Statistics; DV:
	Value
Multiple R	0.0590676986
Multiple R²	0.00348899302
Adjusted R²	-0.00106128555
F(1,219)	0.766764708
p	0.382179171
Std.Err. of Estimate	0.850455791

N=221	Regression Summary for Dependent ' R= .05906770 R²= .00348899 Adjuste F(1,219)=.76676 p<.38218 Std.Error			
	b*	Std.Err. of b*	b	Std.E of
Intercept			2.446611	0.140
UA	0.059068	0.067456	0.050579	0.057

Statistic	Summary Statistics; DV:
	Value
Multiple R	0.4830941
Multiple R²	0.23337992
Adjusted R²	0.22634671
F(2,218)	33.182554
p	0.00000000000026256668
Std.Err. of Estimate	0.93513633

N=221	Regression Summary for Dependent ' R= .48309412 R²= .23337993 Adjuste F(2,218)=33.183 p<.00000 Std.Error			
	b*	Std.Err. of b*	b	Std.E of
Intercept			0.968739	0.229
TP	0.240374	0.061911	0.300654	0.077
UE	0.355644	0.061911	0.339317	0.059

Statistic	Summary Statistics; DV:
	Value
Multiple R	0.427264094
Multiple R²	0.182554606
Adjusted R²	0.159635577
F(6,214)	7.96519785
p	0.0000000915489551
Std.Err. of Estimate	1.02151505

N=221	Regression Summary for Dependent ' R= .42726409 R²= .18255461 Adjuste F(6,214)=7.9652 p<.00000 Std.Error			
	b*	Std.Err. of b*	b	St
Intercept			1.214620	0.4
TP	0.190261	0.066605	0.249425	0.0
UA	0.061088	0.064794	0.068574	0.0
PD	-0.169102	0.063858	-0.112212	0.0
M/F	0.139817	0.065036	0.124774	0.0
EE	0.195057	0.065442	0.228790	0.0
SF	0.115960	0.063342	0.168332	0.0

Statistic	Summary Statistics; DV:
	Value
Multiple R	0.119195294
Multiple R²	0.0142075181
Adjusted R²	0.000579050563
F(3,217)	1.04248831
p	0.374636471
Std.Err. of Estimate	0.949748691

N=221	Regression Summary for Dependent ' R= .11919529 R²= .01420752 Adjuste F(3,217)=1.0425 p<.37464 Std.Error			
	b*	Std.Err. of b*	b	St
Intercept			2.303320	0.2
UA	0.066981	0.069684	0.064103	0.0
IDV	-0.091948	0.070137	-0.051282	0.0
M/F	0.094197	0.070579	0.071669	0.0

Statistic	Summary Statistics; DV:
	Value
Multiple R	0.395978696
Multiple R²	0.156799128
Adjusted R²	0.133157982
F(6,214)	6.63246732
p	0.00000189799289
Std.Err. of Estimate	1.36940992

N=221	Regression Summary for Dependent ' R= .39597870 R²= .15679913 Adjuste F(6,214)=6.6325 p<.00000 Std.Error			
	b*	Std.Err. of b*	b	St
Intercept			1.004086	0.5
TP	0.020522	0.070032	0.035511	0.1
UE	0.064335	0.073195	0.084918	0.0
EE	0.247247	0.067775	0.382790	0.1
SF	0.178626	0.064399	0.342258	0.1
US	0.103604	0.072184	0.143330	0.0
PD	-0.055926	0.064654	-0.048985	0.0

Statistic	Summary Statistics; DV:
	Value
Multiple R	0.289273312
Multiple R²	0.0836790493
Adjusted R²	0.0752336949
F(2,217)	9.90829342
p	0.0000762370837
Std.Err. of Estimate	1.30144313

N=220	Regression Summary for Dependent ' R= .28927331 R²= .08367905 Adjuste F(2,217)=9.9083 p<.00008 Std.Error			
	b*	Std.Err. of b*	b	St
Intercept			2.195636	0.2
CC	-0.046967	0.066131	-0.061765	0.0
BI	0.294284	0.066131	0.270161	0.0

Appendix L: Summary of Cronbach Alpha of the Nigerian Data – Screen Shot

variable	Summary for scale: Mean=10.6840 Std Cronbach alpha: .788448 Standardized Average inter-item corr.: .493808 Mean if deleted	Var. if deleted	StDv. if deleted	Itm-Tot Correl.
US1	8.168831	14.29617	3.781028	0.44078
US2	8.004329	12.17747	3.489623	0.58571
US3	8.056277	11.02281	3.320061	0.73406
US4	7.822511	13.01179	3.607186	0.64628

variable	Summary for scale: Mean=12.0693 Std Cronbach alpha: .754293 Standardized Average inter-item corr.: .440655 Mean if deleted	Var. if deleted	StDv. if deleted	Itm-Tot Correl.
TP1	9.047619	11.29211	3.360373	0.51637
TP2	9.164502	10.27597	3.205615	0.65135
TP3	9.207792	11.67111	3.416300	0.53616
TP4	8.787879	10.75587	3.279614	0.50856

variable	Summary for scale: Mean=10.8571 Std Cronbach alpha: .719595 Standardized Average inter-item corr.: .394980 Mean if deleted	Var. if deleted	StDv. if deleted	Itm-Tot Correl.
UE1	8.129870	8.56322	2.926298	0.51921
UE2	8.259740	10.01046	3.163931	0.45288
UE3	8.103896	9.03682	3.006131	0.55370
UE4	8.077922	8.90302	2.983793	0.51000

variable	Summary for scale: Mean=8.10390 Std Cronbach alpha: .715448 Standardized Average inter-item corr.: .441627 Mean if deleted	Var. if deleted	StDv. if deleted	Itm-Tot Correl.
EE1	5.359307	6.299469	2.509874	0.53470
EE3	5.610390	7.034351	2.652235	0.54688
EE4	5.238095	6.190064	2.487984	0.46589

variable	Summary for scale: Mean=15.1126 Std Cronbach alpha: .841570 Standardized Average inter-item corr.: .519389 Mean if deleted	Var. if deleted	StDv. if deleted	Itm-Tot Correl.
SF1	12.12121	25.37925	5.037782	0.59923
SF2	12.08658	22.78904	4.773787	0.71021
SF3	12.18615	24.62769	4.962629	0.65294
SF4	12.21645	24.36007	4.935593	0.68371
SF5	11.83983	25.50248	5.049998	0.58657

variable	Summary for scale: Mean=6.91342 Std Cronbach alpha: .851317 Standardized Average inter-item corr.: .741178 Mean if deleted	Var. if deleted	StDv. if deleted	Itm-Tot Correl.
CC1	3.515152	3.721632	1.929153	0.74117
CC2	3.398268	3.633590	1.906198	0.74117

variable	Summary for scale: Mean=6.93506 Std Cronbach alpha: .773142 Standardized Average inter-item corr.: .632575 Mean if deleted	Var. if deleted	StDv. if deleted	Itm-Tot Correl.
CON1	3.471861	2.725399	1.650878	0.63257
CON2	3.463203	3.244317	1.801199	0.63257

variable	Summary for scale: Mean=10.1818 Std Cronbach alpha: .811060 Standardized Average inter-item corr.: .594935 Mean if deleted	Var. if deleted	StDv. if deleted	Itm-Tot Correl.
BI1	6.740260	10.82431	3.290032	0.61661
BI2	6.714286	9.27768	3.045928	0.75914
BI3	6.909091	10.29909	3.209220	0.61304

variable	Summary for scale: Mean=15.7792 Std Cronbach alpha: .870060 Standardized Average inter-item corr.: .630662 Mean if deleted	Var. if deleted	StDv. if deleted	Itm-Tot Correl.
IDV1	11.82684	25.28603	5.028522	0.76412
IDV2	11.74459	28.77892	5.364599	0.72129
IDV3	11.77056	28.89541	5.375445	0.72968
IDV4	11.99567	27.45886	5.240120	0.68791

variable	Summary for scale: Mean=18.1255 Std Cronbach alpha: .913957 Standardized Average inter-item corr.: .734980 Mean if deleted	Var. if deleted	StDv. if deleted	Itm-Tot Correl.
PD1	13.58874	22.32005	4.724410	0.82881
PD2	13.55411	24.88776	4.988764	0.79447
PD3	13.66234	25.57430	5.057104	0.81065
PD4	13.57143	26.30550	5.128889	0.79824

variable	Summary for scale: Mean=12.0043 Std Cronbach alpha: .807761 Standardized Average inter-item corr.: .527663 Mean if deleted	Var. if deleted	StDv. if deleted	Itm-Tot Correl.
UA1	8.727273	18.69185	4.323408	0.54474
UA2	8.961039	17.60454	4.195777	0.71369
UA3	9.194805	18.39062	4.288429	0.71789
UA4	9.129870	18.64114	4.317539	0.54425

variable	Summary for scale: Mean=11.6926 Std Cronbach alpha: .732577 Standardized Average inter-item corr.: .411214 Mean if deleted	Var. if deleted	StDv. if deleted	Itm-Tot Correl.
M/F1	8.861472	14.34445	3.787406	0.50878
M/F2	8.857142	13.94929	3.734875	0.55717
M/F3	8.865801	15.76987	3.971129	0.50009
M/F4	8.493506	12.91662	3.593971	0.53978

variable	Summary for scale: Mean=8.51515 Std Cronbach alpha: .716034 Standardized Average inter-item corr.: .458769 Mean if deleted	Var. if deleted	StDv. if deleted	Itm-Tot Correl.
UB1	5.571429	6.573902	2.563962	0.48950
UB2	5.636364	5.954349	2.440153	0.59331
UB3	5.822511	6.743389	2.596804	0.52679

Appendix M: Summary of Cronbach Alpha of the South African Data – Screen Shot

	Summary for scale: Mean=10.8455 Std Cronbach alpha: .780145 Standardized Average inter-item corr.: .471374			
variable	Mean if deleted	Var. if deleted	StDv. if deleted	Itm-Tot Correl.
US1	8.222727	10.52767	3.244636	0.61071
US2	8.195455	11.69361	3.419593	0.52850
US3	8.104546	10.00271	3.162706	0.64522
US4	8.013637	11.44981	3.383757	0.55835

	Summary for scale: Mean=10.4091 Std Cronbach alpha: .712368 Standardized Average inter-item corr.: .388043			
variable	Mean if deleted	Var. if deleted	StDv. if deleted	Itm-Tot Correl.
TP1	8.045455	8.107025	2.847284	0.53639
TP2	7.695455	7.802707	2.793333	0.48785
TP3	7.518182	7.976943	2.824348	0.44266
TP4	7.968182	7.867169	2.804847	0.53744

	Summary for scale: Mean=11.4727 Std Cronbach alpha: .704629 Standardized Average inter-item corr.: .377495			
variable	Mean if deleted	Var. if deleted	StDv. if deleted	Itm-Tot Correl.
UE1	8.495455	13.17725	3.630049	0.38076
UE2	8.722727	11.42766	3.380483	0.59339
UE3	8.590909	12.06901	3.474048	0.52092
UE4	8.609091	12.42901	3.525480	0.47348

	Summary for scale: Mean=7.42727 Std Cronbach alpha: .694506 Standardized Average inter-item corr.: .339157			
variable	Mean if deleted	Var. if deleted	StDv. if deleted	Itm-Tot Correl.
EE1	4.709091	4.897190	2.212960	0.37397
EE3	5.000000	5.409091	2.325745	0.45631
EE4	5.145454	5.687934	2.384939	0.40257

	Summary for scale: Mean=12.1182 Std Cronbach alpha: .724642 Standardized Average inter-item corr.: .349126			
variable	Mean if deleted	Var. if deleted	StDv. if deleted	Itm-Tot Correl.
SF1	9.609091	9.81992	3.133675	0.46402
SF2	9.540909	9.91196	3.148327	0.49672
SF3	9.895454	11.09362	3.330708	0.41895
SF4	9.790909	10.06537	3.172597	0.50441
SF5	9.636364	9.49504	3.081403	0.53978

	Summary for scale: Mean=4.65455 Std Cronbach alpha: .652060 Standardized Average inter-item corr.: .483896			
variable	Mean if deleted	Var. if deleted	StDv. if deleted	Itm-Tot Correl.
CC1	2.527273	1.385620	1.177124	0.48389
CC2	2.127273	1.456529	1.206867	0.48389

	Summary for scale: Mean=4.55000 Std Cronbach alpha: .549195 Standardized Average inter-item corr.: .381520			
variable	Mean if deleted	Var. if deleted	StDv. if deleted	Itm-Tot Correl.
CON1	2.254545	1.680661	1.296403	0.38152
CON2	2.295455	1.308161	1.143749	0.38152

	Summary for scale: Mean=10.1273 Std Cronbach alpha: .819040 Standardized Average inter-item corr.: .602104			
variable	Mean if deleted	Var. if deleted	StDv. if deleted	Itm-Tot Correl.
BI1	6.622727	12.37130	3.517286	0.64894
BI2	6.790909	11.60174	3.406132	0.68615
BI3	6.840909	12.23378	3.497682	0.68247

	Summary for scale: Mean=17.7500 Std Cronbach alpha: .853823 Standardized Average inter-item corr.: .607556			
variable	Mean if deleted	Var. if deleted	StDv. if deleted	Itm-Tot Correl.
IDV1	12.96364	24.58959	4.958789	0.75095
IDV2	12.97273	27.12653	5.208313	0.67288
IDV3	13.70909	29.78810	5.457848	0.67209
IDV4	13.60455	28.03907	5.295193	0.69924

	Summary for scale: Mean=17.9091 Std Cronbach alpha: .912302 Standardized Average inter-item corr.: .724430			
variable	Mean if deleted	Var. if deleted	StDv. if deleted	Itm-Tot Correl.
PD1	13.32727	26.12926	5.111679	0.78499
PD2	13.31364	25.16072	5.016047	0.81124
PD3	13.56364	26.28231	5.126628	0.81827
PD4	13.52273	26.91312	5.187786	0.78914

	Summary for scale: Mean=8.89545 Std Cronbach alpha: .796008 Standardized Average inter-item corr.: .497858			
variable	Mean if deleted	Var. if deleted	StDv. if deleted	Itm-Tot Correl.
UA1	6.872727	10.13835	3.184077	0.54212
UA2	6.654545	9.39884	3.065753	0.67402
UA3	6.700000	9.08273	3.013756	0.63045
UA4	6.459091	9.26651	3.044094	0.58828

	Summary for scale: Mean=12.7409 Std Cronbach alpha: .722308 Standardized Average inter-item corr.: .396432			
variable	Mean if deleted	Var. if deleted	StDv. if deleted	Itm-Tot Correl.
M/F1	9.922728	14.42585	3.798137	0.53821
M/F2	9.213636	15.94072	3.992584	0.46816
M/F3	9.568182	15.26353	3.906857	0.53312
M/F4	9.518182	15.69512	3.961707	0.50468

	Summary for scale: Mean=8.80455 Std Cronbach alpha: .717452 Standardized Average inter-item corr.: .462327			
variable	Mean if deleted	Var. if deleted	StDv. if deleted	Itm-Tot Correl.
UB1	5.931818	10.34535	3.216419	0.44553
UB2	5.940909	8.70106	2.949755	0.56190
UB3	5.736363	8.69413	2.948581	0.61102

Appendix N: Summary of Cronbach Alpha of the Combined Data – Screen Shot

	Summary for scale: Mean=10.7627 Std Cronbach alpha: .784441 Standardized Average inter-item corr.: .480049			
variable	Mean if deleted	Var. if deleted	StDv. if deleted	Itm-Tot Correl.
US1	8.195122	12.45860	3.529675	0.51560
US2	8.097561	11.95057	3.456960	0.55836
US3	8.079823	10.52578	3.244346	0.69289
US4	7.915743	12.25898	3.501282	0.60444

	Summary for scale: Mean=11.2594 Std Cronbach alpha: .738477 Standardized Average inter-item corr.: .416194			
variable	Mean if deleted	Var. if deleted	StDv. if deleted	Itm-Tot Correl.
TP1	8.558759	9.98934	3.160592	0.54078
TP2	8.447893	9.60871	3.099791	0.57987
TP3	8.383592	10.58235	3.253052	0.47288
TP4	8.388026	9.51462	3.084578	0.53114

	Summary for scale: Mean=11.1574 Std Cronbach alpha: .712499 Standardized Average inter-item corr.: .386233			
variable	Mean if deleted	Var. if deleted	StDv. if deleted	Itm-Tot Correl.
UE1	8.308204	10.84736	3.293533	0.44264
UE2	8.485587	10.75534	3.279533	0.53204
UE3	8.341463	10.57520	3.251953	0.53632
UE4	8.337029	10.69351	3.270093	0.48998

	Summary for scale: Mean=7.77384 Std Cronbach alpha: .701077 Standardized Average inter-item corr.: .388833			
variable	Mean if deleted	Var. if deleted	StDv. if deleted	Itm-Tot Correl.
EE1	5.042129	5.721064	2.391875	0.45539
EE3	5.312639	6.334630	2.516869	0.50402
EE4	5.192904	5.947267	2.438702	0.43292

	Summary for scale: Mean=13.6519 Std Cronbach alpha: .823491 Standardized Average inter-item corr.: .486873			
variable	Mean if deleted	Var. if deleted	StDv. if deleted	Itm-Tot Correl.
SF1	10.89579	19.36608	4.400691	0.57131
SF2	10.84479	18.12669	4.257545	0.65563
SF3	11.06874	19.33674	4.397356	0.61380
SF4	11.03326	18.85699	4.342463	0.64831
SF5	10.76497	18.90707	4.348226	0.59934

	Summary for scale: Mean=5.81153 Std Cronbach alpha: .827016 Standardized Average inter-item corr.: .705287			
variable	Mean if deleted	Var. if deleted	StDv. if deleted	Itm-Tot Correl.
CC1	3.033259	2.825945	1.681055	0.70528
CC2	2.778270	2.975226	1.724884	0.70528

	Summary for scale: Mean=5.77162 Std Cronbach alpha: .757898 Standardized Average inter-item corr.: .610207			
variable	Mean if deleted	Var. if deleted	StDv. if deleted	Itm-Tot Correl.
CON1	2.878049	2.586015	1.608109	0.61020
CON2	2.893570	2.640557	1.624979	0.61020

	Summary for scale: Mean=10.1552 Std Cronbach alpha: .814980 Standardized Average inter-item corr.: .596421			
variable	Mean if deleted	Var. if deleted	StDv. if deleted	Itm-Tot Correl.
BI1	6.682927	11.58239	3.403291	0.63318
BI2	6.751663	10.41283	3.226892	0.71872
BI3	6.875832	11.24401	3.353208	0.64880

	Summary for scale: Mean=16.7406 Std Cronbach alpha: .862146 Standardized Average inter-item corr.: .616217			
variable	Mean if deleted	Var. if deleted	StDv. if deleted	Itm-Tot Correl.
IDV1	12.38137	25.26919	5.026847	0.76063
IDV2	12.34368	28.34973	5.324447	0.69984
IDV3	12.71619	30.26978	5.501798	0.69219
IDV4	12.78049	28.38862	5.328097	0.69547

	Summary for scale: Mean=18.0200 Std Cronbach alpha: .912902 Standardized Average inter-item corr.: .728053			
variable	Mean if deleted	Var. if deleted	StDv. if deleted	Itm-Tot Correl.
PD1	13.46120	24.19528	4.918869	0.80428
PD2	13.43681	25.03537	5.003535	0.80213
PD3	13.61419	25.92210	5.091375	0.81413
PD4	13.54767	26.60250	5.157761	0.79238

	Summary for scale: Mean=10.4878 Std Cronbach alpha: .817478 Standardized Average inter-item corr.: .538628			
variable	Mean if deleted	Var. if deleted	StDv. if deleted	Itm-Tot Correl.
UA1	7.822617	15.37873	3.921573	0.57793
UA2	7.835920	14.93095	3.864059	0.72353
UA3	7.977827	15.40527	3.924955	0.70077
UA4	7.827051	15.85035	3.981250	0.56673

	Summary for scale: Mean=12.2040 Std Cronbach alpha: .726026 Standardized Average inter-item corr.: .401226			
variable	Mean if deleted	Var. if deleted	StDv. if deleted	Itm-Tot Correl.
M/F1	9.379157	14.66555	3.829563	0.51772
M/F2	9.031042	14.95247	3.866843	0.50941
M/F3	9.208426	15.64614	3.955520	0.51984
M/F4	8.993348	14.53432	3.812391	0.51632

	Summary for scale: Mean=8.65632 Std Cronbach alpha: .714357 Standardized Average inter-item corr.: .457098			
variable	Mean if deleted	Var. if deleted	StDv. if deleted	Itm-Tot Correl.
UB1	5.747228	8.446084	2.906215	0.46126
UB2	5.784923	7.317378	2.705065	0.57381
UB3	5.780488	7.696826	2.774315	0.56877